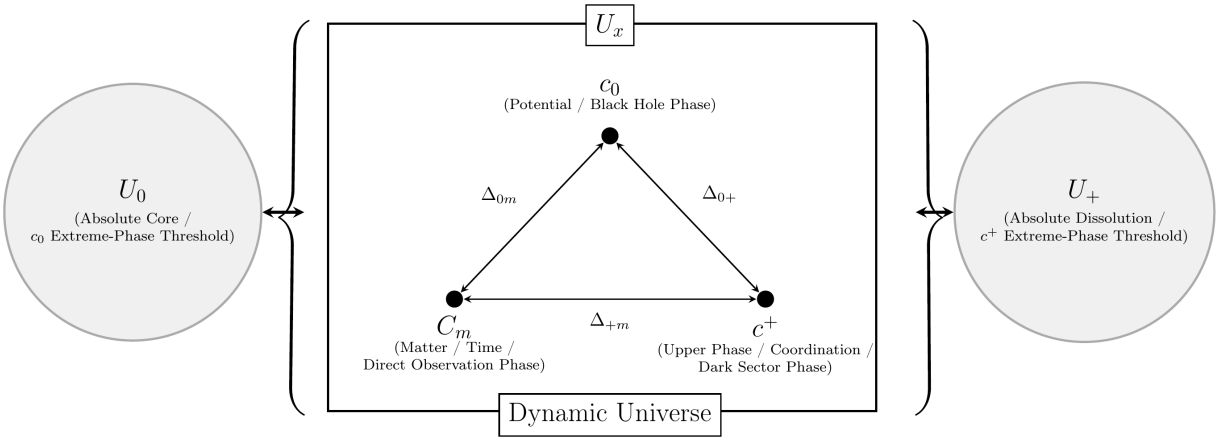
EVERTOPHY

Core Ontology

English Core Ontology Monograph

Version 2026-10-27 · English Minor03



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Note on terminology: throughout this English version, ***Force of Attraction*** *(Turkish: Çekim Kuvveti) names the fundamental ontological postulate of the framework. It is* ***not*** *gravity. Gravitation (Turkish: kütleçekim) is only one of its projections in the matter phase C_m (Section 1.2). Mathematical expressions are kept exactly as in the Turkish source, except for the words inside* `\text{…}`*; the Turkish labels that remain in subscripts and operator names are explained in APPENDIX L (Translation Key).*

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From the Author to the Reader

Before you begin reading this document, I would like to tell you where Evertophy came from. The shortest way to understand what it says is to understand what it is looking for.

Not a claim to an answer, but a search for one

Modern science is the most reliable structure of knowledge humanity has ever built. It rests on findings that have been tested by experiment, confirmed by observation and measured again and again. Yet when we look at this structure closely, we see that some of its pieces do not quite fit together.

We measure the effect of most of the matter and energy in the universe, but we do not know what it is; what we call "dark matter" and "dark energy" are, in a sense, names for our ignorance. Many of the fundamental equations of physics work the same way forwards and backwards in "time", yet in the world we live in time has a direction. Quantum mechanics works with extraordinary accuracy, but there is still no agreement on what a measurement "is". General relativity and quantum theory are each flawless in their own domain, but they do not come together. And the question "what was there before the Big Bang?" stands side by side with the debate over whether the question itself is meaningful.

These are not failures of science; they are its present limits. The measurement is there, the experiment is there. What is missing is the meaning that connects those measurements to one another.

Evertophy was born from these gaps. But I want to be clear from the outset: Evertophy does not claim to be the answer to these questions. Evertophy is a **search for an answer**: an attempt to look at poorly understood phenomena, and at scientific findings that appear as anomalies, from within a coherent framework that might connect them.

Basic principles: "Experiment, Measurement and Observation" are accepted unconditionally; "Postulate and Interpretation" are marked as optional

Evertophy's search for meaning and solutions obeys one basic rule, and every line of this document is bound to it:

> The outputs of Experiment, Measurement and Observation are accepted UNCONDITIONALLY; postulate and interpretation layers are evaluated as OPTIONAL – INTERPRETATION-FREE.

This means the following. Evertophy rejects no measurement. It declares no experimental result "wrong", and it bends no observation to fit its own framework. If a measurement contradicts an Evertophy reading, it is the reading that must change, not the measurement.

In scientific reality, "the measurement itself" and "the interpretation built on the measurement" are not the same thing. The track a particle leaves in a detector is a measurement; whether that track is a "wave-function collapse", a "branching of worlds" or something else is an interpretation. That galaxies rotate faster than expected is an observation; whether this comes from an invisible particle or from gravitation itself behaving differently is an interpretation.

Evertophy approaches these layers in three ways:

1. **Optional:** It treats none of the existing interpretations as mandatory, and rejects none of them. It keeps them all on the table as options.
2. **Interpretation-free:** It loads no interpretation onto the measurement itself. It takes the raw finding as it is and places its own reading on top of it as a separate layer. The reading Evertophy proposes is also an option; it is a candidate to be tested alongside the others, not to replace them.
3. **Physical reality and mathematics:** The mathematical flawlessness of a theory or hypothesis does not, by itself, count as physical reality (experiment, measurement, observation); such a theory has the same standing as the two items above. By contrast, a mathematical representation that correctly reproduces a measurement is accepted unconditionally within the scope of that measurement. The same measurement may have more than one correct representation — the same orbit can be written in the language of Newton and in that of general relativity — and none of these representations is ontologically prior to another.

> Measurement: unconditional Representation: valid within the scope in which it reproduces the measurement Ontological priority among representations: none

Seen from this perspective, Evertophy readings should be evaluated as follows. Evertophy unconditionally accepts the entire scope of General Relativity, the Standard Model, Quantum Mechanics and Cosmology that rests on experiment, measurement and observation. It does not put itself in the place of any model or theorem. Evertophy holds the status of a **Research Programme / Candidate Encompassing Framework** that seeks to be a "Rosetta Stone" for bringing together the missing pieces of science — a common translation grammar for existing scientific frameworks that speak in different languages.

The search for meaning: joining the disconnected pieces of science

How, then, does Evertophy try to join these pieces?

The core Evertophy proposal is this: reality does not consist of a single plane, nor only of particles made of matter; it unfolds in a **THREE-PHASE** structure. The whole of the structure formed by the three phases is called the **Dynamic Universe** (U_x). The principle that holds these three phases together, and that underlies every interaction among them, is the **Force of Attraction**; it is Evertophy's most fundamental ontological postulate (Section 1.2). The four forces we know — Gravitation, the Strong Nuclear Force, the Weak Nuclear Force and the Electromagnetic Force — are different projections of the Force of Attraction **according to scale, amount of mass and phase**.

$$\{\text{Gravitation},\ \text{Strong},\ \text{Weak},\ \text{Electromagnetism}\} \;=\; \Pi_{\text{scale, mass, phase}}\left[\,\text{Force of Attraction}\,\right]$$

Symbol	Meaning
$\Pi_{\text{scale, mass, phase}}$	Projection: the form the Force of Attraction takes at a given scale, amount of mass and phase; its formal definition is open
Force of Attraction	Fundamental ontological postulate; it is not gravitation — gravitation is one of its projections in Cm

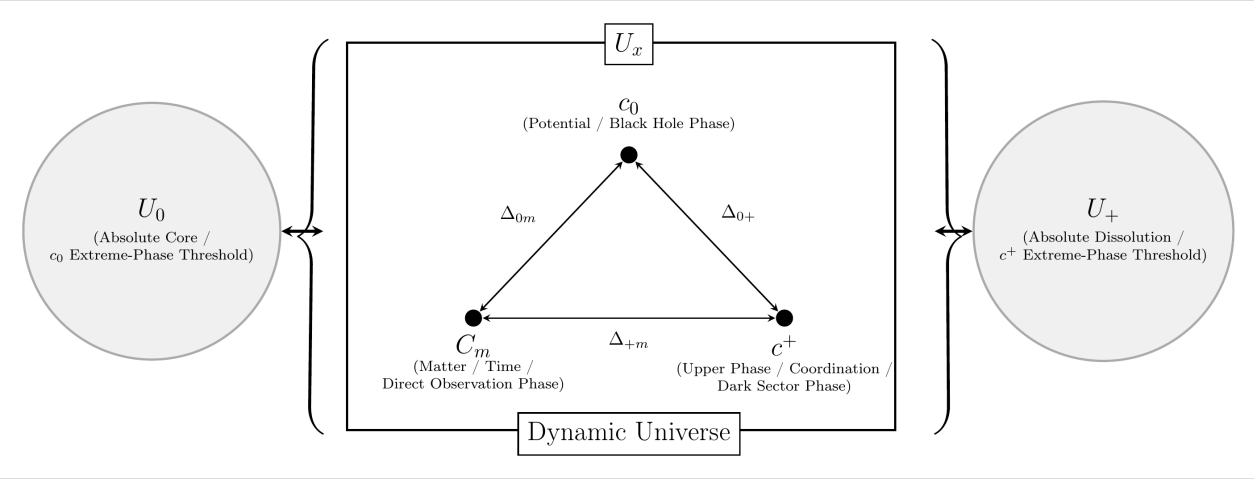


Figure 1. The canonical figure of the Evertophy core ontology: two ontological levels — the outer poles U_0 and U_+, and inside U_x (Dynamic Universe) with the three phases (c_0, C_m, c^+) and the complete bidirectional triangle.

How to read the figure

The figure above shows the entire ontological skeleton of Evertophy in a single picture. The picture consists of two levels, and the two levels must not be confused with each other.

Inner level — the phase level. Inside the central rectangle there are three nodes: at the top **c₀** (Potential), at the lower left **Cₘ** (Matter/Time), at the lower right **c⁺** (Upper Phase / Coordination). These three nodes form a **complete triangle** (K3), in which each is directly connected to the other two. The edges of the triangle carry the names of the transitions:

Edge	Phases it connects	Record (stamp) behaviour	Observability from Cₘ
Δ_{0m}	c₀ ↔ Cₘ	Carries a stamp	Direct
Δ_{+m}	c⁺ ↔ Cₘ	Carries a stamp	Indirect
Δ_{0+}	c₀ ↔ c⁺	Produces no stamp (does not touch Cₘ)	Not observed

The fact that the arrows on the edges are **double-headed** is deliberate: phase transitions are bidirectional on all three edges. What is irreversible is not the transition itself, but the record that is produced in Cₘ during the transition and sealed in c⁺ (Sections 13–14). Drawing c₀ at the top of the figure is only a drawing convention; it does not mean a hierarchy or a centre. From the point of view of measurement and record, the centre is Cₘ, but topologically Cₘ is not a mandatory intermediate stop: there is a direct edge between c₀ and c⁺.

$$c_0 \leftrightarrow C_m, \qquad C_m \leftrightarrow c^+, \qquad c_0 \leftrightarrow c^+$$

The rectangle — the Dynamic Universe (U_x). The whole that the three phases form together is U_x. U_x is not a fourth phase, nor a node added to the triangle; it is the name of the holistic structure in which the three phases are realized together. Time, space and measurement live **inside** this whole, in the C_m phase.

Outer level — the global level. To the left of the rectangle is U_0 (Absolute Core), to its right U_+ (Absolute Dissolution). These two red circles are not phases; they are the two **limiting conditions** of the Dynamic Universe as a whole. This is why the curly brackets are drawn in the figure: the bidirectional arrows of U_0 and U_+ connect not to any vertex of the triangle but to the **whole** enclosed by the brackets.

$$U_0 \leftrightarrow U_x \leftrightarrow U_+, \qquad U_0,\, U_x,\, U_+ \notin \{c_0,\, C_m,\, c^+\}$$

This distinction matters: the formation of a single black hole (a region passing into the c_0 regime) is a local phase event, and it happens in the universe every day. U_0, by contrast, is a global condition belonging to the **entire** Dynamic Universe. Likewise, c^+ is a phase and lies inside the universe; U_+ is a limiting condition of the whole and lies outside it. The global arrows make no claim of mathematical reversibility; they show the two ends of a relation. At the global level there is no metric, no space and no time; for this reason the language of "before", "after" or "speed" is not used there.

Ontological explanations of the figure's symbols

- U_0 **(Universe Core — Absolute Core):** The pre-layer in which all the structures that make up the Dynamic Universe we live in — c_0 (black holes), C_m (baryonic matter) and c^+ (the dark sector: dark matter and dark energy) — exist in **a single structural form**, contiguous to a degree that converges to the metric-gapless state at the Planck scale; that is, the "fundamental source" structure.
  - In the U_0 regime, three-dimensional Euclidean space, baryonic matter, dark matter and dark energy, and time **do not exist, but are potentially present**. With the Big Bang, it brings the three phases — c_0, C_m and c^+ — into existence **together, in the same constitution**; this constitution also gives birth to the **time** we experience as a unidirectional flow in the matter phase (emergent time; Section 7). This joint birth is not a sequential production: U_0 does not produce one first and then the other; all three are born at once.

$$U_0 \rightsquigarrow \{c_0,\, C_m,\, c^+\}_{\text{together, in the same constitution}}$$

  - When **all** the structures making up the Dynamic Universe have collapsed into the black-hole phase — that is, when the whole of U_x reaches the critical saturation threshold (Θ_0) — the state is represented by U_0. When this threshold is crossed, the Big Bang takes place and a new U_x (Dynamic Universe) is formed: three-dimensional Euclidean space, baryonic matter and the dark sector are established anew. The threshold is not U_0 itself; it lies at the **boundary** where the collapse end of U_x touches U_0 (Sections 2.6, 2.8).
  - U_0 is not a phase, nor a universe-scale subtype of c_0; there is no ordinary phase gate leading to or from it. The c_0 regime of a single black hole is local; U_0 is the global condition of the whole universe. No numerical mass value is assigned to U_0 (Section 2.10).

- U_+ **(Dissolved Universe — Absolute Dissolution / Absolute Rupture):** The limiting state in which the entire phase-structural resolution of the Dynamic Universe thins out until it crosses the global resolution limit. If U_0 is the global saturation pole, U_+ is the global dissolution pole. The names "Absolute Dissolution" and "Absolute Rupture" describe **the same limiting state**: the first emphasizes the state itself, the second the whole U_x structure reaching that state. The event that takes place when the whole of U_x crosses the critical threshold at the boundary of U_+ is called the **Big Rupture**; a new U_x is then formed.

$$\begin{cases} U_x \text{ crosses the critical threshold at the boundary of } U_0 & \Rightarrow \textbf{ Big Bang} \\ U_x \text{ crosses the critical threshold at the boundary of } U_+ & \Rightarrow \textbf{ Big Rupture} \end{cases}$$
$$\Longrightarrow$$
$$\text{a new } U_x \text{ is formed}$$

  - U_+ must not be confused with c⁺: **c⁺ is a phase and lies inside the universe; U_+ is a limiting condition of the whole and lies outside it.** U_+ does not mean "a great deal of c⁺"; it is a global resolution condition.
  - The *Big Rip* of standard cosmology is an event that **ends** the universe. In Evertophy, the Big Rupture is an end and at the same time a new birth. A shared word does not show that the meanings are the same.
  - That a new U_x is formed is canon; whether this takes place through the **same** production process as the birth at U_0 is open (Section 2.8).

- **Non-necessity / flexibility of the cycle:** The global circuit is not a mandatory, periodic time conveyor. It is not necessary for U_x to reach one of the global thresholds, nor for the universe to come to an end: **the Dynamic Universe may or may not come to an end.** There may be a direct relation between U_0 and U_+; but it has no representation in any known sense. Where there is no representation, Evertophy passes no judgement (Principle of Silence, Section 2.8).

- C_m **(Matter / Atom / Particle Phase):** The phase structure in which the physical reality we directly interact with exists: differentiated massive matter, atoms and subatomic particles, measurement processes, and the time we experience as a unidirectional flow. Physical time, three-dimensional Euclidean space, the metric and the speed-of-light limit are defined **only in Cm.**
  - **Kinematic membership band:** The kinematic band required for a physical structure to be a member of the Cm phase as matter is $0 < v < c$. $v = c$ is not the band itself but its **liminal boundary**; light (the photon) lies on this boundary.

$$\underbrace{0 < v < c}_{C_m \text{ matter membership}} \quad , \quad \underbrace{v = c}_{\text{liminal boundary (light)}} \quad , \quad \underbrace{c^+}_{\text{beyond-}c \text{ regime in which the band dissolves}}$$

  - The **"0"** at the lower end of the band is a **relative-speed floor** defined with respect to any cosmological or inertial reference frame in the universe. A particle at rest in a local laboratory (even with laboratory speed $v_{\text{lab}} = 0$) is a member of the Cm phase because of its internal dynamics, spin structure and cosmological drift, and it remains inside the membership band. In other words, v here is not a laboratory coordinate speed but a **membership reading**; the measured local speed does not by itself determine phase

membership. This reading does not presuppose a classical "privileged frame"; the precise mathematical definition of v is open (Section 3.3).

$$v_{\text{lab}} = 0 \;\not\Rightarrow\; c_0, \qquad 0 < v < c \;\neq\; \text{laboratory coordinate speed}$$

- **Speed of light (c):** In the Evertophy ontology, the speed of light is the **regime threshold boundary** of the C_m phase. For the structure of matter, the speed of light is an unsurpassable universal constant; but it is not an unsurpassable speed limit for the Dynamic Universe as a whole. The speed of light is the boundary of the band within which the matter phase can exist; it is the resolution limit of time and of the C_m phase. The other side of this boundary is the **c^+ phase regime**.
- **Bose–Einstein condensate (BEC):** The BEC, in which atoms pass into a single macroscopic quantum state at temperatures close to absolute zero, is **the medium in the matter phase that is closest to the c_0 environment**. The BEC is not c_0: time flows inside it and the system remains in C_m. But its collective single-structure behaviour, in which the distinction between "this atom" and "that atom" loses its operational content, is the clearest example of the c_0 intuition attainable in the laboratory.
- The experimental anchor points of this ontological approach are: quantum entanglement ("spooky action at a distance") and the material structure of the BEC.

- c_0 **(Potential / Black-Hole Phase):** The phase in which physically measurable matter loses its atomic and particle properties, and all particles merge — to a degree that converges to the metric-gapless state at the Planck scale — into the form of **a single integrated structure. In the Evertophy ontology, the black hole and the c_0 phase are ontologically identical** (author's ruling). In the black-hole phase, time and matter do not exist in the sense in which we can measure them: **they are undefined, but potentially present — not yet established.**
  - **Pre-temporal and pre-geometric regime:** c_0 is a pre-temporal and pre-geometric library of potential, in which three-dimensional Euclidean space, time and differential structure (∇, $\Box$) have not yet been established. In this phase, C_m-type length, duration and metric are undefined; mass, in turn, is tracked inside c_0 not as C_m-type rest mass but as a total magnitude and core capacity read from C_m (see below).
  - **Ontology of observation:** c_0 cannot be observed directly, because no observer can be inside it and it cannot be measured from within with the instruments of C_m. Its traces, however, are read in C_m in two ways:
    - **Cosmological and astrophysical traces:** The event horizons of black holes, gravitational time dilation, EHT shadow images and gravitational waves are measured phenomena. Evertophy reads them as indirect macroscopic traces of the c_0 structure on the C_m screen.
    - **Laboratory analogues:** The BEC, superfluidity and superconductivity in environments close to absolute zero are C_m environments in which the system passes into a single holistic quantum state. They are not c_0 itself but **the environments in the matter phase that are closest to the c_0 environment**; the similarity lies in collective single-structure behaviour (analogy, not identity).

- **The black-hole core and the rejection of the "infinite singularity" reading:** The singularity that classical general relativity gives for the centre of a black hole — in the sense of "infinite density and zero volume" — is read in Evertophy as a **regime error**: a result that spills over the domain of validity of the theory. A black hole is neither an annihilation nor an infinite singularity (author's ruling).
  - **Metric-gapless single structure (maximal saturation):** The structure inside the event horizon is **contiguous**, finite and **of a single form**, to a degree that converges to the metric-gapless state at the Planck scale. This statement does not mean "the black-hole core is Planck-sized"; what it means is that the mass structure inside the black hole is **entirely of a single form**, in which almost no metric gap remains between particles. This is the core logic of Evertophy's reading of c_0 and of black holes. The saturation is written through a reading of X; X itself is not a scalar, and what converges to saturation is its saturation reading:

$$\xi_{\text{sat}} = \pi_{\text{sat}}(X) \;\longrightarrow\; \xi_{\text{sat}}^{\max} \qquad (\text{in the normalized reading } \xi_{\text{sat}} \approx 1)$$

Symbol	Meaning
X	Dynamic meta-resolver; it is not a single number (Section 4)
π_{sat}	The saturation readout projection of X
ξ_{sat}	Saturation reading; when normalized, its upper bound is 1

  - **Loss of individuality:** Matter that crosses the event-horizon threshold and touches the c_0 structure is not annihilated, nor is it lost inside an infinite singularity; it loses its identity and separate addressability as a proton, electron or atom and **integrates into a single collective structure**. A particle that touches its surface through the Force of Attraction integrates with this structure, regardless of whether it is entangled. The particle outside may or may not keep its spin; spin and entanglement are preserved as long as there is no interaction with the environment (measurement or contact with matter). Mass is conserved independently of spin (author's ruling).
  - **Mass, volume and horizon:** The counting unit of core capacity is the **Planck mass** (author's ruling). The density of the single structure cannot exceed the Planck density. In addition — as a separate author's ruling — a more massive black hole is **not denser**; it has a **larger volume** of the same metric-gapless structure, and therefore a wider event horizon. Exact proportionality between volume and mass holds in the constant-density realization ($\rho_{c_0} = \rho_*$), in which the mean density is independent of mass (Section 3.2). The ratios are as follows:

$$N_{c_0} = \frac{M}{m_P}, \qquad \rho_{c_0} \le \rho_P = \frac{c^5}{\hbar G^2} \approx 5.16 \times 10^{96}\ \text{kg/m}^3, \qquad V_{c_0} \ge \frac{M}{\rho_P} = N_{c_0}\,\ell_P^3$$

$$R_{c_0} \propto M^{1/3}\ \ (\rho_{c_0}\ \text{constant}), \qquad R_s = \frac{2GM}{c^2} \propto M, \qquad A = 4\pi R_s^2 \propto M^2, \qquad \frac{R_{c_0}}{R_s} \propto M^{-2/3}$$

Symbol	Meaning
N_{c_0}	Core capacity counted in units of the Planck mass
$m_P = \sqrt{\hbar c/G}$	Planck mass ($\approx 2.18 \times 10^{-8}$ kg)
ρ_P, ℓ_P	Planck density and Planck length; $\rho_P\,\ell_P^3 = m_P$

Symbol	Meaning
V_{c_0}, R_{c_0}	Effective Cm volume and radius of the single structure ($R \propto M^{1/3}$ in the constant-density realization, $\rho_{c_0} = \rho_*$; the smallest values with $\rho_* = \rho_P$)
R_s, A	Horizon (Schwarzschild) radius and horizon area

As mass increases, both the volume of the single structure and the horizon grow, but **not at the same rate**: the radius of the single structure grows with the cube root of the mass, the horizon radius with the mass, and the horizon area with the square of the mass. Taking the density at its Planck value ($\rho_* = \rho_P$; the smallest radius), the radius of the single structure for a black hole of one solar mass is about 4.5×10^{-23} m: much larger than the Planck length (1.6×10^{-35} m) and much smaller than the horizon radius (about 3 km). For this reason the event horizon and the boundary of the single structure are not counted as the same thing; the internal profile of the single structure and its relation to the horizon are open (Section 3.2, APPENDIX K). The scaling of capacity with mass, and of horizon area with the square of mass, is consistent with the observationally tested area theorem; the area law, which states that entropy is proportional to area, is by contrast a theoretical result that has not yet been measured (Section 23.3).

- **Time, space and change in c₀ — the pre-temporal regime** *(historical name: stasis lock)*: Evertophy's emergent-time equation is as follows (the normalized form of the core scaffold; the microphysical definition of $\mathcal{G}_{C_m}$ is open):

$$dt = \Gamma\, \mathcal{G}_{C_m}\, d\lambda, \qquad \Gamma = \tau_0\, \tilde{\Gamma}$$

Symbol	Meaning
λ	Dimensionless ordering parameter; it is not physical time
$\mathcal{G}_{C_m}$	The structure of distinguishable change in Cm; defined only in Cm
τ_0	Time scale; it carries the dimension of time, $[\tau_0] = T$
$\tilde{\Gamma}$	Dimensionless readout coefficient, $[\tilde{\Gamma}] = 1$

This form is the normalized realization (Section 7.3) of the core scaffold ($dt = \Gamma\, \mathcal{G}_{C_m}\, d\tau$, Section 7.2); the τ in the core form is likewise a formal ordering variable. $\mathcal{G}_{C_m}\, d\lambda$ is the amount of distinguishable change in Cm.

- **Time = the reading of distinguishable change in Cm:** Time is the emergent reading of measurable change of state, and only in the Cm phase; change of position is one example of it. $\mathcal{G}_{C_m}$ is a Cm object: in c₀ it does not become zero, it is **not defined**.

$$T(c_0) = \perp_0, \qquad \mathcal{G}_{C_m}\big|_{c_0} = \perp_0 \neq 0$$

- **Time has not stopped; it has not yet been established:** Inside Cm, $\mathcal{G}_{C_m} = 0$ means "there is a clock, but it does not advance"; this is a Cm state. c₀ is different: there, the very concept of a clock cannot be established. For this reason time in c₀ does not "flow slowly", nor is it "a frozen river"; it is undefined in the time language of Cm. Writing "$dt = 0$" is only a pedagogical shorthand.

$$\perp_0 \neq \perp_+ \neq 0$$

Symbol	Meaning
$\perp_0$	The "not yet established" absence in c_0
$\perp_+$	The "dissolved" absence in c^+
0	The real numerical zero — a C_m value

- **Discrete particles and Euclidean space are not established in c_0:** In c_0, differentiated C_m matter goes to the limit of a collective single structure. The distinction between "this particle" and "that particle", and the distance between them, lose their operational content. C_m-type three-dimensional Euclidean space and the metric are not destroyed in c_0; they are **not yet established** ($g_{\mu\nu}$: $\perp_0$). Dissolution in the sense of "no longer there" ($\perp_+$) belongs to c^+.
- **Heat, temperature and accessible energy:** Temperature is the statistical measure of the disordered (thermal) motion of particles in C_m; heat is the energy transferred in this way. Both require C_m time and discrete particle motion. For this reason, temperature, heat, free thermodynamic processes and the standard dS/dt language are not defined in c_0 ($\perp_0$; Section 16.1). Energy, however, is not annihilated: the energy in c_0 is not read in C_m as accessible energy; total energy is conserved at the level of U_x (Section 16.7a).
- **c_0 is not nothingness:** What is absent is not c_0 itself, but the C_m concepts of time, space and temperature in c_0. c_0 is the potential/core phase in which time is not established; this is not a temporal priority but a position of regime (Section 3.2).

- **The relation of the c_0 phase to absolute zero (0 Kelvin) — Author's ruling**: $c_0 \neq$ Absolute Zero
  - **Conceptual distinction:** Absolute zero is the thermodynamic limit state within C_m itself; it is a C_m state. According to the third law of thermodynamics, it cannot be reached in a finite number of steps. And when it is approached, the system remains in C_m: quantum zero-point motion continues, clocks run and dt is defined. The most precise atomic clocks in fact work with ultra-cold atoms. In c_0, by contrast, the very concept of temperature is undefined. In short, absolute zero is the coldest state of C_m; c_0 is not a state of C_m at all.

$$T \to 0\,\mathrm{K} \;\Rightarrow\; C_m \text{ ground state}, \qquad T(c_0) = \perp_0$$

  - **BEC — the C_m environment closest to the c_0 environment, not c_0 itself:** In ultra-cold experiments that approach absolute zero (Bose–Einstein condensation), below the critical temperature a macroscopic fraction of the atoms fills the same quantum state. The system is described by a single macroscopic wave function (a "super-atom"); the distinction between "this atom" and "that atom" loses its operational content. For this reason the BEC is the environment in the matter phase that is closest to the c_0 environment, and the clearest example attainable in the laboratory for the c_0 intuition of a **collective single structure**; superfluidity belongs to the same family. The similarity lies only in collective single-structure behaviour: the BEC is not timeless; time flows inside it and the system remains in C_m. Cooling alone does not lead to c_0; what is approached in a BEC is not c_0 but the ground state of C_m.

$$\text{BEC} \neq c_0$$

(the environment in the matter phase closest to the c_0 environment; analogy, not identity)

- **Black holes and the Hawking temperature:** The Hawking temperature attributed to a black hole is interpreted as the thermal reading that the horizon gives to a distant C_m observer; it is not the internal temperature of c_0. This is a candidate reading; the relation between the horizon and the phase boundary, and the quantitative bridge, are open (Section 3.2).

$$T_H = \frac{\hbar c^3}{8\pi G M k_B}$$

In summary, **c_0 (the Core Phase)** is the **pre-temporal core regime** in which the measurable change belonging to C_m, three-dimensional Euclidean geometry and time are **not yet established**; in which matter is integrated into a single structural form that converges to the metric-gapless state; and in which information is potentially preserved in this integrated structure without being destroyed. Time in c_0 has not stopped; it has not yet been established.

- **c^+ (Dark Matter / Dark Energy / Vacuum Phase — Dissolved Phase):** All of the structure of the universe that is not in the form of matter (the entire particle structure) or of black holes is the c^+ phase: cosmic voids, the vacuum medium, dark matter and dark energy — and **even the space between the particles that make up the atom** is c^+ (author's ruling). In the Evertophy ontology, c^+ (the Timeless Upper Phase / Archive / Coordination Layer) is the upper coordination and archive layer of the complete-triangle phase architecture ($c_0 \leftrightarrow C_m \leftrightarrow c^+ \leftrightarrow c_0$), in which the constraints of massive matter, Euclidean geometry and the flow of time dissolve; historically, it was described as possessing "informational texture integrity" (graph state / texture integrity).

> Every region read as "empty space" on the C_m screen — from intergalactic voids to the space between the particles inside the atom — is the reading of c^+ in C_m .

  Since three-dimensional space is dissolved in c^+, it is not correct to say "c^+ is located somewhere"; the correct statement is that what C_m reads as "empty space" is c^+. This ruling does not change the measured results of atomic physics; the predictions of quantum mechanics inside the atom remain fully valid as the computational language of C_m.

  - **Ontological status — dissolution of C_m matter support and the timeless archive:**
    - **Matter-support dissolution:** In the c^+ phase, the massive particles, atomic structures and three-dimensional Euclidean metric ($g_{\mu\nu}$) specific to the matter phase we live in (C_m) are not valid:

$$\mathrm{supp}_{C_m}(\text{matter}) \to \varnothing, \qquad g_{\mu\nu}^{(C_m)} \to \perp_+$$

      In the c^+ phase, material mass, Euclidean length or physical duration cannot be preserved as such; these magnitudes belong to the readout instruments of the C_m screen.
    - **Timeless archive (provenance registry):** c^+ is not a metaphysical source of the future. It is the universal library of memory in which all the sealed records (sealed provenance) realized in the C_m phase are present together as a whole, without requiring temporal ordering. Being present together does not mean being accessible from C_m; access depends on an explicit readout law (Section 15.2).

- **Canonical identity:** In the Evertophy ontology, the c^+ phase is the phase identity of the dark sector, of the vacuum medium and of the empty spaces inside the structure of matter:

$$\boxed{c^+ \equiv \text{Dark Matter (DM)} \equiv \text{Dark Energy (DE)} \equiv \text{Vacuum}}$$

The "vacuum state" of quantum field theory, and the calculations made with it, are **the computational language within C_m** of this ontological identity; every effect measured in the vacuum is accepted unconditionally and is interpreted in Evertophy as the reading of c^+ in C_m.

Dark matter and dark energy, which astrophysicists search for as two separate mysterious structures or particles, are not two different entities in the Evertophy ontology. Both are different observational projections (readout modes) of the same c^+ phase, which appear according to the environment in which it is found when seen from the C_m screen:

$$c^+ \text{ Phase} \longrightarrow \begin{cases} \text{At galactic / cluster scale (clustered)} & \longrightarrow \text{Dark Matter (DM) reading} \\ \text{At cosmological scale / in voids (sustaining expansion)} & \longrightarrow \text{Dark Energy (DE) reading} \\ \text{At laboratory scale} & \longrightarrow \text{Vacuum reading} \end{cases}$$

Identity does not mean that the observed densities are equal; the ontological identity and the quantitative mechanism required for each observational phenomenon are separate things (Section 11.2).

- **Two appearances according to location and scale** *(also found in the archive under the names "bound" and "free")*:
  - **In galaxy clusters — clustered c^+ (the dark-matter reading):**
    - **Candidate reading:** c^+ clusters together with galaxies and with dense clusters of C_m baryonic matter, under the constraint coherence of the Force of Attraction.
    - **Observational reading:** To the C_m observer, this clustering appears as an **additional gravitational effect** that does not radiate and cannot be detected as a particle, but holds galaxy rotation curves (RAR) together and produces gravitational lensing. The source is c^+; the language of the reading is the gravitational and metric language of C_m; this reading does not add C_m-type rest mass or a metric to c^+. The quantitative mechanism is open.
  - **In cosmic voids and at the horizon of the universe — expansion-sustaining c^+ (the dark-energy reading):**
    - **Candidate reading:** Because matter density is very low in the great cosmic voids between galaxies, the pressure of matter on c^+ and the sealing constraint weaken.
    - **Observational reading:** c^+ that moves away from matter returns to its own natural relaxation regime. This is read not as an external "repulsive force" or an "anti-gravity fluid" but as a **volumetric phase expansion** arising from the release of the constraint. The C_m observer measures this expansion as the accelerating expansion of the universe (dark energy). The measured acceleration is accepted unconditionally; its connection with c^+ is an Evertophy reading, and its quantitative mechanism is open.

- **Emergent time, sealing and the record architecture:**

- **The dissolution of time in c⁺:** In Evertophy, physical time is not an independently running clock; it is an emergent reading that depends only on distinguishable change in the Cm phase ($\mathcal{G}_{C_m}$). In c⁺ there is no time, and no constraint that depends on time. This is a different absence from the "not yet established" absence in c0: in c⁺, the time that had been established in Cm is **dissolved**. Writing "$dt_{c^+} = 0$" is, as in c0, only a pedagogical shorthand; the ontological statement is $\perp_+$, and $\perp_+$ is not the numerical zero.

$$T(c^+) = \perp_+, \qquad \mathcal{G}_{C_m}\big|_{c^+} = \perp_+ \neq 0, \qquad dt_{c^+} = 0 \ \text{(pedagogical shorthand only)}$$

- **Sealing and the arrow of time:** Time exists only in Cm and is unidirectional; otherwise causality would disappear, because in the matter phase everything stands in a cause–effect relation. Phase transitions are bidirectional; but the record channel is **unidirectional** (Cm → c⁺), and once sealing has taken place the record is fixed (author's ruling). The unidirectional flow of time is associated with the fact that the record produced in Cm is written into c⁺ in this way — **append-only** and irreversibly. The "registry" is not an independent entity; it is the readout language used for this trace (Section 7.7a). As the computational language within Cm for the process at the moment of measurement, completely positive and trace-preserving quantum channels (CPTP, Kraus representation) can be used; these tools are not the definition of sealing, but a Cm model (Section 15.2).

$$\text{gate: } c_i \rightleftarrows c_j \ \text{(bidirectional)}, \qquad \text{record channel: } C_m \longrightarrow c^+ \ \text{(unidirectional; seal fixed)}$$

- **Sealing cost C_s — candidate reading:** Sealing a change from Cm into the c⁺ archive, and reading a c⁺-sourced effect on the Cm screen, may incur a processing cost. Reading this cost in Cm as gravitational time dilation and write latency — that is, as the relativity of time — is a **candidate reading**; it renames the measured results of general relativity and does not count as deriving them (Sections 8.7, 14.3).

- **Human perception of time, the $0 < v < c$ band and the c⁺ regime:**
  - **Perception and anomalies:** Human perception and measuring instruments measure entirely with the outputs of the Cm phase. Because we look at measurement results from inside Cm, we assume the unidirectional flow of time and the speed-of-light limit to be absolute. For this reason we classify the effects that appear at the boundary between c⁺ and Cm — quantum entanglement, tunnelling, the dark sector — as "impossible anomalies" or as "spooky faster-than-light effects".
  - **The beyond-light-speed regime:** In the Cm phase, material existence is possible only in the $0 < v < c$ band. The c⁺ phase is the beyond-c upper regime in which this band dissolves. There is no "faster-than-light particle motion" there, because in c⁺ the language of metric distance, time and particle acceleration is not defined. That c⁺ is beyond c does not mean a Cm-type motion with $dx/dt > c$ (Section 3.4).
  - **Structures on the boundary:** A structure can lie on the boundary of two regimes. A structure on the $v = c$ boundary of Cm is at the same time on the boundary of the c⁺ regime: the two regimes share this boundary. Lying on the boundary is not the same as being a member of either phase; light and gravitational waves propagate on this shared boundary, and the quantum and subatomic level also displays the behaviours of this boundary (Section 18.0).

$$\text{boundary}(C_m)\big|_{v=c} \;=\; \text{boundary}(c^{+})\big|_{C_m\ \text{side}},$$
$$\text{liminal} \neq C_m \text{ membership},$$
$$\text{liminal} \neq c^{+} \text{ membership}$$

- **Quantum phenomena and boundary regimes:**
  - **The Hartman effect — a timeless phase shortcut (compatible reading):** In quantum tunnelling, the fact that the traversal time of a particle inside the barrier does not grow with barrier thickness but saturates at a constant value (the Hartman effect) is a measured phenomenon. Evertophy reads this not as the particle crossing the barrier step by step in three-dimensional Euclidean space, but as the record meeting the barrier being temporarily loosened (unsealing), the particle using the metric-free c^+ phase shortcut, and being sealed again behind the barrier (resealing). In this reading no C_m time proportional to thickness is produced inside the barrier; the saturation of the traversal time is consistent with this.
  - **Quantum entanglement:** Two particles that appear far apart in C_m are connected through a single timeless relation in the c^+ layer (historically called the operation group / graph state). Entanglement is not a signal that travels faster than light in C_m; it is the timeless relation in the c^+ layer becoming visible through measurement in C_m (phase projection). c^+ is not a communication channel: this reading does not make signalling possible.
  - **The double-slit experiment (candidate reading):** As long as the particle is not measured, it displays the non-local, wave-like behaviour of the boundary between c^+ and C_m; at the moment a measurement is made, it is recorded and sealed on the C_m screen as a particle.
  - **Neutrinos — structures on the phase-regime boundary:** Neutrinos, whose existence is known but which are hard to measure, are read as the structures most weakly bound to the C_m phase, closest to the boundary between mass and light. Their change of flavour during travel (neutrino oscillation) is a robustly measured phenomenon and is a candidate for this boundary reading. The 2011 measurement claiming that neutrinos travel faster than light was withdrawn as a measurement error; Evertophy does not rely on that result.
  - **Energy from the vacuum and pair production:** Under the identity $c^+ \equiv$ vacuum, the vacuum calculations of quantum field theory are the computational language of c^+ in C_m. The production of particles from the vacuum by a strong electric field (the Schwinger mechanism), or pair production from high-energy photons, is read as a local phase transition triggered by external energy on the $c^+ \to C_m$ edge (candidate reading).

- **Experiments and observations read as compatible with the c^+ phase:**

In Evertophy, the c^+ phase is treated not as an abstract hypothesis but as a reading that is in contact with the traces of experiment and observation. None of the following examples is evidence for c^+; each is a measured phenomenon together with an Evertophy reading that is **compatible** with it. The measurements are accepted unconditionally; the readings are optional.

1. **The Stuttgart quantum teleportation experiment (November 2025, Nature Communications):** The polarization state was transferred, with about 72% success, between photons emitted by two independent quantum dots. The quantum teleportation protocol

requires a Bell measurement and **a classical communication channel**; the transfer of information is not completed without this classical channel. The Evertophy reading does not change this measured structure: c^+ is read as **the source of the correlation** that makes the transfer possible; it is not a signal-carrying channel. Photons are structures on the $v = c$ boundary, that is, on the shared boundary of C_m and c^+.

2. **Hartman-effect tunnelling measurements:** The saturation of the tunnelling time at a value independent of barrier thickness is a reading compatible with the timeless c^+ shortcut.
3. **The Casimir effect:** The measured force between two conducting plates in the vacuum is interpreted, under the identity $c^+ \equiv$ vacuum, as the reading of c^+ on C_m; the standard quantum-field-theory calculation of the force remains fully valid as the computational language of C_m.
4. **Lene Hau and the BEC experiments:** The extreme slowing and stopping of light inside a Bose–Einstein condensate is read as light from the $v = c$ boundary being slowed inside the environment in the matter phase closest to the c_0 environment; the merging of atoms into a single quantum wave is the laboratory analogue of the c_0 intuition of a collective single structure.
5. **The delayed-choice quantum eraser:** Standard quantum mechanics explains this experiment without any backward-in-time effect. The results are **compatible** with the reading that c^+ is an archive that does not require temporal ordering; this reading involves no retrocausation or signalling, and it is not a "certification" of the experiment.
6. **The ANITA anomaly:** The ultra-high-energy events recorded by the balloon experiment over Antarctica, which appear to come upward through the Earth, are still debated. Evertophy is a candidate for reading them as a cosmic-scale tunnelling leak (candidate reading).

Properties of the c^+ phase (a reading compared with the matter phase)

Property / Magnitude	C_m (Matter Phase)	c^+ (Timeless Upper Phase / Archive)
Kinematic membership	$0 < v < c$ (matter); $v = c$ liminal boundary	Beyond-c regime; C_m matter support is dissolved
Physical time	Present and emergent ($dt_{C_m} > 0$)	**Dissolved** ($\perp_+$; pedagogical shorthand $dt_{c^+} = 0$)
Metric tensor ($g_{\mu\nu}$)	Defined (3D Euclidean base space; effective 3+1 reading)	**Undefined / metric-free** ($\perp_+$)
Ontological identity	The phase in which measurement and indirect effects are read	$c^+ \equiv$ DM $\equiv$ DE $\equiv$ Vacuum
Galaxy-cluster reading	Stars, gas and visible mass	**Clustered c^+ — the dark-matter reading**
Cosmic-void reading	Thinning of matter	**Expansion-sustaining c^+ — the dark-energy reading**
Laboratory reading	Measurement apparatus	**Vacuum**
Inside the atom	Particles (nucleus, electrons)	**The space between particles**
Quantum manifestation	Measured particle / event	**Source of the entanglement correlation** (candidate reading)

- c **(Speed of Light):**
  - **Consistency constraint (phase threshold):** In standard physics, the speed of light is regarded as an unsurpassable universal speed constant. In Evertophy, the speed of light is **the record-resolution limit and phase threshold of the Cₘ phase**. In Cₘ, the speed of light is a definitional point interval, $c_{C_m} = [c, c]$.
  - **Change of regime (phase gate):** A massive body inside Cₘ cannot reach the speed of light by accelerating. At this boundary, "matter moving faster than light" does not come into being; what is at stake is not an acceleration but **a phase transition into the c⁺ regime**: what is crossed is not a speed value but the membership band of Cₘ. After the transition, the massive form of matter dissolves and the speed language of Cₘ is undefined:

$$\boxed{\mathrm{supp}_{C_m}(\text{matter}) \to \varnothing}$$

  - **Liminal state (the photon):** Light itself (the photon) lies on the $v = c$ boundary. It is neither a member of the massive matter of Cₘ nor inside c⁺; it lies on **the shared boundary** of the two regimes: the boundary of the Cₘ band is at the same time the boundary of the c⁺ regime. Gravitational waves also propagate on the same boundary (author's ruling); it is known from measurement that gravitational waves propagate at the same speed as light.

Consequences of the three-phase structure

In short: on one side of **Cₘ**, the differentiated matter phase we live in and measure, stands the pre-temporal potential phase **c₀**; on the other side stands the atemporal upper phase **c⁺**. These "side" words are conceptual, not spatial: the phases are connected not by a chain but by a complete triangle. Together these three phases form the Dynamic Universe, U_x. Outside this universe there are two limiting conditions: the absolute source U_0 and absolute dissolution U_+.

The most important consequence of this structure is this: fundamental concepts such as time, three-dimensional Euclidean space and the speed-of-light limit are valid **only in Cₘ**. In c₀ these structures are not yet established; in c⁺ they are dissolved. In other words, "time" or "space" are not things that exist in the same sense everywhere in the universe; they are structures specific to one phase.

This perspective opens a place for pieces that seem disconnected. The direction of time can be associated with the unidirectionality of the record written into c⁺. Measurement is positioned as an event belonging to Cₘ. Dark matter and dark energy are read as two appearances of the same c⁺ phase: c⁺ clustered with matter appears as dark matter, expansion-sustaining c⁺ as dark energy; and in the laboratory c⁺ appears to us as the vacuum. Entropy is the dissolution of Cₘ structure into c⁺; energy is not annihilated, it is sealed in c⁺. The most fundamental principle of this structure is the **Force of Attraction**: the four known forces — gravitation included — are its different projections according to scale, amount of mass and phase, and the three phases stand together beneath it in a balance. Which regime the phases resolve into is determined by the dynamic meta-resolver $X(x)$: the structure that resolves which phase regime is valid in a given situation and which states are admissible.

To be honest, none of these readings has yet been proven. Evertophy's canonical numerical-prediction counter still stands at **0/10**. This document sets out the ontological skeleton of the framework: what is what, what is related to what, and what is forbidden. It does not offer numerical proof. In terms of its scientific standing, Evertophy is a TOE research programme containing a three-phase, two-level ontology, selected formal results and conditional effective models; a definite physical selection principle and a distinctive, preregistered prediction are still open.

Canonical numerical-prediction counter: **0/10**

How this search was tested: the cross-AI marathon

However coherent a framework may appear, it may contain errors that escape the eye of its builder. For this reason, between **23 and 26 September 2026**, we put Evertophy through as severe an audit as possible.

Seven AI systems — Claude, ChatGPT Math&Physics, ChatGPT Thought Experiments, WolframGPT, Kimi, Qwen and Grok — tested Evertophy's equations, types and ontological claims over 20 rounds, auditing one another's outputs. The results were then compiled over four rounds and passed once more through cross-audit. Throughout the marathon, Evertophy's own rules were deliberately suspended; every AI was free to criticize and to propose derivations. Only two rules were recalled in every round: the Range Formalism, and the principle that the fundamental structures are valid only in C_m.

The aim was not to produce new predictions. The aim was to test the **internal consistency** of the framework with the highest confidence, to weed out faulty claims, to seal the correct ones formally, and to mark honestly what remains open. The results can be gathered under three headings.

What was verified. The type and algebraic skeleton of the framework was formally encoded with the theorem prover Lean: 269 theorem and lemma declarations — 46 in the isolated production core and 223 in the archive — none with an unfinished proof. Two different kinds of "absence" — the not-yet-establishedness in c_0 and the dissolvedness in c^+ — were separated from each other; in the production core, constructing a value in the wrong phase was blocked at the type level for the value families specific to C_m. The complete-triangle gate structure defined by the author was formally encoded, and it was proven within this encoded system that quantities specific to C_m — time, space, metric, internal speed, the speed-of-light limit and rest mass — **cannot be transported through any gate**. Lean did not derive the triangle from nature; it checked the consequences of the structure given by the author. Moreover, this lock does not prevent c^+-sourced effects from being read in C_m. It was also proven that the archive algebra reaches a single record however the same sequence of events is grouped; the order of the events, by contrast, is always preserved.

What was weeded out. More than thirty claims were refuted by counterexamples or withdrawn with their scope narrowed: an old quantum threshold that contained a dimensional error, an asymmetry criterion that turned out to distinguish nothing, a fit threshold that could have rejected a correct prediction, and others like them. Some of these came from the framework's

own older texts, some from the proposals of the AI systems taking part in the marathon. The retired claims were not deleted; they stay on the record together with the reasons why they were refuted.

What remains open. Perhaps the most important result was to locate one gap definitively. It was shown — formally at the finite level, and by analytic counterexamples at the continuous level — that the bridge from X to measurable physical quantities **cannot be uniquely selected** by type rules and well-definedness conditions. In other words, the framework's point of contact with observation requires a physical selection principle and observation. This debt was not hidden; it was recorded as a frozen open debt.

The most important thing the marathon taught me was this: the truth of a claim is determined not by how many agree with it, but by evidence of the appropriate kind. Seven AI systems reaching the same conclusion is not a proof. And when there is no evidence, leaving a question open is always better than forcing it closed.

What this document offers

This document is the text prepared towards the first publishable version of the Evertophy Core Ontology. The results of the marathon, and my own later direct clarifications, have been worked into the relevant sections; each concept is given a single, current account. The version history and the audit trail are kept outside this document, in the V24 rolling master. Parts that are not yet closed or that have alternatives have not been hidden; they are marked explicitly. The open debts and pending decisions are in APPENDIX K.

There is one more thing I must say clearly: the consensus of the cross-AI marathon is not, by itself, canon. In Evertophy, the final word on what is canon belongs to the author.

— Uğur Yılmaz

This section was written by the author in his own narrative voice; Claude made only corrections of spelling, notation and alignment with the current canon. The English version was translated from the Turkish by Claude.

How to read this document

What this document does: It explains **what Evertophy essentially is**: which entities it speaks of, how they are related to one another, and what each concept expresses. The reader can follow it without consulting any other document.

What this document does not do: It does not offer a derivation, does not produce numerical predictions and does not prove theorems. Where formal results and models are mentioned, their scope and status are written next to them.

Style of presentation: Internal development jargon (version labels, status stamps) is avoided as far as possible. The confidence with which a statement is made is indicated directly in the sentence: **canon**, **author's ruling**, **model**, **bridge**, **candidate reading**, **compatible reading**, **open** or **retired**. In every part that contains an equation, the equation comes first, immediately followed by copyable LaTeX code and then by an explanation of the symbols. The function of the equation is then summarized in a short five-question table:

Question	What the answer explains
What does it do?	The function of the equation or structure
Why does it do it?	Which gap, error or need it addresses
How does it do it?	With which method, which assumption and which tool
What result is expected?	What it is intended to provide once established
What result is obtained?	Its present state and status

Note on source discipline

This monograph is not a summary of a single archive; it is a distilled form of many layers. The direct working base is the previous current core text (minor12). Archive surveys, self-correction reports and decision records were parsed item by item without bulk transfer; only missing scope compatible with the current core was added. A fact found in a source and a tool's interpretation of it are kept separate.

Cross-AI proposals do not carry equal authority. A proposal that contradicts the current direct ontology is excluded from the core. A useful but underived proposal is set aside as a **model**, a **bridge** or a **formal candidate**; old terminology as **historical**; and an undecided meaning as an **open debt**. The coverage of the archive survey is high; but since there is no file manifest and no hash-based completeness check, no claim of a "cryptographically complete survey" is made.

This document is therefore not a compilation that pours the whole archive onto a single plane, but **an integrated core to which version precedence has been applied**. In case of conflict, the valid order of precedence is:

> Direct author clarification > current core > current formal canon > compatible formal candidate > historical archive > tool interpretation

Question	Answer
What does it do?	It determines which of several conflicting sources is valid
Why does it do it?	The framework developed over months with many tools and versions; a statement that appears "settled" in an old record may conflict with a newer author's ruling
How does it do it?	It ranks sources by authority: the author's direct clarification stands at the top, a tool's interpretation at the bottom
What result is expected?	The historical richness is preserved without being mixed into the current core
What result is obtained?	If an old statement conflicts with a newer direct clarification, it does not enter the current core; it remains in the archive as a historical record

The version history, correction records and audit trail are kept in the current V24 rolling master, published alongside this text. This text was compiled under the author's direction, with cross-AI auditing: compiler Claude; auditors ChatGPT (Math&Physics, Thought Experiments, Codex), WolframGPT, Kimi, Qwen and Grok.

SECTION 0

ENTRY GATE

0.1 Evertophy in one paragraph

Evertophy is a framework which proposes that reality is not a medium of a single kind but a structure in which **three distinct phases** coexist. Like the ice, liquid and vapour states of water; but this time the phases are not of matter but of **reality itself**. These three phases are called **c₀** (the pre-temporal potential / core phase), **Cₘ** (the phase of differentiated matter, measurement and time; the phase we live in) and **c⁺** (the atemporal upper / archive / coordination phase). The central proposal of the framework is this: physical laws are not rules that exist arbitrarily *within* these phases, but forms that arise from the structure of relations and transitions *between* the phases. A single higher object organizes this structure: the **dynamic meta-resolver** $X(x)$. Before all of these stands an unnumbered premise: the **Force of Attraction** (Turkish: *Çekim Kuvveti*), the fundamental ontological postulate of Evertophy.

0.2 Evertophy on one page

Modern physics is divided into four great domains: general relativity, quantum mechanics, the Standard Model and cosmology. Each of the four is extraordinarily successful on its own, but they do not fully understand one another's language. Evertophy's starting question is this: *if these four domains describe the same reality, what is their common grammar?*

The proposed answer is not a unification equation but a **resolver**. This object, called $X(x)$, resolves phase, context and admissibility. The selection of actual physical coefficients, of the constitutive map or of the observable value belongs to a separate layer: to the physical selector, the bridge and the readout law.

Six basic consequences follow from this picture:

First, time is not fundamental. In Evertophy, physical time exists only in C_m and arises from the measurable change there. In c_0 time is not yet established; in c^+ the time established in C_m is dissolved.

Second, physical quantities are interval-valued. A quantity is written in the form $[P^-, P^+]$. This does **not** mean "every constant varies": a range of zero width ($[P, P]$) is a fully valid, static and deterministic case.

Third, the Force of Attraction is the fundamental ontological postulate. The four known forces — gravitation included — are its projections according to scale, amount of mass and phase; the Force of Attraction itself belongs to the structure.

Fourth, the metric is defined only in C_m. $g_{\mu\nu}$ is not an admissible object in c_0 and c^+; but in the two phases **for different reasons**: in c_0 it is not yet established, in c^+ it is dissolved.

Fifth, irreversibility lives not in the phase gate but in the record. The transitions themselves are bidirectional; what cannot be undone is the **stamp** imprinted during the transition.

Sixth, the framework has two levels. The Dynamic Universe (U_x) formed by the three phases is a whole, and this whole has two limiting conditions: the global saturation pole U_0 and the global dissolution pole U_+. The phases are inside, the poles outside; the two do not belong to the same ontological class.

The heart of the framework

> In Evertophy's fundamental working mechanism, the tendencies of matter and texture are read together with the language of inter-phase tension and transformation.

This entry record, approved by the author, requires that the Force of Attraction be read neither as merely a Newtonian force nor as merely a passive C_m geometry. The **clustering tendency** on the matter side and the **expansion tendency** on the texture / c^+ side produce a continuous relation and transformation among c_0, C_m and c^+; this is the main narrative axis of the framework.

This narrative **does not replace Postulate 0**: the ontological priority of the Force of Attraction is not regarded as derived from entropy. The expressions "matter entropy" and "texture entropy" are used here as a phase-specific language of tendency; they do not mean that standard thermodynamic entropy is carried over unchanged into c_0 and c^+. For this reason the correct term is **the fundamental working mechanism of the universe**; the language of an "engine" is not used.

Notation note: In this document, expressions such as "inside / outside" or "on one side / on the other side" are notations at the ontological and type level; they are not a spatial ordering. At the global level there is no metric and no space; and the phase topology is not a chain but a complete triangle.

0.3 What Evertophy does *not* claim

Understanding a framework also requires knowing what it does not claim:

- **It does not claim to be a completed Theory of Everything.** It is a research programme that aims at a Theory of Everything (0.6): a conceptual order and a mathematical skeleton.
- **It does not claim to derive the constants of the Standard Model.** There are assignments of mechanisms; none of them produces a number.
- **It does not claim to solve the cosmological constant problem.**
- **It does not claim to solve the black-hole information paradox.**
- **It does not claim to explain entanglement;** it proposes a reading framework.
- **It does not forbid unification; it forbids the multiplication of after-the-fact explanations.** The same mechanism may explain more than one independent phenomenon; but the results must follow from the same, previously defined chain of derivation, without additional tuning, and with separate falsification conditions for each observable.
- **It carries no active claim of empirical evidence.**

0.4 Explicit declaration of the empirical status

Canonical numerical-prediction counter: **0/10**

The multi-domain correlation line, once regarded as the framework's strongest empirical claim, **has been permanently closed by internal audit** (Section 21). The empirical assets that remain today are **constraints placed on** Evertophy; they are not predictions that follow from Evertophy.

The 0/10 → 1/10 gate

For an item to move the counter, it must satisfy six conditions together:

#	Condition
i	It must be **derived** from the ontology
ii	Its parameters and bridge assumptions must be **fixed in advance**
iii	It must be **distinguishable** from what the standard approach gives
iv	The prediction interval must be **preregistered before the target data are seen**
v	The **data lineage must be sealed**, including the data version, the target selection and the held-out test set
vi	It must have been tested on **blind data**

No item counts as 1/10 unless all six conditions are satisfied together.

Question	Answer
What does it do?	It defines the minimum conditions required for a claim to count as a "prediction"
Why does it do it?	Retrospective fitting, tuning while looking at the data and definitional identities can look like predictions; the correlation line closed in the past is an example
How does it do it?	It combines the six conditions into a single gate; if even one is missing, the item does not count
What result is expected?	That the counter increases only with predictions that are genuinely derived, distinguishable and blind-tested
What result is obtained?	Today no item satisfies all six conditions together; the counter stands at **0/10**

0.4a The distinction between ontology and model

In this document, **ontology** denotes the entities, types and structural relations that the framework takes as fundamental; **model** denotes the mathematical realization of this ontology in a particular physical regime.

MODEL $\neq$ ONTOLOGY

The observational success of a model does not by itself show that all the mathematical objects it uses are fundamental ontological entities. For example, the metric and the language of general relativity within C_m may be indispensable for physical readout; but this does not permit the metric to be carried into c_0 or c^+ as a fundamental ontological object.

Evertophy unconditionally accepts established experimental and observational results as an **external physical standard of comparison**; it does not equate the acceptance of its own postulates, ontological interpretations and bridge mechanisms with these external results. The task of the framework is not to ignore existing physics, but to propose an explicitly marked, additional ontological and interpretive structure.

The scope of unconditional acceptance. What is accepted unconditionally is the **measurement result** verified by the measurement community with its own methods — together with its uncertainty, its record of systematic errors and its calibration status. Results corrected or withdrawn by the measurement community itself (for example, the 2011 OPERA superluminal-neutrino measurement) are accepted together with that correction. What is unconditional is methodological honesty: no ontological reading may alter a reliable observational result in its own favour; if a measurement contradicts an Evertophy reading, it is the reading that changes.

0.5 Order of reading

Part	Sections	Content
I. Foundations	1–3	Postulates, U_0, the global universe level (U_x, U_+), the three phases
II. The resolver	4–6	$X(x)$, the phase-parameter matrix, the Range Formalism
III. Emergent structures	7–12	Time, attraction, metric, matter, the c^+ identity, thresholds
IV. Transition and record	13–16	Transitions, the stamp algebra, measurement, information
V. Bridges	17–19	Channel asymmetry, quantum, topology
VI. Programme	20–25	The Standard Model and general relativity, empirical status, nuclear bridge, method, limits, mechanism candidates
VII. Phenomenon readings	26–27	Inventory of open phenomena and inventory of candidate equations
Appendices	A–K	Glossaries, equations, analogies, epistemic order, formal architecture, machine-readable mirror, canonical figure, open debts

0.6 Scope and present status of the research programme

Evertophy is an ontology and physics research programme that aims at a Theory of Everything (TOE). This text presents the three-phase, two-level basic definitions, selected formal results, conditional model alternatives and open physical bridges, together with their scope. The TOE aim indicates the research direction of the programme; it does not confer the status of a completed or experimentally verified TOE. The canonical numerical-prediction counter stands at **0/10**.

0.7 Note on parallel literature

The lines of literature that the framework has intersected during its development are on record. The following families are related-work comparisons based on bibliographic records published alongside this text. The common theme is parallelism; it is not derivation or verification.

Line	Relation
Verlinde (entropic gravity) [Ver11]	Reads gravitation not as a fundamental force but as an entropic and emergent phenomenon; this is a different thesis from Evertophy's fundamental postulate of the Force of Attraction. The parallel lies only in the intuition that attraction is not reduced to particle exchange
Jacobson (from thermodynamics to general relativity) [Jac95]	The thermodynamic origin of general relativity — methodological parallel
Holographic principle [tH93, Sus95]	The boundary–bulk relation — structural parallel
AdS/CFT [Mal98]	Correspondence between a boundary theory and a bulk gravitational theory — structural parallel
Bekenstein–Hawking entropy [Bek73, Haw75]	The relation $S_{BH} \sim A$; held in the framework as a theoretical result not yet tested by observation (23.3)
Analogue gravity (Barceló–Liberati–Visser) [BLV05]	Acoustic metric and transformation optics — the most realistic relative as a publication gateway
Volovik (the superfluid He-3 universe) [Vol03]	A phase-based reading of reality — among the candidates for the closest intellectual relative
The black-hole cosmology family [Pat72, Dym92, Pop10, FMM89, FMM90]	Independent similar intuitions. The distinctive parts of Evertophy (the critical threshold at the boundary of U_0, the joint birth of the three phases in the same constitution, the resolver X) showed no direct match in the comparison set examined; no comprehensive survey of priority and originality has been carried out

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- **[Ver11]** E. Verlinde, "On the origin of gravity and the laws of Newton", *JHEP* 2011(04), 029 (2011); doi:10.1007/JHEP04(2011)029; arXiv:1001.0785.
- **[Vol03]** G. E. Volovik, *The Universe in a Helium Droplet*, Oxford University Press (2003).

> Parallelism is not verification. The record of intersections is kept at the level of "structural similarity".

The scope rule for the black-hole cosmology family is this: these works are a related-work context, not evidence; the debt of derivation and blind prediction for the original ontology continues separately. This literature family is itself divided into rival models (torsion bounce, de Sitter core, shock wave, false vacuum); it cannot be presented as collective support.

SECTION 1

BASIC INTUITION AND POSTULATES

1.1 Where the framework came from

The conceptual beginning of Evertophy goes back to 20 July 2025. The first question came not from physics but from **architecture and systems thinking**: *why does the same structure look different at different scales of a system?*

Three first intuitions were born from this question and were put on record:

- The centre of a black hole may not be a singularity but **a finite structure integrated into a single form**.
- That the same essence looks different at different scales requires a **hierarchy of regimes**.
- Dark matter and dark energy may be **two appearances of the same thing**.

This origin determines the character of the framework: Evertophy was born not from an equation but from a **search for structural coherence**.

1.2 Postulate 0 — the Force of Attraction

> The Force of Attraction is the most fundamental ontological postulate of Evertophy.

The four known forces — gravitation, the strong force, the weak force and electromagnetism — are **different projections of the Force of Attraction according to scale, amount of mass and phase**:

$$\{\text{Gravitation},\ \text{Strong},\ \text{Weak},\ \text{Electromagnetism}\} \;=\; \Pi_{\text{scale, mass, phase}}\left[\,\text{Force of Attraction}\,\right]$$

Symbol	Meaning
$\Pi_{\text{scale, mass, phase}}$	Projection operation: the form the Force of Attraction takes at a given scale, amount of mass and phase; **its formal definition is open (APPENDIX K.1)**. The box is a statement of a postulate, not a mathematical unification equation: the four interactions are mathematical objects of different kinds, and the output type of Π has not yet been defined
Force of Attraction	Fundamental ontological postulate; phase-independent constraint coherence

The Force of Attraction is not merely a phenomenon of "pulling". At the ontological level, the Force of Attraction is the **phase-independent constraint coherence** that is necessary for the structures permitted in all of the phases c_0, C_m and c^+: the fundamental bond that keeps the three phases consistent with one another. Constraint coherence does not require a metric; for this reason it is also valid in c_0 and c^+, where there is no metric. In C_m this principle becomes visible through its projections: gravitation is its **metric projection**, and general relativity is the effective language of that projection.

Question	Answer
What does it do?	It positions the four forces as different appearances of a single fundamental principle
Why does it do it?	The common origin of the four forces is one of the open questions of modern physics; Evertophy ties this origin to an ontological postulate
How does it do it?	It defines the Force of Attraction as phase-independent constraint coherence, and reads each force as a projection (Π) dependent on scale, mass and phase
What result is expected?	Once the formal definition of the projection operation is established, the measured properties of the four forces can be read from a single source
What result is obtained?	The postulate is established at the ontological level; the formal definition of Π and the detailed projection account of the forces are open

Concept lock

$$\boxed{\text{Force of Attraction (Çekim Kuvveti)} \neq \text{Gravitation (Kütleçekim)}}$$

"Force of Attraction" (Turkish: *Çekim Kuvveti*) is the canonical name; its ontological nature is not a classical force field but phase-independent constraint coherence. In no context is the Force of Attraction to be written as "gravitation", "gravity" or "gravitational force" (Turkish: *kütleçekim*, *kütle çekim kuvveti*). The statement "mass attraction is the fundamental axiom" in the early texts has been replaced by this definition: the fundamental postulate is the Force of Attraction; gravitation is one of its projections.

Five distinct objects — not to be confused

$$\boxed{\text{Force of Attraction}_{\text{ontoloji}} \neq \text{Gravitation}_{C_m} \neq X \neq g_{\mu\nu} \neq G_{\text{eff}}}$$

Object	What it is
Force of Attraction (ontology)	Fundamental postulate; phase-independent constraint coherence
Gravitation (C_m)	The metric projection of the Force of Attraction in C_m; the subject of general relativity
$X(x)$	Dynamic meta-resolver; resolves the phase regime and the admissible states
$g_{\mu\nu}$	A geometric object belonging to C_m (the metric)
G_{eff}	The effective gravitational coupling measured in C_m; model level

These five are not the same thing and cannot be used in place of one another. In particular, X **is not the Force of Attraction**; X is the higher object that determines in which regime a physical structure is resolved.

The coexistence of the three phases

That c_0, C_m and c^+ form a single structure in U_x is not a coincidence: the three phases stand together **in a balance** under the constraint coherence of the Force of Attraction. The bidirectionality of the phase gates is the expression of this balance: C_m structure dissolves into c^+, and c^+-sourced effects are read in C_m. The formal equation of the balance is open. The

balance explains why the phases **stand together**; in order to explain **why there are exactly three** phases, it would have to show that it does not permit any other number of phases. The number of phases is an open question (Section 24).

Present status of the projections

Projection	Status
Gravitation	The metric projection in C_m (Section 8)
Electromagnetism	Draft reading: charge is a persistent signature related to the phase boundary c. The projection form of repulsion and of charge — **To Be Addressed Later**
Strong force	Historical draft reading (under the old name "crystal phase") — **To Be Addressed Later**
Weak force	Draft reading: transformation from an unstable to a stable structure — **To Be Addressed Later**

Measurements show that the four forces do not only attract: in electromagnetism, like charges repel each other; the weak force is related to particles changing their kind; in the electromagnetic and strong forces, what is decisive is not mass but charge. Since the Force of Attraction is ontologically a principle of coherence, it is conceptually possible for its projections in C_m to appear in the form of attraction, repulsion or transformation; the detailed account will be taken up later. It has been measured that the strengths of the forces change with energy scale, and that the electromagnetic and weak forces unify at high energy. This picture is consistent with the idea of "projection according to scale"; but it is not evidence.

1.3 Four postulates

P1 — Plurality of phases

Reality is not a single homogeneous medium. There are at least three distinguishable phase regimes, and relation and transition between them are possible.

Explanation. This does not reject the assumption that "the same physics is valid everywhere"; it states that the valid laws are **the appearances of the same laws in different regimes**.

P2 — Law arises from relation

Physical laws are not internal properties of the phases; they are the expression of the structure of relation and transition between phases.

Example. That the speed of light is an upper limit is not an arbitrary rule in Evertophy: it is **the consistency constraint** of the C_m phase; it sets the limit of information processing, of record and of resolution.

P3 — A single resolver

There is a single higher object that determines the phase regime: $X(x)$. It would be possible to assume three separate regulators for three phases; the framework **rejects** this.

P4 — The Range Formalism

$$\boxed{\text{Physical numerical syntax is INTERVAL-VALUED: } P \in [P^-,\ P^+]}$$

And the critical subtlety — this is not a prohibition:

$$\boxed{[P,\ P] \text{ is a FULLY VALID static, deterministic physical range.}}$$

$$\boxed{\text{Being interval-valued } \not\Rightarrow \text{ being time-variable.}}$$

Symbol	Meaning
P	Any physical quantity
P^-, P^+	The lower and upper bounds of the quantity
$[P, P]$	A range of zero width: an exact, constant value
$\not\Rightarrow$	"Does not imply"

Question	Answer
What does it do?	It specifies how physical quantities are to be written: as ranges
Why does it do it?	Measurements and model parameters actually come as bands; a single point value hides uncertainty
How does it do it?	It carries every quantity in the form $[P^-, P^+]$; an exact constant is written as the zero-width $[P, P]$
What result is expected?	That prediction bands and observation bands can be compared honestly (Section 6)
What result is obtained?	The rule is established; no special threshold mechanism or structural justification is sought for a zero-width range. P4 is a rule of syntax; it does not say "everything varies"

1.4 Two core ideas

Idea 1 — The same language, different licences

The four great domains describe the same reality, but they use different mathematical licences. Their common grammar is the language of the phase structure.

Idea 2 — Measurement is specific to C_m

Measurement is not a separate fourth ontological phase; **the domain in which direct physical measurement can be made is C_m.** The "observer", too, is not a separate ontological class, but the role of systems inside C_m that produce physical records and readouts.

Consequently, everything said experimentally about c_0 and c^+ must be tested **through a reading in C_m.**

1.5 Classes of entities

Class	What it is	Example
Ontological entity	Structure belonging to reality itself	c_0, C_m, c^+, X, the Force of Attraction
Global node	A global ontology layer that is not a phase	U_0, U_x, U_+ — not phases
Formal object	Mathematical representation	$g_{\mu\nu}$, the stamp monoid, a range

Class	What it is	Example
Readout	What is actually measured in Cm	α, G, H_0, mass

Mistaking a quantity of the readout layer for an ontological entity is the most common error in the framework.

1.6 Hygiene of definitions — symbols that must not be confused

Symbol	What it is	Not to be confused with
U_0	Absolute source / pre-layer	u_0, $u(0)$ — these are historical process coordinates
$X(x)$	Dynamic meta-resolver	$X(u)$ — the historical logistic kernel
C_m	Phase name	c_m — a table component
x	General condition variable	Not a particular coordinate; a **wildcard**
c	Speed of light / Cm consistency constraint	The phase names c_0, c^+

These distinctions are not bureaucratic: two meanings of the same letter have led to real errors in formal work.

1.7 Additional notational safety

Two notational distinctions are especially preserved:

Notation	Meaning
C_m	**Phase name**: the matter / measurement / emergent-time phase
c_m	If used for a table, coefficient or subcomponent, it is only a local symbol; it is not a phase name
$X(x)$	The current dynamic meta-resolver
$X(u)$	Historical / operational scalar kernel; not identical with the current $X(x)$
X_A, X_z, X_t	If used, these are only **domain or readout projections** or historical names; they are not three separate fundamental X's

This document accepts **a single** X in the fundamental ontology. Domain labels may be used only as projection notation:

$$X_A \equiv \Pi_A[X], \qquad X_z \equiv \Pi_z[X], \qquad X_t \equiv \Pi_t[X]$$

Symbol	Meaning
Π_A, Π_z, Π_t	Projections of X onto the atomic/nuclear, redshift and time domains
X_A, X_z, X_t	Names of these projections; they are not separate ontological regulators

These notations do not create separate ontological regulators, and they do not bring the retired old quantile / correlation line back into the canon.

To avoid confusion over extreme values, the safe phase-regime notation is:

$$\boxed{X_{\text{state}} \in I_0, \qquad X_{\text{state}} \in I_m, \qquad X_{\text{state}} \in I_+}$$

Symbol	Meaning
X_{state}	The resolved-state face of X
I_0, I_m, I_+	Classes of admissible regimes / states for the corresponding phase; not necessarily numerical intervals

Question	Answer
What does it do?	It writes safely the projection of the single X onto domains and its membership in phase regimes
Why does it do it?	The scalar extreme-value language "$X \to 0$ / $X \to 1$" and the impression of three separate X's in the old texts contradicted the non-scalar nature of X
How does it do it?	It defines domain labels as projections (Π) and phase regimes as state classes (I)
What result is expected?	That every scalar operation performed on X is carried out through an explicitly defined reading
What result is obtained?	The notation is established; the old scalar extreme-value language is not carried into the current $X(x)$ ontology

SECTION 2

U_0: THE ABSOLUTE SOURCE / PRE-LAYER

2.1 Current definition

$$U_0 \rightsquigarrow \{c_0,\ C_m,\ c^+\}_{\text{together, in the same constitution}}$$

Symbol	Meaning
U_0	Absolute Core: the pre-layer, the absolute generative source
$\rightsquigarrow$	"Permits / gives birth to": not the first link of a causal chain, but the source of the condition of existence
$\{c_0, C_m, c^+\}$	The three phases
"together, in the same constitution"	The structural joint birth (co-genesis) of the three phases; it does not mean a common external clock

U_0 is the **pre-layer**, that is, the absolute generative source, which at the Big Bang forms the three phases **together, in the same constitution**. By the author's ruling: in U_0, all the structures that make up the Dynamic Universe — c_0, C_m and c^+ — exist **in a single structural form**, contiguous to a degree that converges to the metric-gapless state at the Planck scale. This is not an assignment of a numerical mass or size (2.10); it describes the unity of the three phases before their birth.

Joint birth (co-genesis): c_0, C_m and c^+ emerge together in the $U_0 \rightarrow U_x$ constitution. The author's expression "simultaneous" describes this structural joint birth. There is no common physical clock outside the phases, because physical time is defined only in C_m. U_0 does not produce one first and then the other; all three are born at once. This is not a sequential production but **a structural birth**.

Question	Answer
What does it do?	It defines the source of the three phases and the manner of their birth
Why does it do it?	Readings in which the phases are derived from one another (for example, c^+ being born from C_m) break the foundation of the ontology
How does it do it?	It writes the three phases as structures born together, in the same constitution, from a single source; it reads the arrow not as causal but as a condition of existence
What result is expected?	That no phase is modelled as a derivative of another; that time is not mistaken for a clock outside the Big Bang
What result is obtained?	Joint birth is canon; the full characterization of U_0 is a reserved domain set aside for the author

2.2 What U_0 is not

$$U_0 \notin \text{Obj}(\mathcal{C}_{\text{faz}})$$

Symbol	Meaning
$\mathcal{C}_{\text{faz}}$	The phase category: the structure whose objects are c_0, C_m, c^+ and whose arrows are the phase gates
Obj(·)	The objects of a category
$\notin$	"Is not a member of"

U_0:

- **is not a phase**; it is not a fourth sector,
- **is not a gate endpoint**; there is no **ordinary phase gate** leading to or from it (the global relation of birth and limit, 2.8, is separate from this),
- **is not a subtype of c_0**,
- **is not a topological hole**,
- **is not a transition fibre**,
- **is not consciousness, a god, a mind** or a metaphysical entity,
- **is not an observable object**.

Why these limits? U_0 is the element that stands on the epistemically weakest ground in the framework. Turning it into a dynamic sector or a geometric structure would move the most fragile point of the theory to its centre.

2.3 Historical readings

During the development of the framework, different readings of U_0 were tried. They are **historical lineage**, not the current definition:

Historical reading	Why it is not current
A physical universe core carrying a numerical mass value	It reduces U_0 to a C_m quantity
The universe-scale counterpart or threshold of c_0	It reduces U_0 to a phase
An upper bound on addressing / capacity	It is a metaphor, not an ontological definition
A cosmogonic dissolution threshold	It is a threshold, not a source
$u(0) \equiv U_0$	u is a historical process coordinate; it is not U_0

These readings are preserved in the archive, but none of them enters the current core.

$$\boxed{u(0) \neq U_0}$$

2.4 U_0 and the Big Bang

The current core preserves two separate but compatible layers together:

1. **The rule of birth:** At the beginning of the Big Bang, U_0 forms the three phases together, in the same constitution.
2. **The double-limit principle:** The two limits that would form the basis of a cyclic operation are preserved in the Core; the full mechanism of these limits is set aside for V24.

Joint birth — the ontological origin

$$U_0 \rightsquigarrow \{c_0,\ C_m,\ c^+\}_{\text{together, in the same constitution}}$$

This statement is not a sequential phase transition. Since U_0 is not an object of the phase category (2.2), an ordinary phase-transition arrow of the form $c_0 \to U_0$ or $c^+ \to U_0$ **is not set up.**

Author's ruling — the phases are not derived. c_0 and c^+ are formed at the Big Bang together with C_m; they are not derived from C_m. What is modelled is the $C_m \to c^+$ transition and the sealing of time; for this purpose the vacuum, the BEC and subatomic structures are considered.

What the Big Bang is not

It is not	Why
A classical explosion	It is not a picture of a centre and outward spreading
Creation from nothing	U_0 exists
Motion in a pre-existing space	Space and time are born with C_m
Time beginning like a primordial substance	Time is not a substance; it is produced in C_m

TIME IS NOT AN EXTERNAL CLOCK ABOVE the Big Bang.

The question "what was there before the Big Bang?" is categorically problematic from the point of view of C_m physical time, because the word "before" already presupposes a physical time.

The double-limit principle — the Core / V24 cycle seed

Two limits are preserved in the framework as a **Core seed:**

- **the c_0 saturation / collapse limit,**
- **the dilution / closed-cycle limit.**

These two limits do not by themselves carry all the mechanical arrows of the old narratives into the canon. The safe current statement is:

$$\text{limit condition} \Longrightarrow \text{a cycle seed that could be tied to a new } U_0\text{ -mediated birth condition}$$

The $\Longrightarrow$ here is not a **phase gate**; it denotes the cycle condition at the meta level. U_0 is not inserted into the phase graph and is not defined as a "physical object that is formed again". Nor does the dilution branch assume a time flowing inside c^+; this limit is understood only as an asymptotic cycle condition from the point of view of a reading made from C_m.

$$\text{joint birth} \neq \text{double-limit cycle mechanism}$$

Question	Answer
What does it do?	It preserves the two extreme limits of the universe (collapse and dilution) as the seed of a cyclic operation
Why does it do it?	The two extreme tendencies in Evertophy's three-phase architecture carry a natural possibility of a cycle at the global level

Question	Answer
How does it do it?	It writes the limits not as phase gates but as a cycle condition at the meta level; it separates birth from mechanism
What result is expected?	That the cycle equations can later be established in the V24 layer
What result is obtained?	The seed is preserved in the Core; the cycle equations, the cycle index and the full link between U_0 and the limit condition are not defined in this version

2.5 Two ontological levels — the phase level and the global universe level

Most of what has been described so far belonged to **a single level**: the three phases and the pre-layer that gives birth to them. But the full picture of the framework has two levels.

> Evertophy consists of TWO ONTOLOGICAL LEVELS: the PHASE LEVEL and the GLOBAL UNIVERSE LEVEL.

Level	Objects	Type of relation
Phase level	c_0, C_m, c^+	Complete bidirectional triangle; gates and stamps
Global universe level	U_0, U_x, U_+	Global cycle; relations of birth and limit

$$U_0,\ U_x,\ U_+ \notin \{c_0,\ C_m,\ c^+\}$$

Why is this distinction necessary? When the double-limit idea (2.4) is forced into a single level, it produces constant tension: an arrow such as "c_0 saturation → U_0" pulls an entity that lies **outside** the phase graph **into** the phase graph. Once the two levels are separated, the tension disappears by itself: the phases stay inside, the global poles stand outside.

The ice–water–vapour analogy

Ice, water and vapour can exist together in a container. These are **regimes**: the phase level. The container as a whole is a separate object: the global level. If the whole system goes to an extreme condition, this is not a change of a single regime, but **the system itself** reaching an extreme state.

> U_0 and U_+ are not RIVALS of the phases — they are the two LIMITING CONDITIONS of the global cycle.

Local phase limit ≠ global universe limit

A region approaching the c_0 regime (the formation of a black hole) is a **local** event, and it happens in the universe every day. Global saturation, by contrast, is a condition belonging to **the universe as a whole**. Even if the two are written in the same language, they are not the same thing.

Question	Answer
What does it do?	It separates the ontology into two levels: the phases and the global poles

Question	Answer
Why does it do it?	Pulling the global poles into the phase graph produced false identities such as "c_0 saturation = U_0"
How does it do it?	It defines the global nodes outside the set of phases; it calls the relation between phases a gate and the global relation a cycle
What result is expected?	That local events (black-hole formation) are not confused with global conditions (the extreme states of the universe)
What result is obtained?	The two levels are canon and are also formally typed (equation set 5.3)

2.6 U_+ — Absolute Dissolution / Absolute Rupture

> U_+ = the limiting state in which the entire phase-structural resolution of the universe thins out until it crosses the global resolution limit

If U_0 is the global **saturation** pole, U_+ is the global **dissolution** pole.

Author's ruling — equivalence of names. "Absolute Dissolution" and "Absolute Rupture" describe the same limiting state: the first emphasizes the state itself, the second the whole U_x structure reaching that state. The event that takes place when the whole of U_x crosses the critical threshold at the boundary of U_+ is called the **Big Rupture** (2.8).

What U_+ is not

It is not	Why
A phase	It lies outside the phase graph
A fifth node	It is not added to the phase triangle
c^+	c^+ is a phase and lies inside U_x; U_+ is a pole outside
X	X resolves the phase regime; U_+ is a global limit
The future	There is no C_m time at the global level either
"The last stop / death"	In every case a new U_x is formed; it cannot be read in the manner of an apocalyptic narrative
Merely "a great deal of c^+"	It is not a quantitative abundance of c^+ but a global resolution condition

The highest risk of confusion is between U_+ and c^+; both are on the side of dissolution. The distinction in one sentence is:

$$c^+ = \text{phase (inside)} \qquad U_+ = \text{global pole (outside)}$$

A pole is not a threshold

U_0 and U_+ are not **thresholds**; the threshold lies at the **boundary** where the extreme phase touches the global pole. The historical reading "U_0 = the threshold of c_0" (2.3) must not be brought back by this route.

The function sentence for U_+ — open

U_0 has a function sentence: *it gives birth to the three phases together, in the same constitution.* The counterpart for U_+ has not yet been written. The following generalized form is a candidate, **not canon:**

$$U_* \rightsquigarrow \{c_0,\ C_m,\ c^+\}_{\text{together, in the same constitution}}, \qquad * \in \{0,\ +\}$$

Symbol	Meaning
U_*	One of the two global poles: U_0 or U_+

Question	Answer
What does it do?	It defines the global dissolution pole and separates it from the c⁺ phase
Why does it do it?	Since both are on the side of "dissolution", this is the pair most often confused
How does it do it?	It defines U_+ as a limiting state of the whole and c⁺ as a phase inside the universe; it records that the two names describe the same state
What result is expected?	That a function sentence can be established for U_+ as for U_0
What result is obtained?	The definition and the equivalence of names are established; the birth function of U_+ is open, the generalized form is a candidate

2.7 U_x — the Dynamic Universe

> $U_x =$ the dynamic universal structure in which the three phases are realized together

U_x is not merely a drawing frame; it is the middle object of the global level. Time, space and measurement live inside this whole, in the Cm phase.

Notational hygiene — three similar symbols

Symbol	What it is
U_x	The Dynamic Universe — an object of the global level
$U(x)$	Historical or functional usage; it is matched with U_x **only if the context clearly points to** U_x
$X(x)$	**The dynamic meta-resolver** — an entirely different object (Section 4)

$$U_x \neq X(x) \qquad U_x \neq U_0 \qquad U_x \neq c_0, C_m, c^+$$

Writing $U(x) \equiv U_x$ is not automatic: the current canonical notation is U_x. The ontological type of U_x — "set membership" or "ontological inclusion" — **is an open question.**

Equation set — the global level

$$U_0,\ U_x,\ U_+ \notin \{c_0,\ C_m,\ c^+\} \qquad \text{GlobalRel} \neq \text{Gate}$$

Symbol	Meaning
U_0	Absolute Core — the critical threshold **at its boundary**: the **Big Bang**
U_x	Dynamic Universe — **not a pole**

Symbol	Meaning
U_+	Absolute Dissolution / Absolute Rupture — the critical threshold **at its boundary**: the **Big Rupture**
GlobalRel	The relation between global nodes
Gate	The gate between phases

Question	Answer
What does it do?	It formally separates the phase level from the global level
Why does it do it?	Mistaking global nodes for phases collapses the two-level architecture
How does it do it?	It defines the global nodes outside the set of phases; it writes the global relation as a type of relation different from a gate
What result is expected?	That no model or code uses the global nodes as if they were phases
What result is obtained?	The distinction phase ≠ global node and the ruling "U_x is not a pole" have been formally verified; the structural type of U_x is open

2.8 The global cycle and the two birth events

Joint birth. In the $U_0 \to U_x$ birth, c_0, C_m and c^+ are formed **together, in the same constitution**. Since there is no common clock running outside the phases, this is not "the same moment" of a clock but co-presence in the same constitution. The beyond-c character of c^+ is not a property acquired later; it is a constitutive property of the phase. From birth onwards, the three phases stand together under the constraint coherence of the Force of Attraction (1.2).

$$\boxed{U_0 \;\leftrightarrow\; U_x \;\leftrightarrow\; U_+}$$

When the extreme phase-regime limit is crossed:

$$\begin{cases} U_x \text{ crosses the critical threshold at the boundary of } U_0 & \Rightarrow \textbf{ Big Bang} \\ U_x \text{ crosses the critical threshold at the boundary of } U_+ & \Rightarrow \textbf{ Big Rupture} \end{cases} \quad \Longrightarrow \quad \text{a new } U_x \text{ is formed}$$

Five rulings

#	Ruling
G-1	The Dynamic Universe **may come to an end** through absolute collapse or absolute dissolution — **or it may not**
G-2	Collapse end → critical threshold at the boundary of U_0 → **Big Bang**
G-3	Dilution end → critical threshold at the boundary of U_+ → **Big Rupture**
G-4	**In both cases** a new U_x is formed
G-5	There may be a direct $U_0 \leftrightarrow U_+$ relation, but it **has no representation**

The Principle of Silence

Where there is no representation, Evertophy passes no judgement.

There may be a direct transition between U_0 and U_+; but it has no representation in any known sense, and what lies beyond belongs to metaphysics. Evertophy stays on the line of science, observation and experiment; here it **prefers to remain silent**. This is the same principle as c^+ being a closed cycle (Section 11): *first the academic boundary, then the absence of observation.* The only difference is the layer: there at the phase level, here at the outermost layer.

Four directions and their meanings

$$U_0 \Rightarrow U_x, \qquad U_x \Rightarrow U_0, \qquad U_x \Rightarrow U_+, \qquad U_+ \Rightarrow U_x$$

Direction	Meaning
$U_0 \Rightarrow U_x$	**Birth** — the formation of the three phases together, in the same constitution
$U_x \Rightarrow U_0$	**Limit** — the collapse end touching the global pole
$U_x \Rightarrow U_+$	**Limit** — the dissolution end touching the global pole
$U_+ \Rightarrow U_x$	**Result of re-formation** — canonical; the production mechanism is open

Separating result from mechanism

G-4 could be read as two separate propositions; but they are **not the same claim**:

$U_+ \Rightarrow U'_x$ **CANONICAL: the RESULT of global re-formation**

$U_+ \rightsquigarrow \{c_0, C_m, c^+\}_{\text{together, in the same constitution}}$ **OPEN: the MECHANISM of birth**

Symbol	Meaning
U'_x	The newly formed Dynamic Universe

That a new U_x is formed **is canon**; that this takes place through **the same** ontological production process as the birth at U_0 **is not canon**. The second proposition says that U_+ has the same birth process as U_0, and it is stronger; it remains open until U_+'s own function sentence is written (2.6).

Four mandatory safeguards

(i) The arrows connect to the whole, not to a phase.

$$U_0 \leftrightarrow U_x \text{ (relation with the whole)} \qquad \text{not} \qquad U_0 \leftrightarrow c_0 \text{ (gate)}$$

In this way the rule "U_0 is not the endpoint of any gate" is preserved. This is why the curly brackets are drawn in the core figure.

(ii) Global bidirectionality is not mathematical invertibility. The symbol $\leftrightarrow$ here shows the two ends of a relation; it **does not claim** the existence of an inverse operation.

(iii) The cycle is not a conveyor belt. Reading from left to right gives the impression of a process; but time is **inside** U_x. The global cycle is not a flow but a relation of **limiting conditions**.

$$\boxed{\text{Cycle index } \neq t}$$

There is no clock between U_x's. The order is **a logical provenance order**, like the order of records in the archive.

(iv) The cycle is not a mandatory periodic circuit. By G-1, the universe **does not have to** come to an end. The word "cycle" describes a possibility of closure, not a law of recurrence. Nor do these relations **enter** the topological computation of the phase triangle (Section 19).

Symmetry — a measured statement

The collapse branch and the dissolution branch carry **a structural symmetry at the level of the global limit poles**. But the following correspondence **is not set up**:

$$U_0 : c_0 \;::\; U_+ : c^+ \qquad \text{(there is NO ontological isomorphism)}$$

This is because U_0 gives birth not only to c_0 but to **all three phases at once**. For the same reason, U_+ cannot be defined as the global counterpart or outer shell of c^+.

Two meanings of the word "Big Bang"

Meaning	Content
Primordial birth	The beginning of the universe we observe
Cycle condition	The birth triggered by the crossing of the threshold at the collapse end of any U_x

The question whether the primordial birth came from a previous U_x falls within the scope of the **Principle of Silence**.

Author's ruling — re-triggering. The re-triggering of the U_0 regime does not contradict the ontology of bidirectional arrows. This sentence is not a definition of a cycle mechanism: the mechanism is open and the characterization of U_0 remains reserved.

"Big Rupture" is a homonymous term

In standard cosmology, the *Big Rip* is an event in which dark energy **ends** the universe. In Evertophy, **the Big Rupture is an end and at the same time a new birth** (G-4). A shared word gives no licence to merge the meanings.

Question	Answer
What does it do?	It defines the relation of the Dynamic Universe to the two limiting conditions, and re-formation
Why does it do it?	It is necessary to settle where the Big Bang and the possible end of the universe stand in the ontology
How does it do it?	It places the two thresholds (Big Bang, Big Rupture) at the boundaries of the global poles; it separates the result as canon and the mechanism as open; it sets four safeguards

Question	Answer
What result is expected?	That the cycle mechanism can later be established; until it is, that metaphysical speculation stays outside
What result is obtained?	The five rulings (G-1...G-5) and the Principle of Silence are canon; the mechanism of birth from U_+ is open

2.9 What does not hold at the global level

The constraints laid down for the phase level also hold at the global level; a few must be stated explicitly:

- **The metric is not defined at the global level.** $g_{\mu\nu}$ belongs only to $\mathrm{C_m}$ (Section 9); no metric or tetrad is written for U_0, U_x, U_+.
- **The domain projections of X are not applied to global objects.** X resolves the phase regime; the global poles are not its domain of definition.
- **The language of speed and time is not used.** No ratio, speed or duration is written for global relations.
- **The mathematical type of the global arrows is open.** It is known that they are **not** phase gates; their full types have not been defined.

Birth ≠ cycle

$$\text{Genesis} = U_0 \rightsquigarrow \{c_0,\, C_m,\, c^+\}_{\text{together, in the same constitution}} \qquad \text{CycleSeed} = \{\mathcal{L}_{\text{çöküş}},\ \mathcal{L}_{\text{seyrelme}}\}$$

Symbol	Meaning
Genesis	Birth: the joint formation of the three phases from U_0
CycleSeed	Cycle seed: the set of the two limits
$\mathcal{L}_{\text{çöküş}}, \mathcal{L}_{\text{seyrelme}}$	The collapse and dilution limits
$\dashrightarrow$	A link not yet established

$$\boxed{\text{Joint birth} \neq \text{double-limit cycle mechanism}}$$

The full link between the two — CycleSeed $\dashrightarrow$ Genesis — **is an open problem.**

Question	Answer
What does it do?	It writes birth and the cycle mechanism as two separate objects
Why does it do it?	The sentence "if the limit is crossed, a birth occurs" could, before a mechanism is established, be confused with birth itself
How does it do it?	It defines birth as an operation and the cycle seed as the set of two limits; it leaves the link between them open
What result is expected?	That the link can later be derived
What result is obtained?	The distinction is established; the link is an open problem

2.10 The initial mass of the universe and the record of the derivation chain

In the archive, universal-scale estimates are preserved as a chain. This record classifies the numbers not as ontological quantities but as **historical calculations and scale analogies**.

Links of the chain

1. **CMB scale:** $t_{\text{CMB}} \approx 3.8 \times 10^5$ years (recombination) → $D_{\text{çekirdek}} \approx 3.8 \times 10^5$ light years. The moment at which we see the CMB is read as the first observational phase transition of C_m.
2. **Planck-density projection:** $M \sim \rho_P \cdot V_{\text{çekirdek}} \sim 10^{161}$ kg in order of magnitude.
3. **Baryon / total correction:** 10^{53} kg is only the baryonic mass (~5%); with the Planck 2018 values $\Omega_b \approx 5\%$, $\Omega_{\text{DM}} \approx 27\%$, $\Omega_{\text{DE}} \approx 68\%$, one obtains $M_{C_m} \sim 2 \times 10^{54}$ kg.
4. **Dirac large numbers:** $D_{\text{evren}}/D_{\text{çekirdek}} \sim 10^{41}$; this ratio relies on a hypothetical model diameter (e.g. 10^{47} light years). If the diameter of the observable universe ($\approx 9.3 \times 10^{10}$ light years) is used, the ratio is $\approx 2.45 \times 10^5$; the two are not the same input. It is of the same order as the classical Dirac ratios ($F_e/F_g \sim 10^{39}$–10^{40}, $R_{\text{evren}}/r_{\text{proton}} \sim 10^{40}$).

$$M \sim \rho_P \, V_{\text{çekirdek}}, \qquad U_0 \text{ capacity metaphor} \in \left[\rho_P^{\min} V_{\text{CMB}}^{\min},\ \rho_P^{\max} V_{\text{CMB}}^{\max}\right]$$

Symbol	Meaning
ρ_P	Planck density ($\approx 5.16 \times 10^{96}$ kg/m^3)
$V_{\text{çekirdek}}$, V_{CMB}	The historical core volume derived from the CMB scale
Ω_b, Ω_{DM}, Ω_{DE}	Density fractions of baryons, dark matter and dark energy
D_{evren}, $D_{\text{çekirdek}}$	Model diameter of the universe and historical core diameter

Critical status rulings

10^{161} kg is NOT a physical mass; its correct use is as an upper bound / capacity metaphor.

A numerical mass reading for U_0 is not carried into the current ontology; U_0 is neither a phase nor a gate endpoint.

The correspondence $10^{161} \leftrightarrow 10^{120}$ (cosmological constant) is unsupported and has been withdrawn.

Question	Answer
What does it do?	It keeps on record the historical chain of calculations concerning the initial scale of the universe
Why does it do it?	These numbers occur frequently in the archive; if their status is not stated, they could be mistaken for ontological quantities
How does it do it?	It writes each link with its source; it states explicitly that the numbers are not physical masses but a capacity metaphor
What result is expected?	That, once the tree of assumptions is disentangled, it becomes clear which number rests on which input

Question	Answer
What result is obtained?	The convergence of two independent routes to ~10^{47} light years is recorded as a sign of internal consistency; but the number is not taken into the canon. The range-form capacity notation for U_0 is not locked until the bands become clear (a safeguard against the risk of "narrative inflation")

SECTION 3

THE THREE-PHASE ONTOLOGICAL ARCHITECTURE

3.1 Why three phases?

The three-fold architecture is **motivated** by three distinct boundary tendencies; this does not prove that three-foldness is the only possible ontology. Whether the number of phases is primitive or derived is an open debt (APPENDIX K.1).

- **Downward: c_0**, in which differentiation dissolves and matter is integrated into a single structure.
- **Upward: c^+**, in which C_m matter support dissolves.
- **In between: C_m**, in which measurement is possible.

The present framework defines no fourth **independent boundary**. This shows not that a fourth phase is impossible, but that none has been proposed.

Two extreme tendencies, two global poles. These two extreme tendencies in the three-phase architecture are related, at the global level, to the **saturation** and **dissolution** poles respectively (Section 2.8). The double-limit structure is not a cosmological assumption added afterwards; it is the global reading of two tendencies already present within the three-phase architecture.

> This relation is NOT A ONE-TO-ONE ONTOLOGICAL CORRESPONDENCE of the form $c_0 \leftrightarrow U_0$ or $c^+ \leftrightarrow U_+$.

3.2 c_0 — the pre-temporal potential / core phase

Current core definition

c_0 (Potential / Black-Hole Phase): The pre-temporal potential and core phase in which measurable matter loses its atomic and particle properties, and all particles merge — to a degree that converges to the metric-gapless state at the Planck scale — into the form of **a single integrated structure**.

Property	Its state in c_0
Internal physical time	Absent — not yet established ($\perp_0$)
Metric $g_{\mu\nu}$	Not admissible ($\perp_0$)
Differentiated matter of C_m	Becomes a metric-gapless, contiguous single structure
Black hole	Ontologically identical with c_0 (author's ruling)

Time in c_0: not stopped, but not yet established

$$\text{There is NO internal physical time in } c_0: \qquad T(c_0) = \perp_0 \neq 0$$

There is a critical distinction here:

State	Meaning
Time **has stopped**	There is a clock, but it does not advance — this is a C_m state
Time **is absent**	The very concept of a clock cannot be established — this is the state in c_0

In c_0, time is **not yet established**; this is why c_0 is called **pre-temporal**. Time does not "flow slowly" there, nor is it "a frozen river". The detailed account is in the description of c_0 in the opening section.

Matter in c_0

$$C_m \to c_0 : \quad \text{differentiated matter} \longrightarrow \text{COLLECTIVE SINGLE-STRUCTURE LIMIT}$$

The distinction between discrete objects dissolves. The distinction between "this particle" and "that particle" loses its operational content, and the regime acquires a **collective** character.

The metric in c_0

$g_{\mu\nu}$ is **not an admissible object** in c_0: the metric there is not destroyed, but not yet established.

Analogies of collective behaviour — the BEC

Bose–Einstein condensation (BEC) and superfluidity are laboratory-accessible examples of **collective and coherent behaviour**, and can be used for the **single-structure intuition** of c_0. By the author's ruling, **the BEC is the environment in the matter phase that is closest to the c_0 environment**; but it is not c_0 itself: time flows inside it and the system remains in C_m.

$$\text{BEC} \neq c_0 : \text{the environment in the matter phase closest to the } c_0 \text{ environment — an ANALOGY, NOT a literal identity.}$$

c_0 and black holes

In the Evertophy ontology, the black hole and the c_0 phase are ontologically identical (a basic definition directly approved by the author). The quantitative connection of this identity with observables in C_m, the mechanism of formation and the relation between the event horizon and the phase boundary must be derived separately; the one-to-one identity "event horizon = phase boundary" has not been established. The ontological identity does not define C_m-type time, three-dimensional Euclidean space or a metric inside c_0.

Author's ruling — a black hole is not an annihilation. A black hole is neither an annihilation nor an infinite singularity. A particle that touches its surface through the Force of Attraction integrates with the structure, regardless of whether it is entangled; the BEC is here only an analogy of a collective single structure. The particle outside may or may not keep its spin; mass is conserved independently of spin. Spin and entanglement are preserved as long as there is no interaction with the environment (measurement or contact with matter).

Author's ruling — metric-gapless single structure. The structure inside the event horizon is **contiguous**, finite and **of a single form**, to a degree that converges to the metric-gapless state at the Planck scale. This does not mean "the black-hole core is Planck-sized"; it says that the mass

structure inside the black hole is entirely of a single form, in which almost no metric gap remains between particles. This is the core logic of Evertophy's reading of c_0. The saturation is written through a reading of X (X itself is not a scalar, Section 4):

$$\xi_{\text{sat}} = \pi_{\text{sat}}(X) \;\longrightarrow\; \xi_{\text{sat}}^{\max} \qquad \text{(in the normalized reading } \xi_{\text{sat}} \approx 1\text{)}$$

Symbol	Meaning
π_{sat}	The saturation readout projection of X
ξ_{sat}	Saturation reading; when normalized, its upper bound is 1

Author's ruling — c_0 capacity. The internal capacity of c_0 grows in relation to both mass and surface area: capacity scales **linearly with mass**, while the horizon area grows **with the square of the mass** (when the mass doubles, the horizon radius doubles and the horizon area quadruples). Capacity therefore scales with the square root of the horizon area. The ratio between mass and horizon diameter is a known fact. The counting unit of core capacity is the **Planck mass**; the density of the single structure cannot exceed the Planck density. **As a separate author's ruling**, a more massive black hole is not denser; it has a larger volume of the same metric-gapless structure and a wider horizon. This second ruling is not derived from the density upper bound: the upper bound gives only the smallest volume; that density does not increase with mass is a property of the single structure itself (see the conditional scaling below):

$$R_s = \frac{2GM}{c^2}, \qquad A = 4\pi R_s^2 = \frac{16\pi G^2 M^2}{c^4}$$

$$N_{c_0} = \frac{M}{m_P}, \qquad m_P = \sqrt{\frac{\hbar c}{G}}, \qquad \rho_{c_0} \le \rho_P = \frac{c^5}{\hbar G^2}, \qquad V_{c_0} \ge \frac{M}{\rho_P} = N_{c_0}\,\ell_P^3$$

$$R_{c_0} \propto M^{1/3} \;\; (\rho_{c_0} \text{ constant}), \qquad R_s \propto M, \qquad A \propto M^2, \qquad \frac{R_{c_0}}{R_s} \propto M^{-2/3}$$

Symbol	Meaning
R_s	Schwarzschild (horizon) radius
A	Horizon surface area
M	Mass of the black hole (of the c_0 structure)
G, c, $\hbar$	Gravitational constant, speed of light, reduced Planck constant
N_{c_0}	Core capacity in units of the Planck mass
m_P	Planck mass ($\approx 2.18 \times 10^{-8}$ kg)
ρ_P, ℓ_P	Planck density ($\approx 5.16 \times 10^{96}$ kg/m^3) and Planck length; $\rho_P \ell_P^3 = m_P$
V_{c_0}, R_{c_0}	Volume and radius of the single structure

Question	Answer
What does it do?	It writes the capacity and volume of the single structure inside a black hole, and its scaling with the horizon
Why does it do it?	A finite and consistent picture must replace the singularity reading of "infinite density, zero volume"

Question	Answer
How does it do it?	It counts capacity in units of the Planck mass; it places the Planck upper bound on density; it scales the volume of the single structure and the horizon with mass
What result is expected?	A picture in which, as mass increases, it is volume and not density that grows; the establishment of a quantitative form for the relation between horizon area and capacity
What result is obtained?	The ratios are correct: the horizon radius grows with M, the horizon area with M^2; the radius of the single structure grows with $M^{1/3}$ **in the constant-density realization**. Taking the density at its Planck value (the smallest radius), for a black hole of one solar mass $R_{c_0}^{\min} \approx 4.5 \times 10^{-23}$ m (much larger than the Planck length, much smaller than the ~3 km horizon); for this reason the horizon and the boundary of the single structure are not regarded as identical. The internal profile and the relation of capacity to the area law are open (APPENDIX K)

The scaling of capacity with mass, and of horizon area with the square of mass, is consistent with the observationally tested area theorem; the Bekenstein–Hawking area law, which states that entropy is proportional to area, is by contrast a theoretical result not tested by observation (23.3).

Capacity, density and radius — conditions and type of reading

Of the relations above, one is **derived**, one is a **ruling** and one is a **conditional** result; the three are kept separate:

$$N_{c_0} = \frac{M}{m_P} \propto M \propto \sqrt{A}, \qquad \rho_{c_0} \le \rho_P \;\Rightarrow\; V_{c_0} \ge \frac{M}{\rho_P}, \qquad R_{c_0} \ge R_{c_0}^{\min} = \left(\frac{3M}{4\pi\rho_P}\right)^{1/3}$$

$$\rho_{c_0}(M) = \rho_* \le \rho_P \;\text{(constant-density realization)} \;\Rightarrow\; R_{c_0} = \left(\frac{3M}{4\pi\rho_*}\right)^{1/3} \propto M^{1/3}, \qquad \frac{d\ln R_{c_0}}{d\ln M} = \frac{1}{3}\left(1 - \frac{d\ln \rho_{c_0}}{d\ln M}\right)$$

$$M \in [M^-, M^+],\;\; \rho_{c_0} \in [\rho^-, \rho^+],\; \rho^- > 0 \;\Rightarrow\; R_{c_0} \in \left[\left(\frac{3M^-}{4\pi\rho^+}\right)^{1/3}, \left(\frac{3M^+}{4\pi\rho^-}\right)^{1/3}\right]$$

Symbol	Meaning
N_{c_0}	Dimensionless measure of capacity; in general a real number (being an integer would require an additional quantization ruling)
A	Horizon area (Schwarzschild family; for a rotating black hole the spin parameter enters separately)
ρ_*	Mass-independent density of the single structure (constant-density realization)
$R_{c_0}^{\min}$	The smallest radius, coming from the density upper bound
$d\ln R/d\ln M$	The scaling exponent of radius with mass
$M^{\pm}$, $\rho^{\pm}$	The range endpoints of mass and density (independent coverage bands)

Question	Answer
What does it do?	It separates which of the capacity, density and radius relations is derived, which is a ruling and which is conditional

Question	Answer
Why does it do it?	From the upper bound $\rho \leq \rho_P$ alone it does not follow that density is constant or does not increase with mass; this gap in inference was not visible in the earlier account
How does it do it?	From the upper bound it derives only the smallest volume and radius; it ties $R \propto M^{1/3}$ to the constant-density realization; in the general case it gives the formula tying the scaling exponent to the variation of density with mass (if density does not increase with mass, the exponent is $\geq 1/3$)
What result is expected?	The derivation of the internal profile of the single structure and of ρ_*
What result is obtained?	$N_{c_0} \propto M \propto \sqrt{A}$ and $V \geq M/\rho_P$ are **derived**; that density does not increase with mass is an **author's ruling**; $R \propto M^{1/3}$ is a consequence of the **constant-density realization**. The 4.5×10^{-23} m in the solar-mass example is not a measured radius but a lower bound calculated by taking $\rho_* = \rho_P$. If the author's ruling also covers exact proportionality, this means that the mean density is independent of mass ($\rho_{c_0} = \rho_*$)

Type of reading (type note). Since C_m-type length and metric are undefined in c_0 ($g_{\mu\nu}|_{c_0} = \perp_0$), V_{c_0}, R_{c_0} and ρ_{c_0} are **not the internal geometry** of c_0, but **effective parameters used in the C_m physical readout** of the c_0 structure. This is the application to these quantities of the document's distinction between source phase and observation phase (15.1a), and it does not change the identity black hole ≡ c_0:

$$\mathcal{O}_{c_0}^{C_m} : \text{Durum}(c_0) \times \text{Bağlam}(C_m) \longrightarrow \mathcal{I}(\text{kg}) \times \mathcal{I}(\text{m}) \times \mathcal{I}(\text{m}^3) \times \mathcal{I}(\text{kg/m}^3), \qquad (M_{c_0}, R_{c_0}, V_{c_0}, \rho_{c_0}) = \mathcal{O}_{c_0}^{C_m}(s, \mathcal{C})$$

Symbol	Meaning
$\mathcal{O}_{c_0}^{C_m}$	The readout map from the c_0 structure to the effective C_m parameters (its form is open)
$\text{Durum}(c_0)$, $\text{Bağlam}(C_m)$	c_0 states and the C_m observation context
$\mathcal{I}(D)$	The range type in unit D; the output is the product type of four ranges of different dimensions
$s, \mathcal{C}$	A c_0 state and a C_m observation context
M_{c_0}	The mass of the c_0 structure as read in C_m

Question	Answer
What does it do?	It states in what sense the volume, radius and density assigned to the metric-free c_0 are defined
Why does it do it?	For the ruling "length is undefined in c_0" and the statement "the radius of the single structure is so much" to be true together, the type of reading must be explicit
How does it do it?	It types these quantities not as magnitudes measured inside c_0 but as outputs of a readout map in C_m
What result is expected?	The establishment of the readout map (APPENDIX K.1)
What result is obtained?	**The type distinction is established**; the map itself is open

Author's ruling — departure from c_0. The speed and/or density of the structure that departs from c_0 determines what will form: matter, light or c^+. The speed and density here are not internal quantities of c_0 — in c_0 speed, duration and length are undefined —; they are **boundary readings on the C_m side** of the transition (v_∂, ρ_∂). The ruling states with which reading the emerging structure appears in C_m, and it is read together with the membership band of 3.3:

$$\underbrace{0 < v < c}_{C_m \text{ matter}}, \qquad \underbrace{v = c}_{\text{liminal shared boundary (light)}}, \qquad c^+ : \text{ dissolution of the band } \neq v_{c^+} = \frac{dx}{dt} > c$$

Symbol	Meaning
v	Membership reading; not a laboratory coordinate speed (3.3)
c	Speed of light — the consistency constraint of C_m
v_{c^+}	A C_m-type speed for c^+; not defined (3.4)

Question	Answer
What does it do?	It defines the criterion that determines to which phase the structure departing from c_0 will go
Why does it do it?	What the mass and energy coming out of a black hole are read as in C_m (matter, light, c^+) must find a place in the ontology
How does it do it?	It uses the C_m membership band as the criterion: inside the band, matter; on the boundary, light; the regime in which the band dissolves, c^+
What result is expected?	The establishment of a quantitative form of the rule
What result is obtained?	The ruling is established; that c^+ is beyond c is not a C_m-type superluminal motion (3.4). The quantitative form is open

Possibilities left open by the author — capacity in mergers. When two black holes merge, all possibilities may be open for the core capacity that decreases: (1) a tendency towards c^+ through gravitational waves, (2) the production of matter, (3) a separate black hole, (4) all of these in part. Which one, or which combination, is realized is open.

Historical over-concrete definitions

The following are at the **historical or model** level and are not the current core: the stasis lock · the zero-differential engine. The old readings "full Planck saturation state" and "a definite Planck density", in turn, have been rewritten in current form by the author's ruling of a metric-gapless single structure: there is no claim that the core is locked to a definite numerical density; there is only the upper bound $\rho_{c_0} \leq \rho_P$.

The notations "not infinite density, but zero differential" and `dt=0, dx=0` are not current ontological definitions. But neither are they regarded as entirely deleted: they may be mentioned as **historical-pedagogical shorthands** expressing that ordinary C_m freedoms of time and space are not admissible in c_0.

> In c_0 , C_m-type dt and dx are not ontological primitives; " $dt = 0,\ dx = 0$ " is only a pedagogical boundary language.

This shorthand does not mean that a previously established clock inside c_0 has stopped, or that the C_m metric has been set to zero.

Temporal position in c_0

c_0 is **not a temporal priority but a position of regime.** Within the current U_x, too, c_0 membership may be possible in high-density regimes; which physical system carries c_0 membership depends on the quantitative bridge and is an open debt.

Author's ruling — local re-formation. The phases are formed together at the Big Bang; in addition, matter that succumbs to the Force of Attraction at a critical mass can locally form c_0 again, and extreme dissolution (entropy / disorder) can form c^+. These are the $C_m \rightarrow c_0$ and $C_m \rightarrow c^+$ edges of the phase triangle; the quantitative form of the thresholds is open.

Temperature in c_0 and absolute zero

Author's ruling: $c_0 \neq$ absolute zero. Absolute zero (0 K) is the thermodynamic limit state within the C_m phase itself; in c_0, by contrast, the very concepts of temperature and heat are undefined.

$$T(c_0) = \perp_0 \neq 0, \qquad T \rightarrow 0\ \mathrm{K} \ \Rightarrow\ C_m \text{ ground state}$$

Symbol	Meaning
T	Temperature — a quantity defined only in C_m
$\perp_0$	The "not yet established" absence in c_0 (5.3); not the numerical zero
0 K	Absolute zero: the thermodynamic limit of C_m

A system approaching absolute zero remains in C_m: quantum zero-point motion continues and clocks keep running. Cooling alone does not lead to c_0; what is approached in ultra-cold experiments (the BEC) is not c_0 but the ground state of C_m.

Read together with the ruling black hole ≡ c_0, the Hawking temperature attributed to a black hole is interpreted not as the internal temperature of c_0, but as the thermal reading that the horizon gives to a distant C_m observer. This is a **candidate reading**; taking it into the canon is the author's decision, and the quantitative bridge is open (APPENDIX K.2).

$$T_H = \frac{\hbar c^3}{8\pi G k_B M}$$

Symbol	Meaning
T_H	Hawking temperature — the C_m readout temperature of the horizon (candidate reading)
k_B	Boltzmann constant
M	Black-hole mass

Question	Answer
What does it do?	It establishes the relation of c_0 to temperature: it is not absolute zero; temperature is undefined there
Why does it do it?	The misconception "c_0 = the coldest state" confused a limiting state of C_m with c_0

Question	Answer
How does it do it?	It separates absolute zero as the ground state of C_m, and c_0 as the regime in which temperature is not established; it interprets the Hawking temperature as the reading of the horizon in C_m
What result is expected?	The establishment of a quantitative bridge between the Hawking temperature and the internal structure of c_0
What result is obtained?	"$c_0 \neq$ absolute zero" is an author's ruling; the interpretation of the Hawking temperature as a horizon reading is a candidate reading

3.3 C_m — differentiated matter / measurement / emergent time

Current core definition

C_m (Matter / Atom / Particle Phase): The phase in which the physical reality we directly interact with exists: differentiated massive matter, atoms and subatomic particles, measurement processes, and the time we experience as a unidirectional flow.

Property	Its state in C_m
Matter	Differentiated matter
Measurement	Direct physical measurement only here
Time	The **only home** of emergent physical time
Metric	The **only domain of definition** of $g_{\mu\nu}$

Standard physical speeds, ratios and metric readings are meaningful **only here**.

C_m and the light barrier

> Before it is a SPEED LIMIT, c is the CONSISTENCY CONSTRAINT of C_m.

c sets the limit of information processing, record and resolution of the C_m phase. It is read not as the speed limit of an object moving in space, but as the limit of the phase's own internal consistency.

The kinematic membership band

> The matter-membership condition of C_m is the sustainable speed band $0 < v < c$; $v = c$ is the liminal phase boundary.

This is the author's core ruling. The v here is not the local laboratory coordinate speed: the ontological status of the band is definite; the precise mathematical reading of v and its connection with measurement are open.

$$\underbrace{0 < v < c}_{\text{core membership ruling}} \quad + \underbrace{\mathcal{R}_v : \text{state} \to v_{\text{üyelik}}}_{\text{open reading}}, \qquad v_{\text{lab}} = 0 \not\Rightarrow c_0$$

Symbol	Meaning
v	Membership reading: the joint reading of an object's spatial position, overall motion and internal dynamics
$\mathcal{R}_v$	The readout map from a state to the membership speed; open
v_{lab}	Local laboratory speed

The "0" at the lower end of the band is a **relative-speed floor** defined with respect to any cosmological or inertial reference frame. Even a particle at rest in the laboratory is a member of Cm because of its internal dynamics, spin structure and cosmological drift. The expression "universal reference" is not a classical privileged-frame coordinate speed; the membership reading is at the level of the X-resolution (Section 4). The mathematical reference object of the band is deliberately left open until the readout map (15.2) and the realization of X (24.3) are closed. The rule of Section 3.7 ("map position ≠ phase membership") also holds for kinematic membership: the measured local speed does not by itself determine phase membership. Structures inside Cm are classified not only by the kinematic band but by the multi-constraint resolution in the **interior region** of the phase-parameter landscape (Section 12.3).

Crossing the band is not an acceleration. Evertophy accepts the experimentally verified relativistic results in Cm as physical constraints that must be explained; their derivation from the emergent structure must be established separately. A massive body inside Cm cannot reach c by accelerating. The transition to c⁺ is a **phase transition** that takes place at the threshold $v = c$: what is crossed is not a speed value but the membership band of Cm; after the transition, the speed language of Cm is undefined.

Light is liminal — a shared boundary. The photon lies on the $v = c$ boundary: it is not a member of the band but the liminal state of the boundary. This boundary is the **shared boundary** of Cm and c⁺: a structure on the boundary of the Cm band is at the same time on the boundary of the c⁺ regime. Lying on the boundary is not the same as being a member of either phase; the photon is a member neither of the massive matter of Cm nor of c⁺ (7.6).

$$\text{boundary}(C_m)\big|_{v=c} \;=\; \text{boundary}(c^{+})\big|_{C_m\ \text{side}}, \qquad \text{liminal} \neq C_m \text{ membership}, \qquad \text{liminal} \neq c^{+} \text{ membership}$$

Author's ruling — gravitational waves. Gravitational waves, like light, propagate on the phase regime–threshold boundary, that is, on the shared boundary $v = c$; this does not mean c⁺ membership (7.6). It is known from measurement that gravitational waves propagate at the same speed as light (GW170817); the ruling is consistent with this measurement, but not derived from it.

Question	Answer
What does it do?	It determines when a structure is a member of Cm as matter, and where light stands
Why does it do it?	Confusing phase membership with local speed (e.g. "$v_{\text{lab}} = 0$ implies c₀") and readings of superluminal matter would break the ontology
How does it do it?	It fixes the membership band as $0 < v < c$; it defines $v = c$ as the shared liminal boundary of Cm and c⁺; it separates v as a membership reading
What result is expected?	The establishment of the readout map $\mathcal{R}_v$ and the recovery of relativistic results from the emergent structure

Question	Answer
What result is obtained?	The band and the shared-boundary reading are canon; $\mathcal{R}_v$ and the mathematical reference object of the band are open

C_m and measurement

Everything said about c_0 and c^+ is a READING made from C_m.

C_m is the epistemic centre — not a topologically mandatory intermediary

This distinction is critical. C_m is central from the point of view of **measurement and record**. In the phase topology, passing through C_m is not mandatory (Section 3.5).

Note on the model layer

The following records are **models and candidate bridges** inherited from the historical development layer. They aim at computability and testability; none of them redefines Postulate 0, the three-phase ontology, the core definition of X or the stamp algebra. The distinction between model and ontology is preserved exactly as in the epistemic order of Section 1.5 and APPENDIX E.

Scale-regime working classes — candidate model

The quantum, thermal, astrophysical and cosmological classes are SCALE-REGIME classes within C_m; they are not ontological phases.

Scale-regime class	Typical working domain
Quantum	Subatomic systems
Thermal	Laboratory and many-body thermal systems
Astrophysical	Stellar, compact-object and galactic scales
Cosmological	The scale of the universe

These classes are **not** the ontological phases c_0, C_m and c^+. They may be used to group the rows of the phase-parameter matrix, or families of observables, by scale; they do not form a separate ontological layer.

3.4 c^+ — the atemporal upper / archive / coordination phase

Current core definition

c^+ (Dark Matter / Dark Energy / Vacuum Phase — Dissolved Phase): All of the structure of the universe that is not in the form of matter (the entire particle structure) or of black holes: cosmic voids, the vacuum medium, dark matter and dark energy — and **even the space between the particles that make up the atom** (author's ruling).

Property	Its state in c^+
Internal C_m physical time	Absent — dissolved ($\perp_+$)

Property	Its state in c⁺
Internal Cm speed	Undefined
Metric $g_{\mu\nu}$	Absent ($\perp_+$)
Cm matter support	Dissolves
Ontological identity	Dark matter ≡ dark energy ≡ vacuum
The future	c⁺ is not an oracle of the future

The distinctive property of c⁺

$$\boxed{\mathrm{supp}_{C_m}(\text{matter}) \to \varnothing, \qquad g_{\mu\nu}^{(C_m)} \to \perp_+}$$

Symbol	Meaning
$\mathrm{supp}_{C_m}(\text{matter})$	Cm matter support: the basis on which Cm-type matter can exist
$\varnothing$	The empty set
$g_{\mu\nu}^{(C_m)}$	The Cm metric
$\perp_+$	The "dissolved" absence in c⁺

The dissolution of Cm matter support is the main ontological distinction of c⁺.

Cm concepts are not carried into c⁺ unchanged

Not used	Current safe statement
~~matter carrying Cm-type rest mass remains unchanged in c⁺~~	Cm matter support dissolves
~~diluted length~~	Cm metric length is not admissible in c⁺
~~diluted duration~~	Cm physical duration is not admissible in c⁺
$v > c$~~, superluminal matter~~	The internal Cm speed language is undefined
~~the outer shell moves faster than light~~	The concept of motion belongs to the Cm reading

This safeguard prevents **the direct carrying of the Cm matter ontology into c⁺.**

The historical K2 subtlety

In one version of the old formal core, an abstract "mass dimension" carrier was encoded as permitted for c⁺ (`actM cp = true`). This record is preserved as formal provenance information; but since the same old specification also carries other assumptions that are invalid today, this line on its own does not count as current physical canon.

> Cm material / rest-mass support is not preserved in c⁺ the abstract mass-dimension record of historical K2 ≠ a current c⁺-specific mass observable

That the dark sector produces a gravitational reading in C_m does not prove that there is a C_m-type mass carrier inside c^+. According to Postulate 0, what stands in a more fundamental position than matter is the Force of Attraction; gravitation is one of its metric projections in C_m.

The matter ontologies of c_0 and c^+ are not the same

$C_m \to c_0$: metric-gapless single structure $C_m \to c^+$: dissolution of C_m matter support

In the first, differentiated matter goes to **a single collective structure**; in the second, C_m matter support **dissolves**.

c^+ and the archive

The characteristic property of c^+ is its character as **archive and coordination**. The records produced in C_m are sealed there and **are present together without requiring temporal ordering**. The expression "the whole past is present at the same time" is not used, because "at the same time" is a concept of physical time.

Sealed records of C_m origin are present together without requiring temporal ordering.

Being present together does not mean being accessible from C_m; access from C_m depends on an explicit readout law (15.2).

Time in c^+

In c^+ there is no time, and no constraint that depends on time. This is a different absence from the "not yet established" absence in c_0: in c^+, the time that had been established in C_m is **dissolved**. Writing "$dt_{c^+} = 0$" is, as in c_0, only a pedagogical shorthand; the ontological statement is $\perp_+$, and $\perp_+$ is not the numerical zero.

$$T(c^+) = \perp_+, \qquad \mathcal{G}_{C_m}\big|_{c^+} = \perp_+ \neq 0, \qquad dt_{c^+} = 0 \ \text{(pedagogical shorthand only)}, \qquad \perp_0 \neq \perp_+ \neq 0$$

Symbol	Meaning
$T(c^+)$	Physical time in c^+
$\mathcal{G}_{C_m}$	The structure of distinguishable change in C_m (7.2)
$\perp_0, \perp_+$	The "not yet established" absence in c_0 and the "dissolved" absence in c^+

c^+ and the speed of light

The relation of c^+ to the speed of light is locked by three sentences:

c^+ is the beyond- c ontological phase that lies beyond the c -bounded space-time regime of C_m.

c^+ being beyond c $\not\equiv$ a C_m-type $v_{c^+} = \dfrac{dx}{dt} > c$

beyond- c ontological regime $\neq$ ordinary superluminal matter motion measured inside C_m

The reason for the second and third sentences is this: in c^+, the physical time, three-dimensional Euclidean space, metric and differentiated matter support specific to C_m are dissolved; consequently, a C_m speed of the form dx/dt is not defined there. The author's ruling is this: **c^+ is the upper phase, outside the band $0 < v < c$, in which the structure of matter cannot be preserved once the light-speed threshold is crossed; it is at the same time the timeless phase in which the temporal record and order information formed in C_m are sealed; physical time itself does not exist in c^+.** c^+ is formed at the U_0 birth together with c_0 and C_m, in the same constitution (2.8). What remains open is only the final mathematical representation of being beyond c. Statements about c^+ and speed in the other sections of the document are to be read according to this ruling.

Question	Answer
What does it do?	It makes precise what it means for c^+ to be "beyond the speed of light"
Why does it do it?	A reading of "faster-than-light matter" would contradict both the measurements and the absence of time and space in c^+
How does it do it?	It defines being beyond c as a difference of regime; it states that the C_m-type speed expression cannot be applied to c^+
What result is expected?	The establishment of a final mathematical representation of being beyond c
What result is obtained?	The three locking sentences are canon; the mathematical representation is open

$c^+ \equiv$ vacuum, $c^+ \neq$ the future

$$c^+ \equiv \text{Dark Matter} \equiv \text{Dark Energy} \equiv \text{Vacuum} \qquad c^+ \neq \text{the future}$$

Author's ruling — c^+ is equivalent to the vacuum. Ontologically, c^+ is the vacuum itself. The "vacuum state" of quantum field theory, and the calculations made with it, are **the computational language within C_m** of this identity; every effect measured in the vacuum (for example, the Casimir force) is accepted unconditionally and is interpreted in Evertophy as the reading of c^+ in C_m. **The representation and what it represents are separate layers:** the vacuum state $|0\rangle$ of quantum field theory and the calculations of vacuum energy are a C_m computational representation; the ontological object they represent is c^+. This distinction does not weaken the identity (third principle): $c^+ \equiv$ vacuum is an ontological identity, while $|0\rangle$ is its mathematical representation in C_m.

Author's ruling — space inside the atom. Even the space between the particles that make up the atom is c^+. Since three-dimensional space is dissolved in c^+, it is not correct to say "c^+ is located somewhere"; the correct statement is that every region C_m reads as "empty space" is the reading of c^+ in C_m. This ruling does not change the measured results of atomic physics; the predictions of quantum mechanics inside the atom remain fully valid as the computational language of C_m.

Every region read as "empty space" on the C_m screen — from intergalactic voids to the space between particles inside the atom — is the C_m reading of c^+ .

Nor is c^+ a source of prophecy or a controllable superluminal communication channel.

Question	Answer
What does it do?	It defines the relation of c^+ to the vacuum and to the empty space within matter
Why does it do it?	That the dark sector, the vacuum and the empty space inside matter appeared to be things requiring separate explanations concealed different readings of the same phase
How does it do it?	It holds c^+ to be ontologically equivalent to the vacuum; it positions QFT vacuum calculations as the C_m computational language of this identity; it counts every place that C_m reads as "empty space" as a reading of c^+
What result is expected?	That vacuum effects and the dark-matter and dark-energy readings are connected quantitatively under a single phase identity
What result is obtained?	The identity and the ruling on space inside the atom are author's rulings; the quantitative mechanism for each observational phenomenon is open (11.2)

Historical language

The following are **historical or analogical**, not the current core: "the cocoon of the universe" · "graph state" · "outer shell" · "texture seeping into inner space".

3.5 Phase topology — the complete bidirectional triangle

$$c_0 \leftrightarrow C_m, \qquad C_m \leftrightarrow c^+, \qquad c_0 \leftrightarrow c^+$$

The complete bidirectional triangle (K3) is the current topology. The old chain model ($c_0 \rightleftarrows C_m \rightleftarrows c^+$, in the sense of "no skipping") is not the current topology; the chain is a historical notation.

> C_m is the EPISTEMIC / MEASUREMENT centre — it is NOT a TOPOLOGICALLY mandatory intermediary.

Gate and stamp

> THE GATE IS BIDIRECTIONAL ON ALL THREE EDGES. Irreversibility lives not in the phase gate but in the ACT OF SEALING.

The arrow of time is associated not with the direction of transition but with **the accumulation of record and seal**: the record channel is unidirectional ($C_m \rightarrow c^+$) and the seal is fixed (author's ruling, 7.1). The physical derivation of this relation has not yet been established (7.8, 16.7).

Question	Answer
What does it do?	It defines the structure of connections among the three phases
Why does it do it?	The old chain model left no room for a direct relation between c_0 and c^+ and made C_m a mandatory intermediate stop
How does it do it?	It connects each phase to the other two by a bidirectional gate; it takes irreversibility away from the gate and assigns it to sealing

Question	Answer
What result is expected?	That the concepts of gate, transport and readout are established consistently on this topology (13.1a)
What result is obtained?	The complete triangle is canon and has been formally encoded; the triangle is a structure given by the author, not derived from nature

3.6 Phase mixture — not a mandatory model

Mixture models, in which a region carries shares of more than one phase, exist in the archive:

$$\sum_i \sigma_i = 1, \qquad i \in \{0,\ m,\ +\}$$

Symbol	Meaning
σ_i	The share of a region belonging to phase i (model)

> The mixture-simplex model is NOT a MANDATORY part of the current ontology. The complete-triangle ontology is independent of it.

Question	Answer
What does it do?	It represents a region through the shares of the three phases
Why does it do it?	In some calculations it is useful to summarize "how close to which phase" a region is
How does it do it?	It writes the shares as fractions summing to 1
What result is expected?	That it is used as a tool of representation
What result is obtained?	It is a model or a tool of representation; it cannot be imposed as an ontological requirement, and it does not mean "simultaneous membership in three phases" (3.10)

3.7 Map position ≠ phase membership

$$\boxed{\text{MAP POSITION} \neq \text{PHASE MEMBERSHIP}}$$

Example. Fast subatomic particles are subject to **the laws of C_m**. That they appear in the neighbourhood of c^+ on the phase map does not make them members of c^+. Map position shows which regime an object **is approaching**, not of which phase it is a member.

3.8 U_x — the holistic representation of the three-phase system

> **Historical source record.** The following relation comes from the closing record in the archive. The current topology is the complete bidirectional triangle (Section 3.5); the current definition of U_x is in Section 2.7.

$$\boxed{U_0 \ \leftrightarrow\ [c_0,\ C_m,\ c^+]_{K_3} \ \equiv\ U_x}$$

Symbol	Meaning
$[c_0, C_m, c^+]_{K_3}$	The three phases connected by the complete bidirectional triangle
$\equiv$	"Represents this holistically" — not a set-theoretic type assignment

The minimal meaning fixed with confidence in this version is:

$$U_x = \text{the holistic Dynamic Universe in which the three phases are realized together}$$

U_x is **the holistic representation** of the three-phase system: it is not a fourth phase or a new node in the phase triangle; it is a **global node** in the global ontology layer. Nor is it another name for $X(x)$:

$$U_x \neq U_0, \qquad U_x \neq X(x), \qquad X \notin \{c_0, C_m, c^+\}$$

This record does not by itself close the full ontological meaning of the relation between U_0 and U_x; $\leftrightarrow$ and $\equiv$ are not the same relation. Although the interpretation "U_0 is only the generating pre-layer, U_x is only the generated system" is reasonable, no additional canonical definition is made in this version; the full meaning of the relation is **an open debt**.

In the core figure, placing c_0 at the top and calling C_m "the epistemic / measurement centre" are different layers of representation: the first is a drawing arrangement, the second a position of measurement; neither defines a new topological centre.

Question	Answer
What does it do?	It represents the whole of the three phases as a single global object
Why does it do it?	It must be written explicitly that the Dynamic Universe is a global node separate from the phases
How does it do it?	It gathers the triangular structure under the name U_x; it separates it from U_0, from X and from the phases
What result is expected?	The determination of the structural type of U_x (inclusion or membership)
What result is obtained?	The minimal meaning is established; the type and the full meaning of the U_0–U_x relation are open

3.9 Record of historical alternative phase narratives

In the early layers of the framework, different orderings and correspondences were tried for the phase chain. They contradict the current ontology and are recorded with protective sentences:

Historical notation	Current counterpart
Variants of the chain ordering (arrangements other than $c_0 \rightleftarrows C_m \rightleftarrows c^+$)	The current phase topology is the complete bidirectional K3: $c_0 \leftrightarrow C_m$, $C_m \leftrightarrow c^+$ and $c_0 \leftrightarrow c^+$. C_m is the measurement and epistemic centre; it is not a topologically mandatory intermediary. A linear notation is a historical or pedagogical shorthand
The language of "c_0 as centre / roof"	Withdrawn: c_0 is a local and repeatable phase; the centre metaphor is not a topological emphasis
The reading "black hole = c^+"	Rejected. Current: black hole $\equiv c_0$ — the author's ontological definition; the quantitative and observational bridge must be derived separately (3.2)

Historical notation	Current counterpart
"U_0 = the universe-scale threshold of the c₀ phase"	Current: U_0 is the pre-layer; the threshold lies at the boundary where the extreme phase touches the global pole — it is not the source
"Big Bang = an ordinary c₀ → Cₘ transition"	Current: the Big Bang is the joint birth of the three phases in the same constitution, when the global U_x crosses the critical threshold at the boundary of U_0

3.10 Phase-composition fractions — status record

A fraction notation with the normalization $\sum \sigma_i = 1$ for phase composition appears in the archive in two separate layers:

Layer	Notation	Status
Mixture-simplex model	Region shares σ_i, $\sum \sigma_i = 1$	Model / tool of representation — not an ontological necessity (3.6)
Realization of the master regulator	$\Phi(x) \mapsto (\sigma_0, \sigma_m, \sigma_+)$, family of phase coordinates	Formal candidate — its type is not closed

> The fraction notation does not mean "a member of three phases at the same time"; phase membership and the constraint relation between phases are separate.

For the main domain vector, the following lock is explicitly recorded in the archive:

$$x_E \equiv (z,\ a,\ \rho,\ A,\ \mathcal{S};\ \tau), \qquad t \notin x_E$$

Symbol	Meaning
x_E	The main domain vector
z, a	Redshift and scale factor
ρ, A, $\mathcal{S}$	Density, area, entropy density
τ	Formal ordering parameter
t	Physical time — not a domain input, but the Cₘ reading of the solution

Question	Answer
What does it do?	It records the status of the phase fractions and of the domain vector
Why does it do it?	Fractional notations can be misread as "being in three phases at the same time"; using time as an input also contradicts the ontology
How does it do it?	It classifies the fractions as a tool of representation; it keeps time outside the domain vector
What result is expected?	That the type of the master-regulator realization is closed
What result is obtained?	The lock "time is not an input" is recorded; the family of phase coordinates remains a formal candidate

3.11 The causality armour of c^+

The relation of c^+ to causality is protected layer by layer:

> c^+ loosens causality; it does not remove causality.

Phase	State of causality	State of measurement
c_0	Pre-measurement — causality not yet established	The concept of measurement is not admissible
C_m	Causality mandatory and ordered	Measurement mandatory
c^+	Relation exists but is **timeless**; a phase of correlation	Post-measurement freedom — not a signal channel

The locked sentence in the archive is: *"Causality is the projection, put into order by measurement in C_m, of the timeless correlations in c^+."* Within this framework, entanglement is read at most as "the C_m projection of a phase correlation"; this is a candidate interpretation, not a derivation. In this candidate reading, c^+-sourced dark-sector effects are handled in C_m through gravitational and metric channels; this does not add an internal metric or rest mass to c^+, and it does not present "interaction only through attraction" as a derived universal mechanism. The ontological identity **c^+ ≡ dark matter ≡ dark energy ≡ vacuum** is preserved; the quantitative coupling and the observational readout map are open.

SECTION 4

$X(x)$: THE DYNAMIC META-RESOLVER

4.1 Current definition

$$X(x) \;=\; \textbf{dynamic upper / meta-RESOLVER}$$

$X(x)$ **(the Dynamic Meta-Resolver):** A staged meta-resolver that **resolves** which phase regime is valid under given conditions and which states are admissible. Scalar readings can be produced from X; but X **does not by itself select** the actual physical law, the constitutive map or the physical coefficient. That selection is the open debt of a physical selector (24.1). The path the resolution follows until it reaches a reading in $\mathrm{C_m}$ is:

Context $\rightarrow$ Phase licence $\rightarrow$ X_{resolved} $\rightarrow$ ξ_k $\rightarrow$ Physical selector $\rightarrow$ $J_X/\mathcal{E}_\phi$ $\rightarrow$ $\mathrm{C_m}$ state and reading

Symbol	Meaning
Phase licence	Permission concerning which structure is defined in which phase
X_{resolved}	The resolved state of X
ξ_k	The k-th scalar reading of X, $\xi_k = \pi_k(X)$ (6.5)
Physical selector	The not-yet-found physical principle that would make the bridge unique
J_X, $\mathcal{E}_\phi$	The bridge from X to physical quantities in $\mathrm{C_m}$

Question	Answer
What does it do?	It shows what X resolves and the path from the resolution to a reading in $\mathrm{C_m}$
Why does it do it?	Reading X as "the number that determines everything" would hide the debt of the physical selector
How does it do it?	It divides the chain into stages: context → phase licence → resolved X → reading → physical selector → bridge → $\mathrm{C_m}$ reading
What result is expected?	That, once the physical selector is found, the chain closes all the way to observable values
What result is obtained?	The first stages of the chain are established ontologically; the physical selector and the bridge are open (14 no-go results, 24.1)

Properties

Property	Meaning
Single	There is one X; it is not divided into sub-X's
Phase-sensitive	It knows which phase it is in
Range-sensitive	Its output may be interval-valued
Context-sensitive	It resolves differently according to conditions
Variable arity	The number of arguments may vary with phase and regime

Property	Meaning
Deterministic	The same fully specified state gives the same output
May be recursive / compositional	It may contain sub-scales
Does not require time	It does not need internal physical time

Guarantee of determinism

$$\boxed{S_1 = S_2 \implies X(S_1) = X(S_2)}$$

Symbol	Meaning
S_1, S_2	Two fully specified states (the whole of the phase, regime and context information)

The same fully specified state gives the same resolution. "State" here covers the whole of the relevant phase, regime and context information; if the provenance record or history is physically relevant, it may be included in the definition of the state. For this reason the principle is not a Markov axiom, and it does not contradict X being "dynamic".

4.2 What X is not

$$X \neq \text{Force of Attraction } X \neq \text{gravitation } X \neq \text{metric } X \neq \text{a single scalar } X \neq \text{a logistic function}$$

In addition, X:

- **is not a row of the phase-parameter matrix**; it is the **meta-resolver** of the matrix,
- **is not the average or the sum of properties**,
- **is not confined to the interval** $[0, 1]$,
- **is not merely a permission filter**; filtering is one of the things it does, not its definition,
- is **not a carrier of force or energy**.

The historical logistic kernel

The following form is found in the archive:

$$X(u) = \frac{1}{1 + e^{-s(u - u_t)}}, \qquad \frac{dX}{du} = s\, X(1 - X)$$

Symbol	Meaning
u	Historical process coordinate
s	Steepness of the transition
u_t	Transition point

Question	Answer
What does it do?	In the old texts it modelled X as a smooth transition curve between 0 and 1

Question	Answer
Why does it do it?	To represent phase transitions with a simple, computable phenomenological curve
How does it do it?	With the logistic (sigmoid) function and its differential equation
What result is expected?	Imitation of transition behaviour at the model level
What result is obtained?	**It is a historical / phenomenological scalar kernel; it is not the current ontological definition.** $X(u) \neq X(x)$; the two must not be confused. "The logistic fundamental X" is retired

Historical duality record — a formal candidate awaiting decision

The early main archive contains the following "matter–texture / time–geometry" duality form:

$$\Phi(c^+, C_m, c_0) = \mathrm{T}(z^+, z_m, z_0)$$

The dynamic-balance form in the archive is:

$$\Phi\, e^{+i\pi} = \mathrm{T}\, e^{-i\pi}$$

Symbol	Meaning
Φ	The historical "matter–texture" side; its type is incomplete
T	The historical "time–geometry" side; its type is incomplete
z^+, z_m, z_0	Historical phase coordinates

Question	Answer
What does it do?	It proposes a duality between matter and geometry
Why does it do it?	It was an early attempt to capture the symmetry between phases in a single equation
How does it do it?	It equates the two sides; in the second form it adds opposite phase factors
What result is expected?	That it turns into a law of balance once the types are completed
What result is obtained?	It is not the current definition of X; Φ and T have no types. Since $e^{+i\pi} = e^{-i\pi} = -1$, the second form reduces algebraically to just $\Phi = \mathrm{T}$; it derives no new dynamical law. The Φ here is not identical with Φ_χ in Section 17. The record is preserved as historical and is not elevated to a postulate

4.3 A programming analogy

A single analogy is used to convey the behaviour of X:

```
X = *Resolve(phase, regime, range, conditions, ...);
```

That is, X is not a **value** but **the result of a resolution call**: it takes the context and returns what is valid in that context.

This is ONLY a programming analogy — it is not a mathematical definition.

4.4 The determinants of X — not a closed list

The working list contains quantities such as density, curvature and entropy density. But:

> The set of arguments is NOT CLOSED. X CANNOT BE NARROWED to a fixed functional form.

Speed, scale, total mass, charge and structural arrangement may also play a role. Moreover, **different sets of arguments** may be meaningful **in different phases**; this is the property of variable arity.

The final mathematical type is deliberately open

> The FULL MATHEMATICAL REALIZATION of X has been DELIBERATELY LEFT OPEN.

This is not an admission of a deficiency but a **design decision**: an early choice of form would imprison the framework within the limits of that form.

4.4a The formal resolver interface — without locking the type early

The conceptual meaning of X is clear; its final mathematical type, by contrast, is deliberately left open. These two situations must not be confused. From the point of view of types, the safest minimal interface can be written as a relation:

$$\mathrm{Resolve}_X(\phi, \mathcal{S}, \mathcal{I}; \mathcal{O})$$

The rule of **deterministic output for the same full state** is written as:

$$\boxed{\mathrm{Resolve}_X(s, o_1) \wedge \mathrm{Resolve}_X(s, o_2) \implies o_1 = o_2}$$

A future dependent-function realization could take the form:

$$X : (\phi : \mathrm{Faz}) \to \mathrm{Bağlam}(\phi) \to \mathrm{Çözülmüş}(\phi)$$

Symbol	Meaning
ϕ	Phase
$\mathcal{S}$	Full state / context of conditions
$\mathcal{I}$	Inputs from the relevant family of properties
$\mathcal{O}$	The resolved output
s, o_1, o_2	A state and two possible outputs corresponding to it

For an incompletely defined state or a interval-valued input, the output may also be a range or a relation; for a fully defined admissible state, by contrast, the resolver behaves like a function:

```
incomplete information                → relation / range
fully specified admissible state      → deterministic resolution
bidirectionality of the transition    → need not be an exact inverse
```

Question	Answer
What does it do?	It makes X formally writable without locking its final type
Why does it do it?	An early functional form limits the framework; but with no interface at all, formal checking cannot be done
How does it do it?	It writes X as a relation; it sets the rule of deterministic output for a full state; it allows range output under incomplete information
What result is expected?	That a stronger realization, such as a dependent function, can be chosen later
What result is obtained?	The relational interface and the determinism rule are established; the dependent-function form is a formal candidate, not the only mandatory type of the current ontology

Equation set — variable arity and fixed-point closure

The arguments of X (density ρ, curvature $\mathcal{R}$, entropy $\mathcal{S}$) **require a metric**; but the metric exists only in $\mathrm{C_m}$. Moreover, the old structure was circular: X determined the phase regime, the phase regime the metric, and the metric the arguments of X. This set addresses both problems together:

$$X : \bigsqcup_p \mathcal{A}_p \rightharpoonup \text{Çözüm}, \qquad \pi_k : \text{Çözüm} \to \text{Aralık}(D_k) \qquad X^* = \mathcal{F}_X(\mathcal{A}[X^*])$$

In the logistic toy model, the fixed point is studied as follows:

$$x = \sigma(ax + c), \quad h(x) = \operatorname{logit}(x) - ax - c, \quad x_\pm = \tfrac{1}{2}\left(1 \pm \sqrt{1 - 4/a}\right)$$

$$a \le 4 \Rightarrow \text{a single root (sufficient condition);}$$

$$a > 4 : \ \text{three roots} \iff c \in \big(g(x_+),\, g(x_-)\big), \ \ g(x) = \operatorname{logit}(x) - ax$$

Symbol	Meaning
$\mathcal{A}_p$	The set of arguments defined in phase p
$\bigsqcup_p$	Disjoint union over the phases
$\rightharpoonup$	Partial resolution relation: X returns not a range but a resolved state
Çözüm	The type of resolved states
π_k, D_k	The k-th readout projection and its value domain; it is the reading that is interval-valued, not X itself
$\mathcal{F}_X$	The resolving function of X
X^*	Fixed point
σ	Logistic function
$a = \beta k$	Gain of the logistic feedback
$c = \beta(b - u_0)$	Bias
$h(x)$	The zero function of the fixed-point equation
$x_\pm$	The critical points of h

Question	Answer
What does it do?	It ensures that arguments requiring a metric are used only in the phase in which they are defined, and that the circular definition closes
Why does it do it?	Operating with arguments that are undefined in c_0 and c^+, and the circle "X determines the metric, the metric determines X", produced inconsistency
How does it do it?	It changes the argument set of X according to phase (variable arity); it writes the circle as a fixed-point equation, that is, as a staged resolution; in the logistic toy model it studies how many solutions there are
What result is expected?	That undefined arguments are blocked at the type level; that the circle is brought into closed form
What result is obtained?	Variable arity is established; the staged resolver is the core preference; the logistic fixed point is a model; "the logistic fundamental X" and "$a \leq 4 \iff$ a single root" are retired ($a \leq 4$ is only a sufficient condition). The existence and uniqueness of a solution are separate from the convergence of the chosen algorithm: despite a single fixed point, a direct iteration may be locally unstable ($f(x) = \sigma(4 - 8x)$, $x_* = 1/2$, $f'(x_*) = -2$). General algorithmic convergence for X awaits derivation

4.5 Readout faces

X is a single object; it shows different faces according to how it is accessed.

Face	What it is
Basic state face	The resolved face of the phase and context state; producing a physical constant or an observable value additionally requires a selector, a bridge and a readout law
Domain projection	Its reflection onto a particular physical domain
Reading	The value actually measured in C_m

Domain projections are not a closed list

Projections onto particular domains (such as nuclear, cosmological, chronometric) can be defined. But:

> These projections are NOT SEPARATE FUNDAMENTAL X 's, and they do NOT form A CLOSED CANONICAL LIST.

There is a single X. The projections are shadows of the same X in different domains.

The limit of the readout layer

> A calculation made in the readout layer CANNOT PRODUCE A FUNDAMENTAL NUMBER.

For example, setting up a definitional identity between two quantities of the readout layer is not "deriving" one from the other. The unknown does not close; it **changes place**.

The historical B-hypothesis — reducing X to a reading

In the archive's discussions of an action principle there is a **B-hypothesis** of the form "X is not a fundamental field but a post-solution observable map". This is a sourced model option; it is not the current core definition.

$$X \text{ is not merely a reading.}$$

The current architecture preserves the basic-state, domain-projection and reading faces of X together. The B-hypothesis could be tested later in a model comparison; but if it reduces X to the readout layer alone, it conflicts with the core definition of the resolver.

4.6 X is a supra-phase meta-coordination structure; it is not a physical carrier

$$\text{MetaCrossPermission}(X) = \text{true}\,, \qquad \text{MetaCrossPermission} \neq \text{TransportPermission}$$

Symbol	Meaning
MetaCrossPermission	Permission for inter-phase meta-coordination (specific to X)
TransportPermission	Permission for a quantity to be physically transported through a gate (13.1a)

The supra-phase status of X is NOT DERIVED SOLELY from its being dimensionless.

Dimensionlessness is not a general theorem for physical transport; whether a quantity can be transported depends on the transport permission of 13.1a. X is not a physical carrier but a meta-coordination structure; dimensionlessness may be a **consequence** of this character, not its cause.

Question	Answer
What does it do?	It defines how X can "pass" between phases
Why does it do it?	That X is supra-phase could be confused with a physical quantity being transported through gates
How does it do it?	It defines meta-coordination permission as a permission separate from physical transport permission
What result is expected?	That "smuggling" C_m-specific quantities through X is prevented
What result is obtained?	The distinction has been formally encoded: meta-crossing is not physical transport

4.7 The phase landscape

The vertices of the phase map are **regime examples** of X; they are not fixed anchor values. Approaching a vertex means that the locking effect of that regime increases.

The vertices are NOT FIXED; they are PHASE-REGIME EXAMPLES of the dynamic X .

Most physical structures — planets, atoms, electromagnetic phenomena, biological structures — are found not at any vertex but **in the interior region under the influence of the three phases** (12.3).

4.8 The recursive macro-object reading

X can be thought of as a **recursive descriptor** that summarizes the context in which an object is found. It is one thing for an atom; another for the molecule containing it; another again for the cell containing the molecule. At each scale it is resolved anew, and it **contains the sub-scales but is not reduced to them**. This is an **analogy**: it gives structural intuition, it does not produce results.

SECTION 5

THE PHASE-PARAMETER MATRIX

5.1 Status

The phase-parameter matrix is one of the CORE structures of the framework.

This matrix is not an option, a "risky extension" or merely a tool of presentation; as a methodological decision, it belongs to the core. The **correct** side of the analogy with Mendeleev's periodic table is this: Mendeleev did not discover the elements, he **ordered** them; and the order revealed **gaps**. The phase-parameter matrix likewise orders physical quantities according to phase and makes visible the place of bridges not yet known.

5.2 Main architecture

$$\text{PropertyFamily} \times \text{Phase} \longrightarrow \text{Range} \text{ or } \perp$$

Symbol	Meaning
PropertyFamily	A family of quantities such as time, metric, energy, density
Phase	c_0, C_m or c^+
Range	The band of values the quantity takes in that phase
$\perp$	The mark that the quantity is not admissible in that phase ($\perp_0$ or $\perp_+$)

Each cell gives the state of a property family in a particular phase: either a range, or the mark **not admissible** in that phase.

Question	Answer
What does it do?	It arranges the state of every family of physical quantities in every phase in a single table
Why does it do it?	Without recording which quantity is defined in which phase, C_m concepts leak into c_0 and c^+
How does it do it?	To each combination of property family and phase it assigns either a range or a mark of absence
What result is expected?	That the empty cells show which bridges must be derived
What result is obtained?	The architecture is core; for most cells the numerical bridge has not yet been derived

Where is X in the matrix?

X is NOT A ROW of the matrix. X is the META-RESOLVER of the matrix.

The matrix does not contain X; X resolves the matrix. This is why there is no X row in the table of 5.4; X is the resolver information above the table.

5.3 Cell types — five different "empties" and one state of knowledge

Symbol	Meaning
0	The real numerical zero
$[0, 0]$	A valid, zero-width physical range
`None`	No stamp was produced in this transition (NoStamp ≠ NoTransition)
$\bot_0$	In c_0: the concept is **not yet established** — undefined
$\bot_+$	In c^+: the concept is **dissolved** — no longer present in the language of that phase

These must not be confused with one another. For example, internal physical time in c_0 is $\bot_0$, not 0; even saying "zero time has passed" requires a concept of time. In c^+, time is $\bot_+$: the structure that had been established in C_m is dissolved there.

Gathering the two absences under a single $\bot$ loses information, because **"not yet" and "no longer" are not the same thing.** This distinction is a direct consequence of the author's ruling that time, three-dimensional space and the limit c are valid only in C_m — undefined in c_0, dissolved in c^+. The distinction has been formally verified and enforced by a phase-indexed value type: a C_m-specific value cannot be constructed as "present" for c_0 or c^+.

$$\boxed{\bot_0 \neq \bot_+ \neq 0 \neq [0, 0] \neq \texttt{None}}$$

Apart from these, there is one more situation: **missing data.** When we cannot measure or do not know a quantity, this does not mean that the quantity is ontologically absent; it is a **state of knowledge**. Missing data is none of the five "empties" above and is kept on a separate axis.

Reading rule: When $\bot$ appears alone in the document, it is read as $\bot_0$ in a c_0 context and as $\bot_+$ in a c^+ context.

5.3a The kind of a quantity and its dimension are not the same thing

The physical dimension of a quantity (mass, length, time) and what kind of quantity it is are different things. An old record said "mass is carried in c^+"; this sentence confuses two things. The **dimension label** of mass can be seen in every context as a phase-independent label; but **rest mass** in C_m is a C_m-specific quantity and is not carried into c^+. Likewise, the metric is not derived from a dimension label; where the metric is defined is stated separately: only in C_m.

Equation set — two absences, phase-indexed value, global nodes

The author's ruling is: *"Time, three-dimensional Euclidean–flat space, the phase boundary c and similar fundamental definitions are valid in C_m. These structures are undefined in c_0 and dissolved in c^+."* A single $\bot$ could not distinguish these two **ontologically different** absences. In the formal core, the distinction is encoded as follows:

```
inductive CmOnlyValue (α : Type) : Phase → Type
  | undefined0    : CmOnlyValue α .c0
  | presentCm     : α → CmOnlyValue α .Cm
  | dissolvedPlus : CmOnlyValue α .cp
```

Symbol	Meaning
$\perp_0$ / `undefined0` / `preAdmissible`	c_0: the structure is **not yet established**
$\perp_+$ / `dissolvedPlus` / `dissolved`	c^+: the structure is **dissolved**
`presentCm`	A value present in C_m
`CmOnlyValue α p`	Phase-indexed value type: it can carry a real value only in C_m
`Knowledge`	Epistemic state: `observed` · `missingData` · `imputed`
`GlobalNode`	U_0, U_x, U_+
`isPole`	U_0 and U_+ are poles; U_x **is not**
`MetricAdmissible p`	The metric is admissible only in C_m

Question	Answer
What does it do?	It formally separates the two ontological absences, missing data and the global nodes from one another
Why does it do it?	A single mark of absence erased the difference between "not yet established" (c_0) and "dissolved" (c^+); missing data could also be mistaken for ontological absence
How does it do it?	It builds a phase-indexed type: in c_0 only "undefined", in c^+ only "dissolved", and in C_m a real value can be constructed; it keeps the state of knowledge on a separate axis
What result is expected?	That constructing a C_m value in the wrong phase is impossible at the compiler level
What result is obtained?	The two ontological absences and the phase-indexed value have been formally verified as the core preference; "U_x is not a pole" has been verified

5.4 Extended example matrix

The following table is **not a final numerical table**. Its purpose is to show the scope of the property families and their kinds in each phase. If a cell has no numerical value, the reason is not an omission but that the numerical bridge has not yet been derived.

Property family	Notation	c_0	C_m	c^+	Ontological note
Internal physical time	$T(x)$	$\perp_0$	Range / physical time	$\perp_+$	Time is specific to C_m
Causality / speed family	$C(x)$	C_m speed language $\perp_0$	Band $0 < v < c$ (core membership ruling); $v = c$ liminal shared boundary	C_m speed language $\perp_+$	c^+ is a beyond-c regime; C_m-type $dx/dt > c$ does not apply (3.4)
Force of Attraction projection family	$G(x)$, $g(x)$	Phase regime	Measurable reading	Upper-phase regime	$g(x) \neq g_{\mu\nu}$
Metric	$g_{\mu\nu}$	$\perp_0$	Defined	$\perp_+$	Only C_m

Property family	Notation	c_0	C_m	c^+	Ontological note
Topology / dimension	$d(x)$	Non-metric	C_m geometry (3D Euclidean base space)	Non-metric	The question "how many dimensions?" requires separate formalization
Energy	$e(x)$	Range / phase-specific meaning	Measurable	The C_m energy type is not carried directly; sealed share	Accounting at the level of U_x (16.7a)
Scale	$s(x)$	Range	Range	Range	May be one of the context inputs of X
Entropy / order	$S(x)$	Pre-temporal meaning	Thermodynamic reading	Meaning as timeless record	The three are not raw-equal to one another
Regulation / reporting	$\Gamma(x)$	Produces no internal time	Family of time / readout coefficients	Produces no internal time	Not identical with X
Impedance	$Z(x)$	Model-dependent	May be a measurable bridge	Model-dependent	Open to the channel bridge
Momentum	$p(x)$	Standard C_m type $\perp$ / open	Standard reading	Standard C_m type $\perp$ / open	Not carried unchanged between phases
C_m metric length	L_{C_m}	$\perp_0$	Range	$\perp_+$	"Diluted length" is not used for c^+
Density	$\rho(x)$	Collective single structure; $\rho_{c_0} \leq \rho_P$	Physical density	C_m matter density $\perp_+$	There is no "infinite density" for c_0
Matter	$m(x)$	Metric-gapless single structure	Differentiated matter	C_m matter support dissolves	One of the strongest phase distinctions
Empty space / vacuum	—	Metric-gapless single structure	"Empty-space" reading (including inside the atom)	$c^+ \equiv$ vacuum	Every place that C_m reads as empty space is c^+ (3.4)
Information	$I(x)$	Potential / pre-temporal	Measurable record	Meaning as sealed provenance	A global conservation theorem is open
Record / provenance (registry / provenance)	$R(x)$	Not an archive	May be an event source	Role of sealed archive	Record = not an entity
Force / field family	$F(x)$	Phase regime	Effective interactions	Phase regime	Projection derivation from the Force of Attraction is open
Potential / scaffold	$\Phi(x)$	Model / scaffold	C_m effective-field-theory scaffold	Model / scaffold	$X \neq \Phi$

Property family	Notation	c_0	C_m	c^+	Ontological note
Gauge / kinetic	Z_B, Z_W, Z_G	Reserved programme	C_m effective-field reading	Reserved programme	Standard Model machine-1 target
Couplings	$\alpha_i(x)$	Bridge open	Effective constants	Bridge open	No numerical derivation
Temperature	$\mathcal{T}(x)$	$\perp_0$	Thermodynamic reading	$\perp_+$	0 and $\perp$ must be separated; $c_0 \neq$ absolute zero
Heat	$Q(x)$	$\perp_0$	Thermodynamic reading	$\perp_+$	"No heat" is not automatically $T = 0$
Frequency / clock	$\nu(x)$	Internal frequency $\perp_0$	Measurable	Internal frequency $\perp_+$	A physical period requires C_m time
Pressure / stress	$P(x)$	Meaning as phase limit	Energy–momentum reading	C_m pressure type $\perp$ / open	Not carried by itself to the outer phases
Coherence	$\mathcal{C}(x)$	Collective	Quantum / classical regimes	Meaning as coordination	The BEC analogy is not literal
Measurement	$\mathcal{M}(x)$	Direct measurement $\perp_0$	Direct measurement	Direct measurement $\perp_+$	C_m is the epistemic centre
Archive state	$A(x)$	Not an archive	Source of records	Sealed-provenance phase	c^+ is not an oracle of the future
Accessibility / threshold	$\mathcal{A}(x)$	Range	Range	Range	May be tied to transition permission

Some of these rows have only the status of a **reserved property family**. That the matrix is core does not mean that every row has a numerical law today.

5.5 The list of rows is open

> The METHODOLOGICAL DECISION is core; the NUMBER and ORDER OF ROWS are open.

Which property families the matrix will contain, and in what order they will be arranged, is not closed. This is not a deficiency; it follows from the table being **a living working tool**.

Numerical values in historical compilations

Numerical coefficients coming from archive surveys do not enter the matrix unless directly verified. Constants coming from a retired line **cannot be brought back** (Section 21).

SECTION 6

THE RANGE FORMALISM

6.1 Basic syntax

$$\boxed{P \in [P^{-},\, P^{+}]}$$

Symbol	Meaning
P	Any physical quantity
P^{-}, P^{+}	Lower and upper bound

Physical numerical expressions are interval-valued. This is a rule about **how the framework writes** quantities. Measurements and model parameters alike actually come as a band; rather than hiding this band, Evertophy carries it explicitly.

6.2 A zero-width range is fully valid

$$\boxed{[P,\ P] \text{ is a FULLY VALID, STATIC and DETERMINISTIC physical range.}}$$

This is the most frequently misunderstood point of the framework and must be stated explicitly:

Misreading	What is correct
~~"Point-valued physics is forbidden"~~	Interval-valued syntax is used; $[P, P]$ is legitimate
"$[P, P]$ ~~is a special threshold case~~"	**No** special mechanism is required
"$[P, P]$ ~~is a Heaviside or structural singularity~~"	There is **no** such necessity
~~"Every constant varies with X"~~	A quantity **may remain** $[P, P]$ in a given regime

$$\boxed{\text{Being interval-valued } \not\Rightarrow \text{ being time-variable.}}$$

Writing a quantity in range syntax **does not imply** that it varies. A static and deterministic constant is written as $[P, P]$, and this is entirely correct.

6.3 Three kinds of range

Symbol	Name	What it is
ΔX_{acc}	**Acceptance range**	The range permitted by the framework
ΔX_{pred}	**Prediction range**	The range **derived** from the framework
ΔX_{obs}	**Observation range**	The range coming from the data

The falsification rule operates only between prediction and observation:

$$\boxed{\Delta X_{\text{pred}} \cap \Delta X_{\text{obs}} = \varnothing \implies \text{falsified.}}$$

Symbol	Meaning
$\cap$	Intersection
$\varnothing$	The empty set

Question	Answer
What does it do?	It defines when a prediction is falsified
Why does it do it?	If it remains unclear which ranges are to be compared, a disagreement between two observations, or the width of the acceptance range, could be mistaken for falsification
How does it do it?	It compares the derived prediction band with the observation band; if the intersection is empty, the prediction is falsified
What result is expected?	An explicit, previously defined criterion of falsification
What result is obtained?	The rule is canon; disagreement between two **observation** ranges does not falsify a theory. Hard rejection is given only for an empty intersection (21.6)

6.3a What is a range and what is a constant — layers

The Range Formalism does not mean "turn everything into a range". As the author emphasizes, some equations use a constant rather than a range, and this is not an error. What is correct is to know to which layer each magnitude belongs:

Layer	Example	How it is carried
Structurally exact	π, the number of phases 3, counts	Exact — not turned into a range
Definitional point	$c_{C_m} = [c, c]$	Zero-width range $[P, P]$
Uncertain or variable physical parameter	σ, β, k, ΔE, η_{clock}; well width, couplings, energy spread	Range or joint feasibility set
Epistemic	Measurement uncertainty	Range or set
Extended	If the energy spread contains zero ($\Delta E \ni 0$), the time bound extends to $+\infty$	Extended endpoint
Phase-absent	Time in c_0 and c^+	$\perp_0$ / $\perp_+$

A parameter that is genuinely taken as constant remains constant, with this assumption written explicitly; if necessary, it is carried as $[P, P]$. Using a constant is not, by itself, a deficiency, a failure or grounds for partial success.

6.4 The prohibition of vacuity

$[0, \infty)$ is a valid extended range; but if it does not narrow the prior domain, it carries no predictive power.

The problem is not that such a range is invalid, but that **it gives no information**: it "fits" every dataset and therefore does not count as a distinctive prediction band. A prediction range must be **derived** and **meaningfully narrower than the prior range**.

6.4a Reliability of range arithmetic

The basic operations of range arithmetic have been formally proven **in the exact integer band layer**. Addition, negation, intersection and multiplication are safe: if the true values lie inside the ranges, the result lies inside the resulting range. For multiplication, the four-corner rule holds:

$$x \in [a,b],\ y \in [c,d] \ \Rightarrow\ xy \in \big[\min(ac,ad,bc,bd),\ \max(ac,ad,bc,bd)\big]$$

Symbol	Meaning
x, y	True values
$[a,b]$, $[c,d]$	The ranges containing them
`Band`	$\langle lo, hi, \text{valid} : lo \le hi \rangle$ — a range with a proof of validity
`mem x b`	$lo \le x \le hi$
`cmin`, `cmax`	The smallest and largest of the four corner products
`ZeroExcluded b`	$0 < lo$ or $hi < 0$ — an invertible range
`Ext`	Endpoints $-\infty$ · finite · $+\infty$

All three safeguards are established: a range containing zero cannot be inverted; the empty set and $[0,0]$ are different; $+\infty$ is an endpoint, not an absence.

Question	Answer
What does it do?	It guarantees that calculation with ranges is safe, that is, that it never leaves the true value outside
Why does it do it?	If the validity of a range ($lo \le hi$) and the soundness of the operations are not proven, all prediction bands become unreliable
How does it do it?	It builds a band type that carries a proof of validity; it formally proves addition, negation, intersection and four-corner multiplication in the exact integer layer
What result is expected?	A complete range algebra: exact inversion and division, a full algebra with extended endpoints, tracking of dependencies between variables
What result is obtained?	The basic exact arithmetic is the core preference and is proven; full range arithmetic is partly established. This is not an ontological debt but a debt of library engineering

6.5 Sensitivity

Since X is not a single number, the sensitivity of a quantity to X cannot be written directly in the form $d\ln c/dX$; the derivative is taken through a particular reading of X:

$$S_c^{(k)} \equiv \frac{\partial \ln c}{\partial \xi_k} \in [S^-, S^+], \qquad \xi_k = \pi_k(X)$$

For a transition edge, the reading is written with the same discipline:

$$\xi_{ij} \in \left[\xi_{ij}^{\mathrm{crit},-},\ \xi_{ij}^{\mathrm{crit},+}\right] \ \text{(point reading)} \qquad B_{\xi_{ij}} \cap \left[\xi_{ij}^{\mathrm{crit},-},\ \xi_{ij}^{\mathrm{crit},+}\right] \neq \varnothing \ \text{(band reading)}$$

Symbol	Meaning
X	Non-scalar, staged resolver ($X_{\mathrm{prior}} \to X_{\mathrm{resolved}} \to X_{\mathrm{read}}$)
π_k	The k-th readout projection
ξ_k	The k-th scalar reading of X
$S_c^{(k)}$	The sensitivity of c to ξ_k
ξ_{ij}	The reading specific to the edge $i \to j$
$\xi_{ij}^{\mathrm{crit},\pm}$	The critical reading band of that edge
$B_{\xi_{ij}}$	The band, if the reading itself is a band

If $S \approx 0$, the quantity is practically constant in that regime; this is fully consistent with the framework.

The core ruling for the speed of light is this: in $\mathrm{C_m}$, c is a definitional point interval, $c_{C_m} = [c, c]$; consequently, in the core the sensitivity of c to any reading is zero. "A varying speed of light" can be treated only as an effective model quantity, and can be tested only through **dimensionless** observables such as the fine-structure constant; a change in the choice of units does not count as an observation.

Reading rule: Historical or model expressions in the document in which a scalar operation (derivative, inversion, logarithm, limit) is applied to X are not core statements but historical models or not-yet-established bridges, until a reading $\xi = \pi(X)$ is explicitly defined. Merely replacing the letter X by ξ does not count as establishing the physical bridge. The problem is not that a vector or tensor derivative cannot be taken in general, but that **the differential structure required for the fundamental X has not been given**.

Question	Answer
What does it do?	It ensures that every scalar operation depending on X is carried out through a defined reading
Why does it do it?	The old canon sometimes compared X like a single number ($X(x) > X(0)$) and took its derivative ($d \ln c / dX$); for a multi-component object these operations are undefined
How does it do it?	It writes every operation through a projection $\xi_k = \pi_k(X)$; for transition conditions it uses the edge-specific reading
What result is expected?	That, once a physical projection is chosen, sensitivity and transition conditions acquire quantitative form
What result is obtained?	The projection discipline is a core principle; the exact type of X and the physical projection are open

6.6 The sector hierarchy must be derived

> Which sector is CONSTANT and which is VARIABLE CANNOT BE ASSIGNED — it MUST BE DERIVED.

Otherwise the formalism accommodates every result and forbids nothing.

6.7 Range-safe sealing

$$\mathrm{Seal}\big([p^-,\,p^+]\big) \;=\; \big(\mathrm{rid},\;[p^-,\,p^+],\;\mathrm{stamp}\big)$$

Symbol	Meaning
Seal	The sealing operation
rid	The unique identity of the record
$[p^-, p^+]$	The physical content of the record (a range)
stamp	The image of the transition in the stamp monoid (Section 14)

Question	Answer
What does it do?	It defines how interval-valued content is sealed
Why does it do it?	If sealing forced the content to a single point, it would contradict the Range Formalism
How does it do it?	It gives the record a unique identity, leaves the content as a range and adds the stamp
What result is expected?	That the record identity is unique and the physical content honestly remains a band
What result is obtained?	The record identity is unique; the content may remain a range; $p^- = p^+$ is not forced

SECTION 7

THE ONTOLOGY OF TIME

7.1 The only home of physical time

EMERGENT PHYSICAL TIME EXISTS ONLY IN C_m.

c_0 is the pre-temporal (pre-emergent) potential / core phase: time there is not yet established. c^+ is the atemporal upper / archive phase: the time established in C_m is dissolved there. In neither phase are the internal clock, speed, duration or physical flow variables of C_m used.

t_{c_0} and t_{c^+} are not variables of the core ontology: $T(c_0) = \perp_0, \qquad T(c^+) = \perp_+$

The expression "$dt = 0$" may be used in both phases only as a pedagogical shorthand; the ontologically correct statement is **"physical time is not admissible in this phase"**.

Author's ruling — the direction of time. Time exists only in C_m and is unidirectional; otherwise causality would disappear, because in the matter phase everything stands in a cause–effect relation. Phase transitions are bidirectional; the channel of time sealing / record, by contrast, is unidirectional ($C_m \to c^+$), and once sealing has taken place the record is fixed (13.1, 14.1).

gate: $c_i \rightleftarrows c_j$ (bidirectional), record channel: $C_m \longrightarrow c^+$ (unidirectional; seal fixed)

Symbol	Meaning
c_i, c_j	Any two of the three phases (complete bidirectional triangle, 3.5)
$\rightleftarrows$	Bidirectional phase gate
$C_m \longrightarrow c^+$	Unidirectional record / sealing channel

Question	Answer
What does it do?	It defines where time exists and why it is unidirectional
Why does it do it?	Although transitions between phases are bidirectional, the source of the unidirectional experience of time must be explained
How does it do it?	It takes irreversibility away from the transition and assigns it to the record channel: the transition is bidirectional, the record is unidirectional in the $C_m \to c^+$ direction and fixed
What result is expected?	That the thermodynamic arrow of time and causality are quantitatively related to this record structure
What result is obtained?	That time exists only in C_m and is unidirectional, and the direction of the record channel, are author's rulings; the quantitative derivation is open (7.8, 16.7)

7.2 The production of time — the core scaffold

The most general working form preserved in the core is:

$$\boxed{dt \;=\; \Gamma\, \mathcal{G}_{C_m}\, d\tau}$$

Symbol	Meaning
dt	The interval of physical time read in Cm
Γ	The coefficient of the Cm readout / reporting-regulation family
$\mathcal{G}_{C_m}$	A not yet closed object representing the structure of measurable change and differentiation within Cm
τ	**Formal ordering / parametrization variable**; it is not a hidden fundamental physical time

$$\boxed{\tau \neq \text{fundamental physical time}}$$

Question	Answer
What does it do?	It writes how time is read from distinguishable change in Cm
Why does it do it?	Time is not a fundamental dimension but an emergent reading specific to Cm; a general form for this is needed
How does it do it?	It ties the time interval to an ordering parameter, as the product of the structure of change in Cm and a readout coefficient
What result is expected?	That time is produced quantitatively once the microphysical definition of $\mathcal{G}_{C_m}$ is established
What result is obtained?	The scaffold is preserved in the core; a unique microphysical definition of $\mathcal{G}_{C_m}$ is open

7.3 Normalized realization — model level

When dimensional accounting is required, the following normalized form can be used:

$$dt \;=\; \tau_0\, \tilde{\Gamma}\, \mathcal{G}_{C_m}\, d\lambda$$

$$[\lambda] = 1, \qquad [\tilde{\Gamma}] = 1, \qquad [\tau_0] = T, \qquad \Gamma \equiv \tau_0 \tilde{\Gamma} \;\Rightarrow\; dt = \Gamma\, \mathcal{G}_{C_m}\, d\lambda$$

Symbol	Meaning
$[\cdot]$	Physical dimension
T	The dimension of time
λ	Dimensionless ordering / parametrization variable; it is not physical time
$\tilde{\Gamma}$	Dimensionless readout coefficient
τ_0	The time scale of the realization; it carries the dimension of time

In a Cm quantum / open-system model, the structure of change can be written with a density-matrix norm:

$$\mathcal{G}_{C_m} \overset{\text{model}}{=} \left\| \frac{d\rho_{C_m}}{d\lambda} \right\|$$

Symbol	Meaning
ρ_{C_m}	The Cm density matrix (a model object; not a core primitive)

Symbol	Meaning
$\|\cdot\|$	Candidate norms: trace norm, Hilbert–Schmidt norm, operator norm

Question	Answer
What does it do?	It gives a dimensionally consistent realization of the time scaffold
Why does it do it?	If it is unclear in which term the dimension of time is carried, the equation becomes dimensionally inconsistent
How does it do it?	It gives the dimension only to τ_0; it keeps λ and $\tilde{\Gamma}$ dimensionless; in a quantum model it writes the structure of change with the norm of the change of the density matrix
What result is expected?	That the norm is selected by the physical bridge and by a test of parametrization independence
What result is obtained?	The dimensional accounting is correct; if Γ is taken as dimensionless, dt does not carry the dimension of time — this case is recorded in the formal type system as a negative test that does not compile. This realization is **one** realization of the core scaffold, not its only mandatory form; no norm has been selected

7.4 Parametrization independence — formal candidate

In a realization, an object resembling arc length can be constructed:

$$s(\lambda) = \int \left\| \frac{d\rho_{C_m}}{d\lambda} \right\| d\lambda$$

This object can be constructed to be invariant under order-preserving reparametrizations. It provides a useful consistency test; but it does not make the chosen norm, or the ontological status of ρ_{C_m}, unique.

Active achromaticity — a Lorentz-compatible readout constraint

Independence from the energy of the measurement probe is not entirely historical. Under the same physical state $\mathcal{S}$ and the same admissible C_m readout regime:

$$\boxed{\left.\frac{\partial X}{\partial E_{\text{probe}}}\right|_{\mathcal{S}} = 0, \qquad \left.\frac{\partial \Gamma}{\partial E_{\text{probe}}}\right|_{\mathcal{S}} = 0}$$

Symbol	Meaning
E_{probe}	The energy of the measurement probe
$\mathcal{S}$	The physical state held fixed

$$\boxed{\text{active readout constraint} \neq \text{the fundamental definition of } X}$$

Note on the derivative structure: Since X is not a scalar, the derivative presupposes a differentiable structure on the value space of X. Two levels that do not require this structure are distinguished — achromaticity **at the resolver level** and achromaticity **at the level of selected readings** — and the two are not unconditionally equivalent:

$$\underbrace{X(\mathcal{S}, E_1) = X(\mathcal{S}, E_2)\ \ \forall\, E_1, E_2}_{\text{resolver level}} \implies \underbrace{\left.\frac{\partial \xi_k}{\partial E_{\text{probe}}}\right|_{\mathcal{S}} = 0\ \ \forall k}_{\text{reading level}} \qquad (\xi_k = \pi_k(X) \text{ differentiable})$$

The converse is invalid in general: $X(E) = (0, E),\ \ \pi_1(a, b) = a\ \Rightarrow\ \xi_1 = 0$ constant, but $X(E)$ varies

Symbol	Meaning
E_1, E_2	Two different probe energies
ξ_k	A differentiable reading of X
$\pi_1(a, b) = a$	The projection in the counterexample: it reads only the first component

Question	Answer
What does it do?	It also writes the achromaticity constraint in a form that does not require a derivative structure
Why does it do it?	Without defining what a derivative means for a non-scalar object, the constraint is not well defined
How does it do it?	It states that energy independence at the resolver level implies the energy independence of all differentiable readings; it shows with a counterexample that the converse is invalid in general. Equivalence in the reverse direction can be established when the family of readings separates resolutions (the projections are jointly injective) and under suitable connectedness / differentiability conditions
What result is expected?	A constraint consistent at the type level with bounds on energy-dependent delays (LHAASO / GRB 221009A)
What result is obtained?	The content of the constraint does not change; its **well-definedness** is secured. LHAASO-type observations test only selected readings; the observational bound is therefore a constraint at the reading level, and the constraint at the resolver level is its stronger (sufficient) form

Question	Answer
What does it do?	It requires that the ontological resolution of the same physical state does not shift with the energy of the measurement probe
Why does it do it?	A resolution depending on the probe's energy would produce effects that violate Lorentz invariance and contradict measurements
How does it do it?	At fixed state, it holds the derivative of X and of the readout coefficient with respect to the probe energy at zero
What result is expected?	That bridge models do not produce forbidden effects such as an energy-dependent difference in the speed of light
What result is obtained?	It is preserved as an active C_m readout / Lorentz-compatibility constraint; it does not mean that the probe energy is irrelevant in every model; it is not the definition of X

Equation set — time and the quantum threshold

The canon tied the "smallest meaningful step" of time to a quantum threshold. If this threshold is set up incorrectly, the definition of time itself becomes dimensionally inconsistent, and so does everything built on it.

$$\int \mathcal{G}\, d\tau \geq \frac{\hbar}{2} \qquad \text{(old — dimensional error, retired)}$$

$$\int \mathcal{G}_{\mathrm{FS}}\, d\lambda \geq \theta_{\min},$$

$$\Delta t \;\geq\; \Delta t_{\min} = \frac{\hbar\, \theta_{\min}}{\overline{\Delta E}},$$

$$\overline{\Delta E} = \frac{1}{\Delta t} \int_0^{\Delta t} \Delta E(t)\, dt$$

(correction; for constant ΔE, $\overline{\Delta E} = \Delta E$)

$$dt = \frac{\hbar}{\Delta E_{C_m}}\, ds_{\mathrm{FS}} \quad \text{(C-1 bridge)}, \qquad dt_{\mathrm{ET}} = \eta_{\mathrm{clock}}\, d\tau_{\mathrm{GR}},\ \ \eta_{\mathrm{clock}} \in [\eta^-, \eta^+],\ \text{in the GR limit } [1,1]$$

$$\tau_0 \tilde{\Gamma}\, \mathcal{G}_{C_m} = \frac{dt_{\mathrm{ET}}}{d\lambda} = \eta_{\mathrm{clock}}\, \frac{d\tau_{\mathrm{GR}}}{d\lambda}, \qquad d\tau_{\mathrm{GR}} = \sqrt{-g_{00}}\, dt_{\mathrm{koor}} \ \text{(static observer, } v^i = 0) \qquad \text{(candidate clock mapping)}$$

$$\Delta t_{\min} \in \left[\frac{\hbar \theta^-}{\overline{\Delta E}^{\,+}},\ \frac{\hbar \theta^+}{\overline{\Delta E}^{\,-}} \right] \quad \text{(range form)}$$

Retired notation: the equality $\Gamma \cdot \mathcal{G}_{C_m} = 1/\sqrt{-g_{00}}$ of earlier versions is **dimensionally inconsistent** in the normalized scaffold ($[\lambda] = 1$, $[\Gamma] = T$), since it leaves the left-hand side with the dimension of time and the right-hand side dimensionless; it becomes dimensionally meaningful only if a scaffold parameter with the dimension of time ($[\tau] = T$) is chosen and the identifications $t_{\mathrm{ET}} \leftrightarrow t_{\mathrm{koor}}$ and $\tau \leftrightarrow \tau_{\mathrm{GR}}$ are made, and these identifications have not been proven. The clock mapping above is used in its place; which clock (coordinate time, proper time, Evertophy time) is being read is written explicitly.

The stationary-state branch: a state with $\Delta E = 0$ does not evolve ($ds_{\mathrm{FS}} = 0$); in the C-1 bridge, $\hbar\, ds_{\mathrm{FS}}/\Delta E$ becomes indeterminate ($0/0$), and this branch is defined separately. That the state distance of a subsystem is zero says that the measure of change of that subsystem is zero; **it does not mean that universal physical clocks have stopped**.

Symbol	Meaning
$\mathcal{G}$	The rate of change of the phase state (a "speed" in state space)
$\mathcal{G}_{\mathrm{FS}}$	The same rate measured with the Fubini–Study metric (the natural distance between quantum states)
τ, λ	Parameters; λ is **dimensionless**
$\hbar$	Reduced Planck constant — dimension [energy × time]
$\theta_{\min}$	The smallest angle between two distinguishable states (dimensionless)
ΔE	The energy spread of the C_m system
ds_{FS}	The Fubini–Study arc-length element
η_{clock}	The ratio between Evertophy time and general-relativistic proper time (a range)
$d\tau_{\mathrm{GR}}$	General-relativistic proper time
g_{00}	The time–time component of the metric
$\overline{\Delta E}$	The time average of the energy spread along the trajectory (the Anandan–Aharonov form for a time-dependent Hamiltonian)
t_{ET}, t_{koor}	Evertophy (scaffold) time and coordinate time

Symbol	Meaning
τ_0, $\tilde{\Gamma}$	Time scale and dimensionless readout coefficient ($\Gamma = \tau_0\tilde{\Gamma}$)

Question	Answer
What does it do?	It gives a dimensionally consistent quantum bound for the smallest meaningful step of time
Why does it do it?	In the old threshold, the left-hand side was dimensionless and the right-hand side had the dimension of action; the definition of time was dimensionally inconsistent
How does it do it?	It writes the threshold as a dimensionless angle; from it, for a constant energy spread, it extracts a temporal **speed limit** (of Mandelstam–Tamm type); it builds a time bridge with the Fubini–Study metric
What result is expected?	That the time step is defined dimensionally consistently in the quantum Cm regime and reduces to $[1, 1]$ in the general-relativistic limit
What result is obtained?	The old threshold is retired; the dimensionless threshold is a model / geometric bridge; the Fubini–Study time bridge (C-1) is a meaningful bridge only under the conditions of a pure state and unitary evolution, and **it is not the universal definition of all Cm clocks**: physical time is meaningful in a stationary quantum state too, whereas the bridge gives $0/0$ there; η_{clock} is a bridge / model (not core; GR limit $[1, 1]$); the open-system generalization is open. $\Delta t_{\min}$ is not an attained duration but a **lower bound** (equality only for geodesic evolution). The old notation $\Gamma\mathcal{G}_{C_m} = 1/\sqrt{-g_{00}}$ is retired because of a dimensional error; a dimensionally consistent clock mapping has replaced it

Historical dimensional check: the historical clock factor $dt = \Gamma\, G_t\, d\tau$ is consistent only if $[\Gamma] = T$, $[G_t] = T^{-1}$, $[d\tau] = T$; the dimensionless form becomes $dt = \tau_0\,\tilde{\Gamma}\, G_t\, d\tau$, with $[\tilde{\Gamma}] = 1$. The G_t here is **not** the gravitational constant. This form carries no physical clock outside Cm; nor is a zero derivative defined in c0 and c⁺. Status: archive / dimensional check; physical bridge open.

7.5 Two different kinds of timelessness

Phase	Temporal role	Ontological meaning
c0	Pre-temporal	Physical time is not yet established ($\perp_0$); potential / core regime
Cm	Physical time	The physical clock, the proper-time reading and measurable change are meaningful here
c⁺	Timeless record	The time established in Cm is dissolved ($\perp_+$); sealed records are present together without requiring temporal order

$$\boxed{\text{c0 timelessness (not yet established)} \;\neq\; \text{c}^+ \text{ timelessness (dissolved)}}$$

7.6 The photon, proper time and phase membership

In special relativity, proper time is zero along a lightlike world line. This measured fact does not make the photon ontologically a member of c⁺.

$$\boxed{d\tau_{\text{öz}} = 0 \;\not\Rightarrow\; \text{phase}(\text{photon}) = c^+}$$

The photon is on the $v = c$ boundary, in a **liminal** state (3.3). Being liminal means lying on the boundary of the membership band of C_m. This boundary is at the same time the boundary of the c^+ regime: C_m and c^+ share this boundary. Lying on the **shared boundary** of two regimes is not the same as being a member of either: the photon is a member neither of the massive matter of C_m nor of c^+. The same reading also holds for gravitational waves (author's ruling, 3.3).

Question	Answer
What does it do?	It settles the phase status of the photon
Why does it do it?	The inference "no time passes for the photon, therefore the photon is in c^+" is common but wrong
How does it do it?	It accepts zero proper time as a C_m measurement; it places the photon on the shared liminal boundary of C_m and c^+
What result is expected?	That light and gravitational waves find a consistent place in the framework
What result is obtained?	The shared-boundary reading is an author's ruling; lying on the boundary is not membership

7.7 The two-clock problem — an open tension

The effective geometry of C_m already produces a proper time; the emergent-time scaffold offers a second language of reading. The "two-clock" problem must therefore be resolved explicitly.

Route	Content	Cost
A	The emergent reading is identical with proper time	The new time structure may add no physical content
B	The two clocks are independent	The precise agreement between them must be explained
C	There is a dynamic or unique mapping	An additional bridge law is required

Until this problem is closed, the emergent-time equation cannot be presented as a derived alternative to general-relativistic proper time.

7.7a The registry — a safe core reading

The registry is not an independent entity. It is a readout language used for the record trace of differentiated events and provenance information within C_m. The statement "there is a record" does not mean "there is a new ontological entity".

The following forms were used in the historical archive:

$$\Delta\sigma_m \neq 0 \;\Rightarrow\; \text{Record} \;\Rightarrow\; \text{Time}, \qquad \frac{dS_{\text{Reg}}}{d\tau} \geq 0$$

Symbol	Meaning
$\Delta\sigma_m$	The change in the C_m share (historical)
S_{Reg}	The historical "registry entropy"

Question	Answer
What does it do?	It tried to derive time from the production of records, and the registry entropy from a monotonic magnitude
Why does it do it?	It was an early attempt to tie the arrow of time to the accumulation of records
How does it do it?	By writing a chain that ties the change in phase share to a record, and the record to time, together with a law of monotonicity
What result is expected?	A fundamental derivation of time
What result is obtained?	In the current core, these forms are **not elevated** to a fundamental derivation of time or to a universal law of entropy; the time scaffold of 7.2 and the seal / archive ontology of Section 14 take precedence. The reading "c^+ = the global / instantaneous registry of all phases" is not current canon either: the C_m time language of "instantaneous" is not carried into c^+

7.8 Time and entropy

Time and entropy **are not identical.** The C_m arrow of time and the behaviour of record / entropy may have common structural roots; but:

$$\boxed{\text{physical time} \neq \text{thermodynamic entropy} \neq \text{archive order}}$$

The increase of one is not the definition of the other.

7.9 Phase memory — a timeless statement

"Phase memory" does not mean a history variable flowing inside c_0 or c^+. The safe interpretation is this: the history of thresholds and transitions leaves **a structural residue or provenance constraint** in the subsequent C_m reading.

For the archive, core monotonicity is expressed not with a time variable but with a provenance order:

$$\boxed{A \preceq A'}$$

Symbol	Meaning
A, A'	Two states of the archive
$\preceq$	Append-only / provenance order; it is not physical time in c^+

The expression $R_\phi(t + \Delta t) \geq R_\phi(t)$ seen in the archive can be used only as **an effective model with C_m time**; it is not a core axiom.

The phase trace (Phase Scar) — model candidate

The "Phase Scar" in the archive is preserved as an effective model realization of phase memory:

$$\Delta X_{\text{res}}(x) = \int \Gamma(x, t')\, dt', \qquad X_{\text{eff}}(x) = X_0(x) + \Delta X_{\text{res}}(x), \qquad \Xi_{\text{iz}} = \int \frac{\partial \Gamma}{\partial X}\, dX$$

Symbol	Meaning
ΔX_{res}	The residual contribution left from the past

Symbol	Meaning
X_0, X_{eff}	The basic and the effective resolution (model)
t'	A time variable belonging only to the C_m effective model
Ξ_{iz}	Alternative functional seal candidate (unrelated to $\Xi = \ln \chi_S$ in 17)

Equation set — phase memory

$R_\varphi(r_{n+1}) \geq R_\varphi(r_n)$ (with respect to the provenance index — not with respect to physical time)

Symbol	Meaning
R_φ	Measure of phase memory
r_n	The n-th provenance record

Question	Answer
What does it do?	It writes in a timeless language the principle that phase systems "do not forget the past"
Why does it do it?	The old canon wrote this principle with respect to physical time; but there is no time in c_0 and c^+
How does it do it?	It writes monotonicity with respect to the provenance order of records instead of time; in effective-model versions it restricts the time integral to C_m only
What result is expected?	That it can be tested whether past transitions leave a measurable trace in the C_m reading
What result is obtained?	The provenance-indexed notation is definite; monotonicity itself is not a formal theorem but an architectural rule (its status depends on the author's decision). The Phase Scar equations are not core laws; they do not scalarize X and do not carry C_m time into the atemporal phases

7.10 The language of speed is legitimate only in C_m

No internal RATE / SPEED language is used for c_0 and c^+.

For the same reason, expressions such as dX/dt, "the rate of phase flow" or "the expansion speed of c^+" do not belong to the fundamental ontological layer; they can be defined only at the level of C_m readout or of models.

7.11 Comparison map with schools of emergent time

Four major positions on the status of time, and the position of Evertophy, are on record. This comparison is a positioning, not a criticism.

School	Status of time	Source	Relation to Evertophy
Barbour	Ordering of configurations in a timeless ontology; "time capsules"	No source	Common: time is not fundamental. Difference: Evertophy tries to **reproduce** time physically; Barbour dissolves it philosophically

School	Status of time	Source	Relation to Evertophy
Rovelli	Thermal time: modular flow determined by the state; time is derived	State → thermal flow	Common: derivedness. In Evertophy the source is regulation / sealing / phase transition
Smolin	Time is fundamental and real	Time itself	Partial closeness: a candidate bridge between a timeless ontology and realism about physical time
Wheeler–DeWitt	$H\Psi = 0$ — a timeless wave equation	It stands as a problem	Evertophy reads timelessness through the phase distinction: not established in c_0, dissolved in c^+

7.11a The Page–Wootters formalism

This is the classical structure "timeless universe + clock subsystem → time from a conditional wave function". In the Evertophy reading, the role of the clock subsystem belongs to the physical processes in C_m; the candidate mechanism is the "regulator flow". No formal identity has been established.

7.11b The holographic approach to time

This is the relation between boundary time and bulk time. Its counterpart in Evertophy is the readout relation between c^+ and C_m; but holographic correspondence (of the AdS/CFT type) is not imported into the core (19.2).

7.11c Thermodynamic / entropic time

This is the view that the arrow of time arises from the increase of entropy. In Evertophy the distinction is sharp: time, entropy and archive order are three separate concepts (7.8, 16.3); none of them is the definition of another.

7.11d Relational quantum mechanics (RQM)

Measurement is interaction; the observer has no priority. In parallel, in Evertophy the observer is not a separate ontological class but the role of systems that produce records within C_m (1.4).

7.11e Wheeler–DeWitt and the literature on timelessness

The question "how timelessness is overcome" is open in the literature. Evertophy's proposal is phase-dependent production; in terms of mathematical depth the framework is still **fragmentary**: not a closed formal system, but at the level of "pattern + phase model".

7.11f A deeper comparison with Barbour

Four differences are on record: **(A)** timeless ontology ↔ time produced by the phase; **(B)** epistemic ↔ physical ("emergent does not mean unreal": clocks, drift and formal correlations are physical data); **(C)** the phase architecture (c_0, C_m, c^+ do not exist in Barbour); **(D)** a residual trace (δX, $\Phi(x)$, $\rho(\tau)$) — the only claim by which Evertophy goes beyond Barbour is a measurable residue, and this claim has not been closed.

> The plainest position: there is no fundamental time; time is produced in C_m through regulation and sealing, and may leave a measurable trace.

The caveat is locked: this sentence cannot be accepted as having been realized; its verification is an open debt.

Equation set — c: the Cm light-cone boundary

$$\text{Core: } g(k,k)=0, \quad c_{C_m}=[c,c] \qquad (\text{K12: } c=\sup d\ell/d\tau \text{ — retired; } \gamma v\to\infty)$$

Symbol	Meaning
k^μ	A lightlike (null) vector
$g(k,k)=0$	The null-cone condition
$c_{C_m}=[c,c]$	The speed of light in Cm: a definitional point interval
$d\ell/d\tau$	Path speed with respect to the particle's proper time
γ	Lorentz factor

Question	Answer
What does it do?	It determines the place of the speed of light in Evertophy
Why does it do it?	Defining c as a phase-independent universal constant would import an internal speed into c_0 and c^+
How does it do it?	It defines c as the null-cone boundary in Cm; it writes it in Cm as a zero-width range
What result is expected?	That there is no internal c in c_0 and c^+; that in the core the sensitivity of c to any reading is zero
What result is obtained?	The null-cone definition is the core preference and is in the canonical record; the proper-time definition (K12) is retired, because γv grows without bound

SECTION 8

THE ONTOLOGY OF ATTRACTION

8.1 Unfolding Postulate 0

> The Force of Attraction is the fundamental ontological postulate; gravitation is one of its projections in C_m.

Because the distinction of Section 1.2 is critical, it is repeated here:

$$\text{Force of Attraction}_{\text{ontoloji}} \neq \text{Gravitation}_{C_m} \neq X \neq g_{\mu\nu} \neq G_{\text{eff}}$$

8.1a The positive regulation reading — narrowed current form

The positive content of Postulate 0 requires that the Force of Attraction not be left described only by "what it is not": in Evertophy, the Force of Attraction is read as **the fundamental ontological constrainer and regulator of phase organization**.

But the identity in the historical record, "X = a gravitation-sourced index of permission / order", **is not current canon**. The current X is the universal, phase-sensitive resolver defined in Section 4; the Force of Attraction may be one of the determinants of X, but it does not by itself exhaust X.

$$\text{The Force of Attraction is the fundamental regulator} \not\Rightarrow X \equiv \text{attraction index}$$

8.2 The Force of Attraction ≠ observed gravitation

General relativity **is not wrong**: it is the effective language of gravitation, which is the metric projection of the Force of Attraction in C_m. The ontological postulate and its projection in C_m are different layers; all the measured results of general relativity are accepted unconditionally.

8.3 Effective coupling — model level

A bridge form that can be written in scalar–tensor language is:

$$G_{\text{eff}} = \frac{G_N}{F}, \qquad \frac{\dot{G}}{G} = -\frac{\dot{F}}{F}$$

Symbol	Meaning
G_{eff}	The effective gravitational coupling measured in C_m
G_N	Newton's gravitational constant
F	The coupling function of the scalar–tensor theory (its form is unknown)
$\dot{G}/G$	The relative rate of change of the gravitational constant (tightly bounded by measurements)

Question	Answer
What does it do?	It ties the effective gravitational coupling to a model function
Why does it do it?	To make contact with observational bounds on a possible variation of G
How does it do it?	In the standard form of scalar–tensor theories, it scales G_{eff} with the inverse of F
What result is expected?	A prediction for $\dot{G}/G$, if F is derived from X
What result is obtained?	**It is not core ontology but a model realization.** The form of F is unknown and its relation to X has not been established; the observational bounds are constraints placed **on** Evertophy, not predictions that follow from it

8.4 Local strength of attraction

The local strength of attraction is a quantity **related** to the phase position; it is **not equivalent** to it. The same value may correspond to different phase positions in different structural arrangements.

Gradient formulas

Forms of a law of motion of the following kind appear in the archive:

$$\mathbf{a} \sim -c^2 \nabla \ln X \qquad \text{(historical form)}$$

Question	Answer
What does it do?	It tried to derive acceleration from the logarithmic gradient of X
Why does it do it?	It was an early attempt to tie gravitational acceleration directly to the resolver
How does it do it?	By using X as if it were a scalar field
What result is expected?	That the Newtonian limit follows from X
What result is obtained?	**It is not a core law.** Since X is not necessarily a scalar, such a gradient form is not required by the ontology; if a reading $\xi = \pi(X)$ is defined and derived, it is evaluated in the model or bridge layer

8.5 The other forces

The electromagnetic, strong and weak forces — together with gravitation — are projections of the Force of Attraction in C_m (1.2). The coupling constants are in principle determined by the scale-, mass- and phase-dependent form of this projection; but the form of this dependence is not known.

The three-layer readout architecture — model candidate

Layer	What it describes	Status
Maxwell / field language	The electromagnetic field in C_m and measurable field readings	Established effective physics
CMT / channel language	Modes, scattering, impedance and directional channel behaviour	Experimental / model bridge language

Layer	What it describes	Status
Evertophy / phase-constraint language	The upper constraint structure that resolves which phase, regime and reading are admissible	Ontological / programme layer

Maxwell ≠ CMT ≠ Evertophy; the layers are not used in place of one another.

The historical development records also contain the following phenomenological candidate assignments for the forces:

C_m interaction	Historical / candidate Evertophy reading
Strong	A binding structure resembling "crystal / phase integrity" (old name; To Be Addressed Later)
Electromagnetic	A persistent C_m signature and readout programme related to the limit c (charge); the projection form of repulsion and of charge To Be Addressed Later
Weak	Transformation from an unstable to a stable structure

This table **is not a derivation**; it does not count as having explained the gauge structure or the couplings of the Standard Model. In particular, the row concerning c does not claim a superluminal process that physically "breaks" the kinematic and consistency limit of C_m.

8.6 Attraction and the outer phases

The Force of Attraction is phase-independent: c_0 and c^+ are also subject to its constraint coherence.

The metric, matter support and the language of acceleration are **readout tools** belonging to C_m; the Force of Attraction does not depend on these tools. The attractive effect of c^+, observed as dark matter and dark energy (Section 11), is read in C_m in the language of the metric; but the source of the effect is c^+'s own phase regime, not C_m matter. The mathematical language of "how" attraction works in the outer phases is deliberately open, and it is the natural subject of the cycle-mechanism layer of V24.

This reading does not bring a metric or C_m matter support back into c^+; the distinction **identity ≠ mechanism** is preserved, and no quantitative derivation is claimed here.

8.7 Gravitational impedance — a C_m general-relativity model reading

In the language of weak-field general relativity, to avoid confusion with the τ of the ontology, let us denote local proper time by τ_{GR} and coordinate time by t_{koor}. The following relations are for **an observer at rest in the coordinates** ($v^i = 0$); the last approximation holds in the weak field and in the notation $g_{00} = -(1 + 2\Phi_N/c^2) + \ldots$:

$$d\tau_{\mathrm{GR}} \simeq \left(1 + \frac{\Phi_N}{c^2}\right) dt_{\mathrm{koor}}$$

$$Z_g(x) \equiv \frac{dt_{\mathrm{koor}}}{d\tau_{\mathrm{GR}}} = \frac{1}{\sqrt{-g_{00}}} \simeq 1 - \frac{\Phi_N}{c^2}$$

$$\mathbf{a} \simeq -c^2 \nabla \ln \sqrt{-g_{00}} = +c^2 \nabla \ln Z_g \simeq -\nabla \Phi_N$$

For a general timelike world line ($x^0 = ct$, $v^i = dx^i/dt$):

$$Z_g = \frac{dt}{d\tau_{\mathrm{GR}}} = \Big[- \left(g_{00} + 2 g_{0i}\, v^i/c + g_{ij}\, v^i v^j/c^2 \right) \Big]^{-1/2}$$

The candidate dictionary that can be investigated with the channel model is:

$$\Phi_g \;\longleftrightarrow\; \Phi_{\mathrm{ch}}^{\mathrm{gen}} = \lambda \ln \left| \frac{Z_{\mathrm{eff}}}{Z_{\mathrm{ref}}} \right|$$

Symbol	Meaning
τ_{GR}	Cm proper time (general-relativistic reading; not to be confused with the τ of 7.2)
t_{koor}, t	The coordinate time of a distant observer
Φ_N	Newtonian gravitational potential
g_{00}, g_{0i}, g_{ij}	Components of the metric
v^i	Coordinate velocity
Z_g	Gravitational impedance (general-relativistic reading)
$\mathbf{a}$	Weak-field acceleration reading
Φ_g, $\Phi_{\mathrm{ch}}^{\mathrm{gen}}$	The gravitational potential and the real amplitude potential of the channel (candidate correspondence). The complex channel potential $\lambda \ln(Z_{\mathrm{eff}}/Z_{\mathrm{ref}})$ is preserved separately as a model object carrying independent phase information (17.1a)
Z_{eff}, Z_{ref}, λ	Effective and reference channel impedance, scale coefficient (17.1a)

Question	Answer
What does it do?	It reads gravitational time dilation as an "impedance" and recovers the Newtonian acceleration from the gradient of this impedance
Why does it do it?	To build a testable dictionary between the channel (impedance) language and the language of general relativity
How does it do it?	It defines the ratio of coordinate time to proper time as Z_g; in the weak field it extracts the acceleration from the relation $\ln Z_g \approx -\Phi_N/c^2$
What result is expected?	That the correspondence between the channel potential and the gravitational potential is calibrated in the future
What result is obtained?	The general-relativistic reading is correct and gives the Newtonian limit; but Z_g is a readout magnitude **defined only in Cm**, and it is not carried into c₀ and c⁺. The ratio $dt_{\mathrm{koor}}/d\tau_{\mathrm{GR}}$ is not identical with the ontological scaffold of 7.2; nor is Φ_{ch} regarded as identical with Φ_χ of Section 17 unless a calibration is shown. The clock mapping of 7.4 (η_{clock}; for a static observer $d\tau_{\mathrm{GR}} = \sqrt{-g_{00}}\, dt_{\mathrm{koor}}$) does not remove this distinction: the mapping is in the readout layer, the identity in the ontological layer

The processing-delay reading

In the operational reading of the archive, n is **an index of processing order**, not a physical duration; it attributes no physical time to c₀. The link between the index and the duration measured in Cm requires a scale and a mapping:

$$dt_{\text{gösterge}} = \tau_* \, f \, dn$$

Symbol	Meaning
n	Index of processing order
τ_*	Scale
f	Mapping; the choice $f = \sqrt{-g_{00}}$ is a choice of bridge that reproduces the general-relativistic ratio

Question	Answer
What does it do?	It reads gravitational time dilation as a processing delay
Why does it do it?	To give an intuitive picture consistent with the view that time is a reading in C_m
How does it do it?	It ties the processing-order index to C_m duration through a scale and a mapping
What result is expected?	That the mapping is justified independently
What result is obtained?	Gravitational time dilation is read as a **processing delay**, and the Shapiro delay as the delay of passage through a high-impedance region. This **renames** the numerical results of general relativity and does not count as deriving them; the choice of f is not derived

8.8 The derivation chain from CMT to attraction (model candidate)

The candidate chain from the language of coupled-mode theory (CMT) to a reading of attraction is:

$$(\Gamma_{\text{CMT}}, \kappa, \nu) \;\Rightarrow\; S(\omega; \mathcal{C}) \;\Rightarrow\; \chi_S \;\Rightarrow\; \Xi = \ln \chi_S \;\Rightarrow\; \mathbf{g}_\chi = -\Lambda(\xi) \nabla \ln \chi_S - (\ln \chi_S) \nabla \Lambda(\xi)$$

Symbol	Meaning
Γ_{CMT}	Internal loss (not to be confused with the Γ of 7.2)
κ	Port coupling
ν	Parameter that breaks reciprocity
$S(\omega; \mathcal{C})$	Scattering matrix depending on frequency and port configuration ($\mathcal{C}$)
χ_S	Ratio of forward / backward transmission amplitudes (17.1)
Ξ	Logarithmic asymmetry measure (unrelated to Ξ_g, Ξ_Λ in 2.10 or 13.6)
$\Lambda(\xi)$	Channel scale coefficient (not to be confused with the cosmological constant Λ)
$\mathbf{g}_\chi$	Channel-sourced candidate acceleration field; the short form $-\Lambda \nabla \ln \chi_S$ holds only when $\nabla \Lambda = 0$

Question	Answer
What does it do?	It writes the candidate chain from the directional asymmetry of a channel to an acceleration field
Why does it do it?	To look for a testable bridge between scattering parameters measurable in the laboratory and a reading of attraction
How does it do it?	It goes from the loss, coupling and reciprocity parameters to the scattering matrix, from there to the asymmetry ratio, and to the gradient of the logarithmic potential
What result is expected?	A measurable channel–attraction bridge, if each link is derived separately

Question	Answer
What result is obtained?	Having written the chain is not a derivation; each link is a bridge that must be derived separately. Since $\chi_S \equiv 1$ in reciprocal systems (17.1), the chain becomes meaningful only once a concrete physical class that breaks reciprocity is defined

Conditions required for breaking reciprocity (model record)

Single-mode CMT does not yield a breaking of reciprocity. At least one of five classes of mechanism is required:

Class	Example
Magneto-optic bias	Ferrite, magneto-optic medium
Time-dependent modulation	Parametric driving
Multi-mode + circulation	Ring resonator
Background path + interference	Interferometer arrangement
Nonlinear active medium	—

The correct statement is not "single mode + parameter ν" but "a concrete physical class that breaks reciprocity + port configuration + reference plane". Passivity and time invariance alone do not guarantee reciprocity: ferrite systems under static magnetic bias are passive but non-reciprocal examples. Nor are multiple modes, a ring resonator or an interference path by themselves proof of a breaking of reciprocity (17.1).

The gravitational impedance chain (archive record)

Step by step: (1) an analogy between electromagnetism and general relativity; (2) $d\tau \approx (1 + \Phi/c^2)dt$; (3) $Z_g = dt/d\tau = 1/\sqrt{-g_{00}} \approx 1 - \Phi/c^2$; (4) $\mathbf{a} \approx +c^2 \nabla \ln Z_g = -c^2 \nabla \ln \sqrt{-g_{00}} \to -\nabla\Phi$ (sign correction: $\ln Z_g \approx -\Phi/c^2$); (5) the bridge candidate $\Phi_g \leftrightarrow \Phi_{\text{ch}}^{\text{gen}} = \lambda \ln|Z_{\text{eff}}/Z_{\text{ref}}|$ (real amplitude form; the complex form $\lambda \ln(Z_{\text{eff}}/Z_{\text{ref}})$ is a separate model object carrying phase information, 17.1a).

> Z_g is a general-relativistic readout magnitude defined only in $\mathrm{C_m}$; it is not carried into c_0 and c^+ .

8.9 The Shapiro delay — an operational-delay reading

The Shapiro delay of general relativity is a measured phenomenon and is accepted as it is. The Evertophy reading is operational:

$$X_{\text{clock}}(r) \equiv \pi_{\text{clock}}[X](r), \qquad t_{\text{göz}} = \int \frac{d\tau}{X_{\text{clock}}(r)} \qquad (X_{\text{clock}} > 0)$$

A random residual candidate that could be added to the bridge is also recorded in the archive:

$$\delta t = \delta t_{\text{GR}} + \eta, \qquad \mathbb{E}[\eta] = 0, \qquad \text{Var}(\eta) \propto \int F(\rho, Z)\, dx$$

Symbol	Meaning
π_{clock}	The clock readout projection of X
$X_{\text{clock}}(r)$	Position-dependent clock reading
$t_{\text{göz}}$	The observed travel time
δt_{GR}	The delay predicted by general relativity
η	A random residual with zero mean
$F(\rho, Z)$	Candidate weighting function depending on density and impedance

Question	Answer
What does it do?	It reads the Shapiro delay as the integral of the clock reading of X along the path and adds a testable residual candidate
Why does it do it?	To look for a window (pulsar timing arrays, interferometers) in which the Evertophy reading could be distinguished from general relativity
How does it do it?	It writes the clock reading as a position-dependent projection; it adds to the delay a residual with zero mean and a medium-dependent variance
What result is expected?	That the variance of the residual gives a measurable signature
What result is obtained?	It is a **test design**, not a prediction; the physical bridge is open. The critical safety constraint is $\partial X / \partial E_{\text{probe}} = 0$ (active achromaticity, 7.4): agreement with the bounds on energy-dependent delays from observations such as LHAASO / GRB 221009A requires that the bridge not produce Lorentz violation

8.10 The reading of cosmic expansion and collapse

At the cosmic scale, the expansion branch is related to c^{+} and the collapse branch to c_0 (3.1). The quantitative expansion–collapse dynamics and the balance equation of the three phases have the status **Awaiting Derivation**; they have not been locked as a one-line principle of inertia. This heading is preserved historically; its counterpart in the current core is the double-limit seed of Section 2.

SECTION 9

THE ONTOLOGY OF THE METRIC

9.1 The only domain of the metric

$$\boxed{g_{\mu\nu} \text{ is an admissible object ONLY in } C_m.}$$

The metric is an **output** of C_m, not its input. The language for measuring length, duration and angle is born in the phase in which matter is differentiated and measurement is established; using this language to define the phases themselves would put the readout tool in place of the thing being read.

9.2 The phase barrier and geometric realization within C_m

The ontological core criterion is:

$$\boxed{\text{MetricAdmissible}(\phi) \iff \phi = C_m}$$

The tetrad $E^A{}_\mu$ (four frame vectors) is a tool of representation that can be used **only after the C_m geometry has been established.** Within C_m, suitable tetrad rank conditions for a non-degenerate Lorentzian metric can be studied; but the statement

$$\boxed{\text{rank}(E) = 4}$$

is not the definition of the phase barrier of the outer-phase ontology.

The tetrad is not inserted into the outer phases

$$\boxed{\text{The tetrad is NOT A DEFINED OBJECT in } c_0 \text{ and } c^+.}$$

For this reason one does not say "the rank drops in the outer phase"; the correct statement is that **the tetrad and metric types are not admissible in the outer phase.** A drop in rank is still speaking in the language of C_m; inadmissibility says that this language has not been established there at all.

Equation set — the metric phase barrier

$$g = E^{\mathsf{T}} \eta E, \quad \eta = \text{diag}(-1,1,1,1), \quad E \in \mathbb{R}^{4\times 4}:$$

$$\det g = -(\det E)^2,$$

$$\text{rank}\, E = 4 \iff g \text{ is a non-degenerate Lorentzian metric}$$

Symbol	Meaning
g, $g_{\mu\nu}$	The metric tensor
E, $E^A{}_\mu$	The tetrad matrix (frame components)
η	The Minkowski metric, signature $(-,+,+,+)$

Symbol	Meaning
$\det$	Determinant
rank	The number of independent rows / columns of a matrix
θ^a	Frame 1-forms
MetricAdmissible(ϕ)	The predicate stating whether the metric is admissible in phase ϕ

Question	Answer
What does it do?	It constructs the metric through the tetrad and ties the condition of non-degeneracy to the full rank of the tetrad
Why does it do it?	To tie the condition under which the metric can exist to an explicit mathematical criterion
How does it do it?	Through the identity $\det g = -(\det E)^2$, it makes the non-degeneracy of g equivalent to E having full rank
What result is expected?	That in phase transitions the tetrad can be rebuilt from X and phase information (9.4)
What result is obtained?	It is correct as a **conditional identity** within C_m. The rank condition is the condition for the realization of the metric in C_m; it is not the definition of the outer phases. Reconstruction of the metric from the ontology is **To Be Addressed Later**

Notation note: rank 4 is the condition for this construction to give a **non-degenerate** Lorentzian metric; when the rank is lower, the matrix expression can still be written but is degenerate.

9.2a Three-dimensional Euclidean flat space and emergent time

Author's ruling: The base space of C_m is the flat, three-dimensional Euclidean space made up of the familiar x–y–z coordinates; there is no fourth or additional dimension. Physical time **emerges** in this phase; it is not a fundamental dimension. In c_0, C_m-type space and time are not yet established; in c^+ they are dissolved.

$$\boxed{\text{Space}_{\text{temel}}(C_m) = E^3, \qquad {}^{(3)}R_{ijkl} = 0}$$

Symbol	Meaning
$\text{Space}_{\text{temel}}(C_m)$	The base (ontological) space of C_m
E^3	Three-dimensional Euclidean space
${}^{(3)}R_{ijkl}$	The Riemann curvature tensor of three-dimensional space; its vanishing means flatness

Question	Answer
What does it do?	It fixes the base space of C_m as flat, three-dimensional Euclidean space
Why does it do it?	To separate measured curvature effects from the structure of the base space: curvature is a reading, not a bending of the base space
How does it do it?	It assigns zero three-dimensional curvature to the base space; it places the 3+1 Lorentzian metric language in the measurement and model layer as the effective readout geometry of C_m

Question	Answer
What result is expected?	That all the observational results of general relativity are recovered from this effective geometry
What result is obtained?	It is an author's ruling. Measured curvature effects such as lensing, the Shapiro delay and gravitational waves are accepted unconditionally and are understood as **readings** of the metric projection of the Force of Attraction. Recovering the observational results from the effective geometry is **an open bridge problem.** Not every curved space-time admits a flat spatial slicing (for example, there are spherically symmetric families for which Painlevé–Gullstrand coordinates cannot be constructed); therefore it must be defined explicitly which families of general-relativistic solutions the map $g_{\mu\nu}^{\text{eff}}[E^3, X, \Delta]$ covers

This has an important consequence: the **four-dimensional curved space-time** of general relativity is not a fundamental structure, but the emergent effective readout geometry of C_m. As context — not counted as evidence —: cosmological data, under certain models, bound the large-scale spatial curvature to near zero; this is not proof of exact zero. It is also known in physics that general relativity can be written as a field theory on a flat background.

9.3 Two phases, two different reasons

Phase	Why there is no metric
c_0	It is pre-temporal; the metric is **not yet established**
c^+	C_m matter support is **dissolved**; $g_{\mu\nu}^{(C_m)} \to \perp_+$

The two phases are NOT metric-free FOR THE SAME REASON.

In c_0 the metric **has not yet been born**; in c^+ the support that carries it **has dissolved**. These two "absences" are not written with the same symbol: the undefinedness of c_0 is $\perp_0$, that of c^+ is $\perp_+$, and neither is zero ($\perp_0 \neq \perp_+ \neq 0$).

9.4 Reconstruction of the metric — two separate routes

In a transition from a phase into C_m, the old metric **is not carried over**; the new C_m state rebuilds its own metric.

$$\mathcal{E}_m^{(0)} : (\Delta_{0m},\, X,\, \Theta_m) \to E^A{}_\mu, \qquad \mathcal{E}_m^{(+)} : (\Delta_{+m},\, X,\, \Theta_m) \to E^A{}_\mu$$

In both cases:

$$g_{\mu\nu} = \eta_{AB}\, \mathcal{E}^A{}_\mu\, \mathcal{E}^B{}_\nu, \qquad \text{success condition: } \operatorname{rank} \mathcal{E}_m = 4$$

Symbol	Meaning
$\mathcal{E}_m^{(0)}$	The map that builds the tetrad in the $c_0 \to C_m$ transition
$\mathcal{E}_m^{(+)}$	The map that builds the tetrad in the $c^+ \to C_m$ transition
Δ_{0m}, Δ_{+m}	The phase difference / transition information of the corresponding transition edges (Section 5)
X	The dynamic meta-resolver

Symbol	Meaning
Θ_m	The admission conditions of C_m (gate / permission parameters)
η_{AB}	The Minkowski metric in frame space

Question	Answer
What does it do?	It writes, as two separate maps, how the metric is rebuilt on arrival in C_m from two different entries (from c_0 and from c^+)
Why does it do it?	To make mathematically explicit that the old metric cannot be carried across the transition and that the two entries are not the same event
How does it do it?	Each map takes its own edge information, X and the C_m admission conditions and produces a tetrad; the metric is built from this tetrad
What result is expected?	That arrival from c_0 **builds the geometry anew**, and arrival from c^+ **restores matter support**; explicit forms of the two maps
What result is obtained?	Only the **structure** has been written; the two maps need not be the same, and their explicit forms are not known (9.5)

9.5 The remaining gap

$$\mathcal{E}_m^{(0)}[\cdot] = ?, \qquad \mathcal{E}_m^{(+)}[\cdot] = ?$$

How the tetrad is to be derived from X and from the phase transition **is open**. This gap is left honestly; the framework does not use the metric without saying where the metric comes from.

9.6 No action is written for the outer phases

NO four-dimensional action / Lagrangian density IS WRITTEN for c_0 and c^+.

The standard C_m-type action integral uses the measure $\sqrt{-g}\,d^4x$; this measure is not defined in the outer phases. Metric-free or topological forms of action are mathematically possible; in the outer phases Evertophy excludes only the C_m-type four-dimensional metric action. The actions Evertophy uses **belong to C_m**.

SECTION 10

THE ONTOLOGY OF MATTER

10.1 Matter in the three phases

Phase	The state of matter
c_0	Differentiation has disappeared; matter is in the form of **a single integrated structure**, contiguous to a degree that converges to the metric-gapless state at the Planck scale
C_m	**Differentiated matter**: particles, atoms, structures
c^+	C_m matter support is **dissolved**; the C_m kind of matter is not admissible. Every region that C_m reads as "empty space" — even the space between the particles that make up the atom — is the C_m reading of c^+

10.2 Two transitions, two different events

$$C_m \to c_0 : \text{ differentiated matter} \to \text{METRIC-GAPLESS SINGLE STRUCTURE}$$

$$C_m \to c^+ : \ C_m \text{ matter support} \to \text{DISSOLUTION / INADMISSIBILITY}$$

These are **not the same event.** In the first, matter merges and distinction is lost: the metric gap between particles closes and matter becomes a single form. In the second, the basis of matter in C_m disappears: the structure dissolves and its energy is sealed in c^+. One is a gathering, the other a dissolution.

Question	Answer
What does it do?	It defines the transition of matter from C_m to the two outer phases as two separate events
Why does it do it?	The expression "matter disappears" would confuse two opposite processes — gathering into a single structure and dissolution — under the same word
How does it do it?	It writes the c_0 direction as the formation of a contiguous single structure, and the c^+ direction as matter support becoming inadmissible, separately
What result is expected?	Separate quantitative bridges for the two transitions ($\rho \leq \rho_P$ and capacity scaling for c_0; dissolution and seal for c^+)
What result is obtained?	The ontological distinction is canon; the single-structure reading of c_0 is an author's ruling (Section 3). The dynamical laws of the transitions are open

10.3 The concept of a particle

A particle is a **projection** produced in C_m by particular readout conditions. That two observers count different numbers of particles is not an ontological contradiction.

Honest note: This largely coincides with the operational reading of standard quantum field theory. Evertophy produces no new position here; it **joins** an existing position.

SECTION 11

c^+ AND THE DARK SECTOR

11.1 Internal ontological identity

$$c^+ \equiv \text{DARK MATTER} \equiv \text{DARK ENERGY} \equiv \text{VACUUM}$$

In Evertophy's internal ontology these are **the same entity**. Dark matter, dark energy and the vacuum are not three separate things but faces of the same phase that look different when seen from C_m. The vacuum calculations of quantum field theory are the computational language of this identity within C_m (Section 3).

Question	Answer
What does it do?	It ties dark matter, dark energy and the vacuum to a single phase identity
Why does it do it?	Uniting what appear to be three separate unknowns as three readings of the same phase is the centre of the framework's ontological economy
How does it do it?	It sets the distinction not as an energetic difference but as a difference of density, topology and readout environment (11.1a)
What result is expected?	A separate quantitative bridge for each appearance: rotation curves and lensing, accelerating expansion, vacuum effects
What result is obtained?	The identity is canon; the quantitative mechanism for each observational phenomenon is **open** (11.2)

11.1a Dark matter and dark energy: clustered and expansion-sustaining c^+

Dark matter and dark energy are not two separate mysterious components; they are **two different appearances of the same c^+ structure**. The distinction is not energetic; it is a difference of **density and topology**. At laboratory scale, the same c^+ is read as the vacuum.

Appearance	Its reading in C_m
Clustered c^+ → dark matter	A c^+ effect read in association with clusters of matter. The observed additional gravitational effect — galactic rotation curves, gravitational lensing — is the C_m reading of this appearance
Expansion-sustaining c^+ → dark energy	A c^+ effect associated with expansion, read in regions of low matter density, far from the pressure of matter
c^+ at laboratory scale → vacuum	c^+ read as "empty space" in the measurement apparatus and inside the atom; vacuum phenomena such as the Casimir effect are this reading

The distinction between identity and reading is written at the type level as follows:

$$\text{Okuma}_{C_m}(c^+;\mathcal{C}) = \begin{cases} \text{DM}_{\text{etkin}}, & \mathcal{C} = \text{galaxy / cluster} \\ \text{DE}_{\text{etkin}}, & \mathcal{C} = \text{cosmological expansion} \\ \text{Vak}_{\text{etkin}}, & \mathcal{C} = \text{laboratory / inside the atom} \end{cases}$$

Symbol	Meaning
$\mathrm{Okuma}_{C_m}(c^+;\mathcal{C})$	The C_m reading of c^+ in the observation context $\mathcal{C}$
$\mathcal{C}$	C_m observation context
$\mathrm{DM}_{\mathrm{etkin}}$, $\mathrm{DE}_{\mathrm{etkin}}$, $\mathrm{Vak}_{\mathrm{etkin}}$	The effective appearances read as dark matter, dark energy and vacuum

Question	Answer
What does it do?	It writes at the type level that a single ontological object gives three different C_m readings in three different observation contexts
Why does it do it?	To prevent the sign "≡" from being read as an energy–momentum equation or as an equality of observed density / pressure
How does it do it?	It keeps the identity in a single source; it loads the difference onto the readout context
What result is expected?	The establishment of a physical selector that gives the density, pressure and perturbation dynamics for each context
What result is obtained?	**It is a type distinction**; it does not divide c^+ into three separate phases. The quantitative mechanism of the readings is open (11.2, APPENDIX K.1)

In the archive the names "bound" and "free" also appear for the first two appearances; the primary terms are those above.

This reading has five subtleties:

- **The "outer rim" is not a spatial edge.** "Outer" is used in an ontological sense: the unclustered appearance, far from the pressure of matter. Since three-dimensional space is dissolved in c^+, c^+ itself being located at a spatial edge is not defined. The quantitative agreement of the reading with measurements of isotropy and homogeneity has not yet been shown; this is a condition to be tested by model and observation.
- **Measurement and reading are separate.** What is measured is the **acceleration** of the expansion, and it is accepted unconditionally. That distant galaxies recede faster than light is also a result of standard cosmology and is not a local superluminal motion. The link between the beyond-c character of c^+ and the expansion is an Evertophy reading.
- **Source and appearance are separate.** In its own phase c^+ has no C_m-type rest mass and no metric; but the appearance in C_m of a c^+-sourced effect may be a gravitational or metric reading. The distinction Force of Attraction ≠ gravitation is applied between the source phase and the measurement language in C_m (1.2). The gate lock does not prevent this reading (13.1a).
- **Identity does not mean equal density.** The identity c^+ ≡ dark matter ≡ dark energy ≡ vacuum does not mean that the observed dark-matter density is equal to the dark-energy density; the readout notation describes the observation layer, not the identity.
- **The quantitative mechanism is open.** The quantitative bridge from c^+ to the different pressure, clustering and expansion behaviours of dark matter and dark energy is an open debt (APPENDIX K).

11.2 Identity and mechanism are separated

ONTOLOGICAL IDENTITY IS NOT A QUANTITATIVE OBSERVATIONAL DERIVATION.

The following are at the model / bridge level **unless derived individually:**

- "Clustered c^+ is exactly the dark-matter mechanism"
- "Expansion-sustaining c^+ is exactly the dark-energy mechanism"
- Quantitative explanations of rotation curves, gravitational lensing and accelerating expansion

The identity claim is ontological; **a separate derivation is required for each observational phenomenon**, and none of these has yet been done.

Author canon — the dark-sector appearances of c^+ and the closed cycle

The joint birth of the three phases by U_0 in the same constitution is preserved. In this architecture, c^+ is the source of the reading of **dark matter and dark energy as two C_m appearances of the same phase entity**:

$$c^+ \equiv \text{DM} \equiv \text{DE} \equiv \text{Vacuum} \quad \text{(ontological identity; different } C_m \text{ appearances)}$$

The clustered appearance: the **non-particle** structuring regime of c^+ that becomes gravitationally prominent at galactic and cluster scale. The type-safe reading of the archive expression "having exceeded the speed-of-light limit through gravitation" is:

the matter-membership band $0 < v < c$ of C_m is no longer applicable $\neq$ a claim of internal speed of the form $v_{c^+} > c$

Symbol	Meaning
$0 < v < c$	The matter-membership band of C_m (author's ruling)
$v = c$	Not a member of the band, but the liminal shared boundary of C_m and c^+ (boundary ≠ membership)
v_{c^+}	An internal speed attributed to c^+ — **not** defined

Question	Answer
What does it do?	It turns the archive expression "having exceeded the speed of light" into a type-safe form that assigns no speed to c^+
Why does it do it?	Carrying the speed type of C_m into c^+ would be a category error and would create an unnecessary conflict with the measured results of relativity
How does it do it?	It writes explicitly the difference between "the band not being applicable" and "a speed value greater than the band"
What result is expected?	A quantitative reading of the clustered appearance that is independent of speed and rests on the phase regime

Question	Answer
What result is obtained?	The ontological part — that c^+ is a beyond-c regime and that a C_m-type speed cannot be applied there — is the locked formulation of 3.4. The **final mathematical representation** of the archive expression is an interpretation awaiting approval

This record therefore does not bring back "superluminal matter"; it preserves the undefinedness in c^+ of the C_m speed type, of the metric and of matter support. The gravitational effect seen in C_m observation is **the C_m reading** of the c^+ regime.

The expansion-sustaining appearance: the expansion / dark-energy appearance, at cosmic scale, of the same ontological c^+ regime. The clustered and expansion-sustaining appearances are not two separate substances but different C_m readout regimes of the same phase identity.

The closed-cycle connection: This identity is read together with the dilution branch of the double-limit structure kept as a core seed in Section 2.4; the full law of the cycle and the mathematical cycle mechanism are set aside for V24.

c^+ HAS EFFECTS; it is NOT a controllable channel or an internal-speed sector.

11.3 C_m concepts are not carried into c^+ unchanged

The current constraint is:

$$\mathrm{supp}_{C_m}(\text{madde}) \to \varnothing$$

Symbol	Meaning
$\mathrm{supp}_{C_m}(\text{madde})$	The basis (support) of matter in C_m
$\varnothing$	The empty set

Question	Answer
What does it do?	It states that in the transition to c^+, C_m matter support goes to the empty set
Why does it do it?	To prevent c^+ from being read as a sector that carries, with the same meaning, the C_m types of rest mass, metric length, physical duration or speed
How does it do it?	It writes the limit of matter support as the empty set; it assigns no new C_m-type quantity to c^+
What result is expected?	That readings of c^+ are built only through their effects in C_m
What result is obtained?	It is canon as a rule of type safety. The abstract `Dim.mass` permission record of historical K2 is kept as provenance information; it does not define an independent C_m-type mass observable within the current c^+

11.4 Cosmological tendency

That the contribution of the c^+ component in the C_m reading increases as the cosmic age advances is **a legitimate tendency** within the framework.

This is a record of TENDENCY — it is NOT a quantitative cosmological model.

The statement must be built carefully: c⁺ itself "does not change with time" — there is no time in c⁺; what changes is its share in the Cm reading.

11.4a c⁺ and U+ are not confused

c^+ is a **phase** and lies inside U_x. U_+, by contrast, is the global **dissolution pole** and lies outside U_x (Section 2.6). The increase of the c⁺ share with cosmic age is a reading at the phase level; approaching U_+ is a global condition.

11.5 Closed cycle

Rank	Justification
Primary	**The academic-scientific boundary** — to prevent metaphysical interpretation
Secondary	Absence of observation

> c^+ HAS EFFECTS but is NOT A SIGNAL CHANNEL: no controllable, information-carrying link can be established.

This is also consistent with quantum teleportation experiments: teleportation requires a classical channel; c⁺ is read only as the source of the correlation, not as the channel that carries the information.

11.6 c⁺ is not a source of prophecy

> ACCESS TO THE c^+ ARCHIVE $\neq$ READING THE FUTURE OF Cm

There is no time in c⁺; consequently there is no "future" there either. The archive holds only what has been written.

11.7 Cosmological bridge candidates — model / programme level

The internal ontological identity c⁺ ≡ dark matter ≡ dark energy ≡ vacuum is core; through which quantitative bridge it is reflected in Cm observations is an open programme.

Candidate mechanism	Required derivation	Observable target	Kill condition
Scale-dependent effective gravitational reading	κ_g(scale) from X and the phase conditions	Scale differences resembling the Hubble tension	If a definite band cannot be produced without parameter fitting
c⁺ dark-sector reading	c⁺ → Cm lensing / dynamics mapping	Galaxy and cluster dynamics, lensing	If baryonic matter + the bridge model cannot jointly meet the observations
Dilution / cosmic inertia	A quantitative law from the cycle and limit structure	Reading of accelerating expansion	If it remains only at the level of a slogan

Candidate mechanism	Required derivation	Observable target	Kill condition
A phase-level interpretation of redshift	An additional causal layer without breaking the standard redshift relation	Spectral and cosmological consistency	If it reproduces the general-relativity / quantum-field-theory limit wrongly

> “compatible reading” ≠ “solved / verified”

Topics such as the Hubble tension, the Bullet Cluster or accelerating expansion are treated not as present evidence but as **a programme of bridge falsification**.

11.8 A paradigm critique of the search for dark matter — record

The framework's position towards dark-matter experiments is summarized with the analogy of a pair of spectacles:

> "They are looking for the invisible object that distorts the image; we are saying that the refractive index of the medium varies."

This is a paradigm critique, not a rejection of experimental results. The null results of experimental programmes are **constraints placed on** Evertophy: no null result proves the identity c^+ ≡ dark matter ≡ dark energy ≡ vacuum; the identity can be tested only through a positive bridge prediction (11.7). The variety of dark-matter candidates (the record of the "dark-matter zoo") is preserved as observational context indicating that any single particle candidate has weakened — but context is not evidence.

11.9 The reading of phantom-divide crossing

The crossing of the line $w = -1$ by the dark-energy equation of state (the phantom region) is a candidate for being read in the framework as "a change of regime of the c^+ share in the C_m reading". In the literature, observations of phantom crossing are followed as supporting context; there is no quantitative correspondence.

Redshift domain: the physical domain is $z > -1$; the unbounded future of the expansion is $z \to -1^+$. $z \to -\infty$ is only a mathematical extension.

Equation-of-state domain: $w = -1$ corresponds to the cosmological constant; $w < -1$ is the phantom region. The phantom region violates the null energy condition, but it is not observationally excluded; therefore $w \geq -1$ is not written as "the physical domain".

> "Compatible reading" ≠ "solved / verified" — the ruling of 11.7 also applies here.

Equation set — the A1 logistic readout model

This is a **model** that tries to derive the dark-energy equation of state $w(z)$ from a logistic reading of X as a function of redshift:

$$w = -1 + \frac{(1+z)s}{3\Delta} \cdot \frac{(T - X_{\min})(X_{\max} - T)}{T(1-T)} \cdot \left[p(1-T) - qT\right]$$

Counterexample ($X_{\min}=0$, $X_{\max}=1$, $s=p=q=1$, $z_t=0$):

$$w=-1+\tfrac{(1+z)(1-2X)}{3},\qquad w(10)=-4.66633374896$$

$$z\to+\infty:\ w/z\to-\tfrac{1}{3},\qquad z\to-\infty:\ w/z\to+\tfrac{1}{3},\qquad \text{at both ends } w\to-\infty$$

The correct condition ($0\le u<v\le 1$, $s>0$, p,q finite; $u=X_{\min}$, $v=X_{\max}$):

$$(u>0\vee p=0)\wedge(v<1\vee q=0)\ \Rightarrow\ w\to-1 \text{ at both ends}$$

Symbol	Meaning
$X(z)$	Logistic reading: $1/[1+e^{-s(z-z_t)}]$ (not X itself, but a projection of it)
T	$X_{\min}+\Delta\,X(z)$
Δ	$X_{\max}-X_{\min}$
$X_{\min}$, $X_{\max}$ (u, v)	Lower and upper bounds of the reading
s, z_t	Steepness and transition redshift
p, q	Exponential weighting parameters
z	Redshift; $1+z=a_{\text{ref}}/a$, $a>0$
w	Dark-energy equation-of-state parameter (pressure / energy density)

Question	Answer
What does it do?	It computes $w(z)$ from a redshift-dependent logistic reading of X
Why does it do it?	To look for a testable model that makes contact with cosmological measurements of w
How does it do it?	It builds the reading as a logistic curve between lower and upper bounds; it ties it to the equation of state through weighting parameters
What result is expected?	A curve, consistent with observation, that gives $w\to-1$ at both ends
What result is obtained?	**It is a conditional model.** The unconditional claim of a double asymptote is **wrong**: in the counterexample $w\to-\infty$ at both ends; $w\to-1$ is obtained only if the correct condition above is satisfied. The model is not part of the K1v2 core; its source derivation (MINILAB-4) is **To Be Addressed Later**

SECTION 12

THRESHOLD AND STRUCTURE BANDS

12.1 The two-channel threshold

The orientation of a structure from C_m towards one of the outer phases is read through two separate channels: the mass channel operates towards c_0, the energy channel towards c^+.

The mass channel

$$\text{stellar mass} \rightarrow \text{critical-mass threshold} \rightarrow \text{saturation} \rightarrow \text{black-hole formation}$$

Black-hole formation is an established phenomenon of external physics. In Evertophy, the end of this channel is the transformation of matter into a single contiguous structure, to a degree that converges to the metric-gapless state at the Planck scale; the density cannot exceed the limit $\rho \leq \rho_P$, and as mass increases the structure does not become denser but larger (Section 3). The quantitative threshold and transition law for the mass channel, however, have not yet been derived. Black hole ≡ c_0 is not an inference presented as the result of this mechanism, but the author's ontological definition (3.2).

The energy channel

$$\text{radiation} \rightarrow \text{convergence to the } c^+ \text{ band} \rightarrow \text{exhaustion of energy} \rightarrow \text{dilution}$$

The energy channel is at the MODEL / CONCEPTUAL level.

Question	Answer
What does it do?	It divides the orientation of C_m structures towards the outer phases into two channels: towards c_0 through the accumulation of mass, towards c^+ through radiation and exhaustion
Why does it do it?	To show that the two directions operate through different physical processes and cannot be read with the same threshold
How does it do it?	It writes each channel as a chain of successive stages; it builds both not as a sharp boundary but as **a transitional band**
What result is expected?	Quantitative thresholds for both channels depending on scale and amount of mass (13.2)
What result is obtained?	The last stop of the mass channel is an ontological definition (black hole ≡ c_0); the quantitative threshold laws are open. The energy channel is at the conceptual level

12.2 The band ladder — map / model candidate

The following placements are not mandatory numerical phase assignments of the current core; they are **map / model candidates** from the archive.

Object	Map placement
Brown dwarf	Just before the C_m band
Neutrino magnetar	The c_0 pre-region
Electron–neutrino structures	The c^+ corner band

The caution of Section 3.7 applies: these are **map positions**, not phase membership.

12.2a The density spectrum — a density-regime analogy

The following order is not a set of measured universal density thresholds, but **an ordered structure / density analogy**:

Density-regime label	Historical structural mapping
Ultimate	The metric-gapless single structure inside a black hole
Super	Neutron-star core
Very high ("Crystal")	Atomic nucleus
High ("Liquid")	Electron cloud / atomic matter
Medium ("Gas")	Galactic halo; related to the C_m reading of dark matter
Low ("Vapour")	Intergalactic void

These labels are not phase membership; they are only a density-regime analogy.

The rule of Section 3.7, "map position ≠ phase membership", also applies here. This table produces no numerical threshold and does not use the words "Crystal / Liquid / Gas / Vapour" as real phases of matter.

12.3 The structure band

Planetary, atomic, electromagnetic and biological structures can be represented within the phase-parameter landscape with different relations and constraints. This does not mean that objects are members of three phases at the same time.

Map position ≠ phase membership

C_m is the phase of direct measurement and readout; the existence of an ontological relation with the other phases does not produce a mandatory mixture ontology of the form "C_m is not pure". That the space between particles inside an atom is the C_m reading of c^+ (Section 3) does not make the atom a member of c^+ either: the atom is a C_m structure, the empty space is the reading of c^+.

Author canon — the C_m structure band and the interior region

Planets, atoms, electromagnetic and biological structures, while remaining members of C_m, may carry continuous constraints of relation and interaction with the three phases.

The natural working domain of these structures in the phase-parameter landscape is **the interior region**, which cannot be reduced to a single vertex. The interior region is the domain of derivation and resolution in which X must resolve different property families together:

$$\mathcal{S}_{\text{yapı}} \in \mathcal{D}_{\text{iç}} \quad \Longrightarrow \quad X \text{ resolves the } c_0/C_m/c^+ \text{ relations and constraints together}$$

Symbol	Meaning
$\mathcal{S}_{\text{yapı}}$	The state description of a Cm structure (atom, planet, living being)
$\mathcal{D}_{\text{iç}}$	The interior region of the phase-parameter landscape (the domain not reducible to any vertex)
X	The dynamic meta-resolver

Question	Answer
What does it do?	It places complex Cm structures in the interior region, where the constraints of the three phases are resolved together
Why does it do it?	To express, without creating a contradiction of membership, that atoms, planets and living beings are both members of Cm and in continuous relation with the three phases
How does it do it?	It keeps membership in Cm; it defines the relations and constraints as the joint resolution of X in the interior region
What result is expected?	A quantitative joint resolution of the three phase constraints in interior-region structures
What result is obtained?	It is author canon. The expression "continuous interaction with the three phases" **is not simultaneous membership in three phases**; phase membership and the inter-phase constraint / readout relation are separate. The quantitative resolution is open

12.4 Separation of layers in the nuclear domain

Layer	What	Who explains it
Envelope (first order)	The general shape of the binding-energy curve	Liquid-drop model + Evertophy modulation
Shell (second order)	Magic numbers, shell closures	The shell model — **untouched**

Evertophy MODULATES THE ENVELOPE — it does NOT INVENT SHELL POSITIONS.

Why is this critical? A uniform envelope predicts a bump nowhere. If one said "there is no shell effect", the measured closures would also be denied. The correct claim concerns not the **existence** of shells but **how their strengths are modulated**.

12.5 The full density-spectrum table (model candidate)

The extended form of 12.2a. The labels are a density-regime analogy; they are not real phases of matter or phase membership.

Density-regime label	Historical structural mapping	Note
Ultimate	The single structure inside a black hole	c_0 (black hole ≡ c_0, the author's definition); $\rho \leq \rho_P$; the table produces no numerical threshold or general criterion of membership
Super	Neutron-star core	Region of kinetic separation
Very high ("Crystal")	Atomic nucleus	Shell structure is here
High ("Liquid")	Electron cloud / atomic matter	—
Medium ("Gas")	Galactic halo	Related to the C_m reading of dark matter
Low ("Vapour")	Intergalactic void	May be read as the region in which the c^+ share grows

The table produces no numerical threshold; the rule of Section 3.7, "map position ≠ phase membership", applies.

12.6 The principle of kinematic separation

Local laboratory speed alone does not determine phase membership: the kinematic state of an object measured in the laboratory and its phase membership are read separately. The band $0 < v < c$ of C_m, by contrast, is the ontological ruling of matter membership (3.3); the membership variable in this ruling is not identical with the ordinary laboratory coordinate speed. $v = c$ is not a member of the band, but the liminal shared boundary of C_m and c^+. The operational definition of the membership variable and its link with local kinematics are open.

$0 < v < c$ (membership band) , $v = c$ (liminal shared boundary; boundary ≠ membership)

12.7 The speed-sorting hypothesis (historical)

In an early layer, the hypothesis "the phases separate according to speed" was tried. The current core writes this separation in the language of bands (3.3) and proposes no additional sorting mechanism. The hypothesis is preserved as historical.

12.8 The reading of the atomic nucleus and the quark–gluon plasma transition

The reading "the atomic nucleus is the saturation product of a transition from quark–gluon plasma in the direction of C_m" is a model candidate. The quark–gluon plasma literature (high-temperature phase transitions, lattice results) is followed as context; no quantitative bridge has been established.

SECTION 13

PHASE TRANSITIONS

13.1 Gate and stamp

THE GATE IS BIDIRECTIONAL THE STAMP IS UNIDIRECTIONAL

Irreversibility comes not from the phase gate but from **the act of sealing.** A gate can be passed in both directions; but the seal written into c^+ of an event that has occurred in C_m cannot be undone. The unidirectionality of time is a property not of the gate but of the seal.

13.1a Gate, transport and lock

A gate states that a transition between two phases is possible. But the existence of a gate does not mean that every quantity can pass through that gate. These two things must be kept separate:

$$\text{Gate} \neq \text{Transport permission}$$

The gate structure is a complete triangle: each phase stands in a gate relation with the other two ($c_0 \leftrightarrow C_m$, $C_m \leftrightarrow c^+$, $c_0 \leftrightarrow c^+$). For a quantity to be transportable through a gate, however, it must be natively defined **in the phases at both ends** of the gate.

From this follows an important formally proven result — within the scope of the encoded formal system, as a theorem of the core ontology. Time, three-dimensional space, the metric, internal speed, the speed-of-light limit and rest mass are defined only in C_m; for this reason **they cannot be transported through any gate**. The general form is:

$$q \text{ is gate-locked} \iff q \text{ is natively defined in at most one phase}$$

That a quantity is not on the list of C_m-specific quantities does not determine its native definition in other phases, or its transport permission for a particular pair of phases; formal permission and physical realization are separated further. This lock does not prevent a c^+-sourced effect from being **read** in C_m. Transport and reading are different things: no quantity is transported from c^+ to C_m, but a c^+-sourced effect can be measured in C_m, in C_m's own language (15.1a). Only phase-independent labels pass through the gates. The coordination of X between phases, by contrast, is a separate meta-crossing and does not count as physical transport.

Reading rule: In the other sections of the document, the expressions "transition", "effect" or "passing through the gate" are read according to three separate concepts: **gate** (structural permission), **transport permission** (specific to a quantity) and **readout** (the observation in C_m of a c^+-sourced effect — not transport).

$$\text{Gate} \neq \text{Transport} \neq \text{Readout}$$

Equation set — gate, transport permission and gate lock

$$\text{GateLocked}(nat) \iff \text{AtMostOneNative}(nat) \qquad \text{(under the complete K3)}$$

Symbol	Meaning
`GateRelated a b`	$a \neq b$ — **complete K3**: every distinct pair of phases stands in a gate relation
`NativeOK q p`	Whether the quantity q is natively defined in phase p
`TransportPermission q a b`	`Gate ∧ NativeOK q a ∧ NativeOK q b` — transport permission
`CmOnlyKind`	Kinds defined only in C_m: rest mass, time, three-dimensional space, metric, internal speed, the limit c
`GateLocked nat`	$\forall a\, b,\ \neg$ Transport — cannot be transported through any gate
`AtMostOneNative nat`	$\forall x\, y,\ nat\, x \to nat\, y \to x = y$ — native in at most one phase

Question	Answer
What does it do?	It formally separates transition between phases (gate) from the transport of a quantity between phases, and characterizes the gate lock
Why does it do it?	The old `adjacent` function ignored the $c_0 \leftrightarrow c^+$ gate; the old K2 also said "mass is carried in c^+". Both contradicted the current ontology
How does it do it?	It ties transport permission, in addition to the existence of the gate, to the quantity being natively defined at both ends; from this it proves the equivalence "defined in at most one phase ⇔ gate-locked"
What result is expected?	That leakage of C_m-specific quantities (time, metric, rest mass...) into the outer phases is formally prevented
What result is obtained?	**Proven** (★ gate ≠ transport, gate lock). The old "witness-existence" generalization **is wrong** and has been removed. This is an algebraic theorem following from the definitions of the complete K3: it does not establish that K3 is realized in nature, nor does it determine the amplitudes, durations, probabilities or energy flows of transitions

13.2 The transition criterion

Since X need not be a single scalar, the general transition condition is not defined by a scalar equality X_{crit}. The type-safe core statement is:

$$\boxed{(X, \Theta_{ij}) \in \mathcal{D}_{ij}^{\text{adm}} \iff \mathcal{A}_{ij}(X, \Theta_{ij}) = 1}$$

In models in which a scalar or band realization is chosen, the edge-specific reading ξ_{ij} is used instead of X itself:

$$\xi_{ij} \in [\xi_{ij}^{\text{crit},-},\ \xi_{ij}^{\text{crit},+}] \ \text{(point reading)} \qquad B_{\xi_{ij}} \cap [\xi_{ij}^{\text{crit},-},\ \xi_{ij}^{\text{crit},+}] \neq \varnothing \ \text{(band reading)}$$

Symbol	Meaning
i, j	The phases at the two ends of the edge
Θ_{ij}	The transition-specific family of context / conditions
$\mathcal{D}_{ij}^{\text{adm}}$	The admissible domain of the edge in question
$\mathcal{A}_{ij}$	Admission indicator: if it is 1, the transition is permitted

Symbol	Meaning
$\xi_{ij} = \pi_{ij}(X)$	The edge-specific reading
$\xi_{ij}^{\text{crit},\pm}$	Lower and upper bounds of the critical range (a single-point range of the form $[P, P]$ is also valid)
$B_{\xi_{ij}}$	The band (range) form of the reading

Question	Answer
What does it do?	It defines under which condition a phase transition is **permitted**
Why does it do it?	A scalar threshold would contradict the non-scalar nature of X; the transition condition must depend on the whole of the resolver and on the context
How does it do it?	In the general case it requires X and the context to lie in the admissible domain; at the model level this becomes concrete as a reading falling within the critical range, or its band intersecting the range
What result is expected?	Concrete critical ranges for each edge, depending on scale and amount of mass
What result is obtained?	The type-safe definition is canon; point and band readings are **special cases**, not the ontological definition of X. The emphasis is on **"permitted"**: permission does **not make** the transition **mandatory**

Author's ruling: Phase-transition thresholds are evaluated according to scale and amount of mass; the projections of the Force of Attraction depend on the same variables (1.2).

13.3 Classification of edges

Edge	Stamp-carrying?	Observable in C_m?
Δ_{0m}	Yes	Yes
Δ_{+m}	Yes	Indirectly
Δ_{0+}	No	No

Δ_{0+} produces no stamp, because it does not touch C_m — the record opens on the edges that touch C_m.

Edge carriage ≠ directional production

> That an edge is STAMP-CARRYING does NOT MEAN that it produces stamps IN BOTH DIRECTIONS.

The meaning of direction is a separate matter. In the formal package, the stamp-carriage record of the form `stampOf(c⁺ → Cₘ) = κ₊ₘ` and the reading of the direction of writing into the ontological archive as $C_m \to c^+$ need not be the same layer of meaning. The protective sentence in this version is:

> The direction in which κ_{+m} is carried is deliberately open; stamp carriage does not by itself determine the meaning of direction.

The author's ruling (7.1) fixes the direction of the ontological record channel as $\mathbf{C_m \rightarrow c^+}$. Aligning the carriage direction of κ_{+m} in the formal package with this ruling is an open debt. The code is not silently reversed to close this debt; nor is the ontology derived solely from the direction of the existing code.

13.4 Three different "absences" — and the correct formalization

Concept	Meaning
No transition	The edge does not exist
Stampless transition	The edge exists, the transition exists, no stamp was produced
Algebraic unit	The neutral element in the stamp algebra

The correct distinction

At the level of meaning, "no stamp" and, at the algebraic level, "unit" are **different** things; they must therefore be expressed with two separate maps:

$$\boxed{\text{emittedStamp}(T_{0+}) = \texttt{None} \qquad \Sigma(T_{0+}) = e}$$

$$\boxed{\text{NO TYPE-LEVEL IDENTITY of the form } e = \texttt{NoStamp} \text{ IS SET UP.}}$$

Symbol	Meaning
T_{0+}	A transition on the $c_0 \leftrightarrow c^+$ edge
emittedStamp	The map giving the stamp produced by a transition; its result type is `Option Stamp`
`None`	The value "no stamp was produced"
Σ	The algebraic image map from transitions to the stamp monoid
e	The unit (neutral) element of the stamp monoid
M	The stamp monoid

Question	Answer
What does it do?	It separates the concepts "no stamp was produced" and "algebraic unit" into two separate maps
Why does it do it?	Σ : Transition $\rightarrow M$ goes into a monoid, and the monoid does not contain `None`; merging the two concepts into one map would be a type error
How does it do it?	It writes the **production** of a stamp with a separate map that returns `Option Stamp`, and the **algebraic image** of the stamp with the monoid map
What result is expected?	That the stampless edge is expressed consistently without breaking the stamp algebra
What result is obtained?	This is the correct formalization; no type-level identity is set up between e and `NoStamp`

13.5 A safe candidate for Δ_{0+}

The safest formal candidate for this edge is:

$$\text{ArchiveEffect} = \text{No change}, \qquad \text{CoordinationEffect} = X\text{-coordination}$$

$$\boxed{\text{Direct RAW ARCHIVE writing / reading is NOT IMPORTED for } c_0 \leftrightarrow c^+.}$$

Direct access to the archive would make c_0 history-sensitive; this contradicts its pre-temporal character. This coordination structure **is not identified with** U_0.

The weakest and safest interface of the formal candidate is a compatibility relation:

$$\boxed{\mathcal{R}^X_{0+} \subseteq \mathcal{X}_0 \times \mathcal{X}_+}$$

$\mathcal{X}_0$ and $\mathcal{X}_+$ here are not two separate fundamental X's; they are the phase-indexed admissible presentation spaces of the single meta-resolver X. For the internal realization, a span / fibre candidate may be used:

$$\boxed{\mathcal{X}_0 \xleftarrow{p_0} \mathfrak{F}^X_{0+} \xrightarrow{p_+} \mathcal{X}_+}$$

If a single target per source is proven in the relation, a partial function can be obtained. But the bidirectional gate does not by itself yield the result

$$F^X_{+0} = (F^X_{0+})^{-1}$$

an exact inverse or a bijective correspondence requires separate proof.

Symbol	Meaning
$\mathcal{R}^X_{0+}$	The X-compatibility relation between the c_0 and c^+ presentations
$\mathcal{X}_0$, $\mathcal{X}_+$	The admissible presentation spaces of the single X for c_0 and c^+
$\mathfrak{F}^X_{0+}$	Transition witness / matching structure (fibre)
p_0, p_+	Projections from the fibre to the two presentation spaces
F^X_{0+}, F^X_{+0}	Partial functions in the two directions, if they exist

Question	Answer
What does it do?	It gives the stampless $c_0 \leftrightarrow c^+$ edge a meaning of compatibility only at the level of X, without transporting archive or matter
Why does it do it?	The edge exists (complete K3) but does not touch C_m; it must be given a meaning, and that meaning must not make c_0 history-sensitive
How does it do it?	It writes the relation as a subset of the Cartesian product of the two presentation spaces; it builds the internal realization with a fibre and two projections
What result is expected?	A partial function if a single target per source is proven; an exact inverse if separately proven
What result is obtained?	**It is a formal candidate.** $\mathfrak{F}^X_{0+}$ is not a new phase, it is not U_0, and it carries no physical time. The bidirectional gate does not automatically give an exact inverse

13.6 The formal candidate of X-coordination for c₀ ↔ c⁺

Status: This section is a **formal candidate** for the particular relation and fibre realization between c₀ and c⁺. The general meta-coordination of X (4.6) is definite.

The current safe meaning of the direct edge is not raw archive transport or matter transport, but **compatibility / coordination at the level of** X (the relation and fibre of 13.5). In this structure:

- $\mathfrak{F}_{0+}^{X}$ **is not a new phase**;
- it is not U_0;
- it carries no physical time or rate parameter;
- it can be upgraded to a partial function if a single target is proven for each source state;
- the bidirectional gate does not automatically give the exact correspondence $F_{+0} = F_{0+}^{-1}$.

The deterministic resolution rule of X under the same fully determined state supports **the functionality of the resolver output**; but it does not prove the reversibility of the phase transition.

Note on the model layer — the direct c₀ ⇄ c⁺ edge lock

In a thought-experiment rate model, the author approved the following rule for the direct c₀ ⇄ c⁺ edge (2026-10-14): the potential of the edge is written as the ratio of the expansion ratio to the gravitational ratio; the stampless edge does not include the quantum localization ratio.

$$\Psi_{0+}(\ell, M) = \ln \frac{\Xi_\Lambda}{\Xi_g} = \ln \frac{\Lambda c^4 \ell^4}{6G^2M^2}, \qquad \Xi_g = \frac{2GM}{c^2\ell}, \quad \Xi_\Lambda = \frac{\Lambda c^2 \ell^3}{3GM}, \quad \Xi_q = \frac{\hbar}{Mc\ell}$$

Symbol	Meaning
Ψ_{0+}	The direct c₀ ⇄ c⁺ edge potential (model)
ℓ, M	The scale considered and the mass within it — Cₘ readout magnitudes
Ξ_g	The gravitational projection ratio (the inverse of the ratio of the scale to the Schwarzschild radius)
Ξ_Λ	The expansion / attraction ratio
Ξ_q	The quantum localization (Compton) ratio; the stampless edge does not include it
Λ	Cosmological constant
G, c, $\hbar$	Gravitational constant, speed of light, reduced Planck constant

Question	Answer
What does it do?	It parametrizes, with a single potential, at which scale and mass the stampless c₀ ⇄ c⁺ edge is effective
Why does it do it?	To express in magnitudes readable in Cₘ the relative weight between the two poles of the edge — attraction (the c₀ direction) and expansion (the c⁺ direction)
How does it do it?	It divides the expansion ratio by the gravitational ratio and takes the logarithm; it deliberately leaves the quantum ratio out, because the edge does not touch Cₘ and produces no stamp

Question	Answer
What result is expected?	That the line $\Psi_{0+} = 0$ gives the threshold at which the two model indicators (Ξ_Λ and Ξ_g) become equal; the mass dependence of the cycle affinity. This threshold is not the scale at which the accelerations balance (see the note below)
What result is obtained?	It is **a model rule**, not an ontological definition; it does not change the ontological meaning of 13.4–13.6: the edge is stampless ($\Sigma(T_{0+}) = e$), imports no raw archive writing / reading and carries no physical time. The rate (speed) language in the model belongs only to the model's C_m readout accounting. The Ξ ratios here are unrelated to $\Xi = \ln \chi_S$ in 8.8 and 17

Distinguishing the threshold from the balance of accelerations. Ξ_Λ is, in a Newtonian-type reading, the ratio of the expansion acceleration to the gravitational acceleration. The balance of accelerations is the condition $\Xi_\Lambda = 1$; $\Psi_{0+} = 0$, by contrast, is the condition $\Xi_\Lambda = \Xi_g$, and in general gives a different scale:

$$a_g = \frac{GM}{\ell^2}, \quad a_\Lambda = \frac{\Lambda c^2 \ell}{3}, \quad \frac{a_\Lambda}{a_g} = \Xi_\Lambda; \qquad \ell_{\text{denge}} = \left(\frac{3GM}{\Lambda c^2}\right)^{1/3}, \qquad \ell_{\Psi=0} = \left(\frac{6G^2M^2}{\Lambda c^4}\right)^{1/4}$$

Symbol	Meaning
a_g, a_Λ	Gravitational and expansion acceleration readings
ℓ_{denge}	The scale at which the accelerations become equal ($\Xi_\Lambda = 1$)
$\ell_{\Psi=0}$	The scale at which the edge potential is zero ($\Xi_\Lambda = \Xi_g$)

Question	Answer
What does it do?	It separates the model threshold from the physical balance of accelerations
Why does it do it?	The earlier explanation defined $\Psi_{0+} = 0$ as "the scale at which attraction and expansion balance"; the equation does not give this
How does it do it?	It solves the two conditions separately and finds two different scales
What result is expected?	That the correct scale is used in the physical interpretation of the edge lock
What result is obtained?	The model rule approved by the author **is preserved unchanged**; only its explanation is corrected. For one solar mass, $\ell_{\text{denge}} \approx 3.4 \times 10^{18}$ m (≈ 111 pc), $\ell_{\Psi=0} \approx 5.9 \times 10^{14}$ m

Under the rule, the cycle affinity of the model depends only on mass and **approaches** zero for $M \gg m_P$. The parameter domain is $w > 0$, $M > 0$ (undefined at $w = 0$; the sign changes for $w < 0$); in this domain the affinity is positive at every finite mass:

$$\mathcal{A} = \frac{1}{w} \ln\left(1 + \frac{m_P^2}{2M^2}\right)$$

Symbol	Meaning
$\mathcal{A}$	Cycle affinity; if it is zero, the model is in detailed balance
w	Threshold softness (model band, $w > 0$; not to be confused with the equation-of-state w of 11)
m_P	Planck mass

Question	Answer
What does it do?	It measures whether there is a net cycle flux among the three phases in the model
Why does it do it?	To see at which mass scale departure from detailed balance matters
How does it do it?	Under the edge rule, it sums the potential differences around the cycle; the result depends only on the ratio M/m_P
What result is expected?	That balance is seen at macroscopic masses and net flux at small masses
What result is obtained?	$\mathcal{A}$ is positive at every finite mass and approaches zero as $\mathcal{A} \simeq m_P^2/(2wM^2)$ for $M \gg m_P$; there is no exact vanishing. The affinity alone does not determine the size of the flux: together with the transition rates of the model (V24 §732), the region in which the net current exceeds the threshold 10^{-3} is only $\log_{10}(M/\mathrm{kg}) \in [-42, -27]$, that is, **subatomic masses** (a model result within the model and parameter band examined). An upper bound on the subatomic cycle rate from entropy production is an open debt (APPENDIX K). The numerical bands and the derivation are in the V24 rolling master record (§732)

SECTION 14

THE STAMP ALGEBRA AND THE ARCHIVE

14.1 Sealing

SEALING = the IRREVERSIBLE writing of a record.

Sealing takes place not inside C_m, but **at the threshold interfaces that touch C_m.** The record channel is unidirectional ($C_m \to c^+$); once sealing has taken place, the record is fixed (author's ruling, 7.1). This section builds the algebraic language of this fixity: if something can be written but cannot be erased, the mathematics of that structure is not a group but a **monoid**.

14.2 The stamp monoid

$$M = \langle s,\ s',\ \kappa_{0m},\ \kappa_{+m} \mid \kappa_{0m}^2 = \kappa_{0m},\ \ \kappa_{+m}^2 = \kappa_{+m} \rangle$$

Symbol	Meaning
M	The stamp monoid
s, s'	Free transition generators (free stamps)
κ_{0m}	The lock stamp of the edge Δ_{0m}
κ_{+m}	The lock stamp of the edge Δ_{+m}
$\langle \cdot \mid \cdot \rangle$	Presentation: generators on the left, relations on the right
$\kappa^2 = \kappa$	Idempotence: stamping the lock a second time does not change the algebraic image

Question	Answer
What does it do?	It defines the algebraic trace in the archive of transitions between phases as a monoid with four generators and two relations
Why does it do it?	The smallest algebraic structure is needed that simultaneously preserves the order, provenance and non-erasability of records
How does it do it?	It leaves the free stamps free; it makes only the two locks idempotent. Two separate lock generators preserve the information of which edge was crossed
What result is expected?	A full classification of the idempotents, uniqueness of normal forms, the structure of the group completion
What result is obtained?	**Proven as the core archive algebra** (subsections below)

Why a monoid, and why not a group

There is NO s^{-1} — because there is NO PRIMITIVE OPERATION OF ERASURE. The prohibition of invertibility IS ITSELF the reason M is not a group.

In a group, every element has an inverse; a record that has an inverse is an erasable record. Since the seal cannot be erased in Evertophy, the algebra of the archive cannot be a group. This is not a deficiency; it is the ontology itself.

Idempotents

$$\mathrm{Idem}(M) = \{e,\ \kappa_{0m},\ \kappa_{+m}\}$$

Question	Answer
What does it do?	It lists all the elements of the monoid that are unchanged when multiplied by themselves
Why does it do it?	To know exactly which stamps show the lock behaviour of "being complete once stamped"
How does it do it?	In the free sector the square of a word is longer than the word itself; hence $ww = w$ is impossible. What remains are the unit and the two locks
What result is expected?	That apart from the locks no stamp is idempotent by itself
What result is obtained?	**Formally proven:** $w \cdot w = w$ if and only if $w \in \{e,\ \kappa_{0m},\ \kappa_{+m}\}$

Forbidden relations

Relation	Why forbidden
$ss' = s's$	Word order is event order; order cannot be erased
$\kappa s = \kappa$	Records could no longer be added after a lock
$s^N = \kappa$	A free stamp cannot turn into a lock by itself

Group completion — and its interpretation

Since a group has invertibility, the locks go to the unit in the completion; what remains is a free group.

> THIS DOES NOT MEAN PHYSICAL INVERTIBILITY. Group completion is an ALGEBRAIC TOOL.

That the locks become trivial in the algebraic completion **does not imply** that a record in the archive can be erased. Moreover, collapsing the locks to a single absorbing zero **is rejected**; this would erase provenance and order information.

On the assumption that the presentation remains closed with only the idempotent relations above, the idempotents go to the unit in the universal group completion, and the following results follow:

$$\boxed{G_{\mathrm{univ}}(M) \cong F_2} \qquad \boxed{K(M) \cong \mathbb{Z}^2}$$

Symbol	Meaning
$G_{\mathrm{univ}}(M)$	The universal group completion of M
F_2	The free group on two generators (s, s')

Symbol	Meaning
$K(M)$	The commutative (abelian) universal group completion
$\mathbb{Z}^2$	The two-dimensional integer lattice
$\cong$	Isomorphism

Question	Answer
What does it do?	It computes what remains when inverse elements are artificially added to the stamp monoid
Why does it do it?	Completion is a powerful algebraic tool for counting and accounting; but the limit of its physical meaning must be drawn explicitly
How does it do it?	When inverses are added, the relation $\kappa^2 = \kappa$ collapses to $\kappa = e$; what remains is the free group on s and s', and, in the commutative case, two integer counters
What result is expected?	That the net count of free stamps can be kept with two integers
What result is obtained?	The results are **conditional on the presentation remaining closed**; if new relations are added later, they are checked again. Completion is not physical invertibility

There is no counter-stamp

The "negative" of a stamp **does not exist** as a physical object. It can be derived in the algebraic completion; it is **an accounting tool**.

Proof status of the stamp algebra

The basic properties of the stamp algebra have been proven in general, beyond finite sampling: associativity, that the rewriting process always terminates, that every word reaches a unique normal form, and that different reduction paths reach the same result (confluence).

One subtlety must be noted: confluence does not mean that **events can be interchanged**. When the order of events is held fixed, different groupings and reduction paths reach the same normal form; but in general $ab \neq ba$, and the order of events changes the result. The archive preserves the order of history.

Equation set — the stamp monoid and the archive algebra

$$u\,\kappa\,\kappa\,v \;\to\; u\,\kappa\,v \qquad \big(\kappa \in \{\kappa_{0m}, \kappa_{+m}\}\big)$$

$$w \cdot w = w \iff w \in \{e,\ \kappa_{0m},\ \kappa_{+m}\}$$

Symbol	Meaning
u, v	The parts of the word before and after (arbitrary sequences of generators)
w	A word (sequence of generators)
$\cdot$ / `mulW`	Concatenation reduced to normal form
$\to$, $\to^*$	Single-step / multi-step rewriting
e	The empty word (unit)

Question	Answer
What does it do?	It gives the rewriting rule that reduces two consecutive identical locks to one, and the classification of idempotents
Why does it do it?	So that the archive counterpart of the same history is not ambiguous: with the order of events fixed, different bracketings and orders of reduction must reach the same normal form
How does it do it?	It merges only identical locks that stand side by side; it does not touch the free stamps or the order
What result is expected?	Termination, unique normal form and confluence
What result is obtained?	**Proven** (★ core archive algebra). The group completion $G(M) \cong F_2$, $K_{ab}(M) \cong \mathbb{Z}^2$ holds for the stated closed presentation. Moreover `None ≠ Some(e)` : **no stamp being produced** and **the unit stamp** are different. This is not independence from the interchange of events

14.3 The weight function

How much a stamp narrows can be measured by a ratio of ranges. For consecutive stamps the ratios multiply, and in the logarithm they add — that is, a homomorphism is obtained.

Consequence for the lock

For a state-independent additive character ω, the relation $\kappa^2 = \kappa$ gives $\omega(\kappa) = 0$; this is not assigned by hand but **derived.** But this result does not require that the coverage range built from independent range endpoints be $[0, 0]$, or that a physical lock produce no cost at its first application. Three objects are separate:

Object	Its property
Exact character	State-independent and additive; $\omega(\kappa) = 0$
Coverage range	Built from independent endpoints; if it validly covers the exact value, $0 \in \Omega_{\text{enc}}(\kappa)$, but it need not be $[0, 0]$
State-dependent physical narrowing cost	May be non-zero at the first application

For example, $P(W) = \min(W, 1)$ is idempotent; but in the state $W = 2$ the first application produces a cost $\ln 2$, the second does not. A mathematical cost model can be written as follows — it is not assigned as the physical law of sealing:

$$C(T_2 \circ T_1, s) = C(T_1, s) + C(T_2, T_1(s)), \qquad C(T, s) = \ln W(s) - \ln W(T(s)), \quad W > 0$$

Symbol	Meaning
T, T_1, T_2	State transformations (applications of stamps)
s	State
$W(s)$	The width of the state (the size of the permitted range), strictly positive
$C(T, s)$	The narrowing cost produced by T in state s
$\circ$	Composition (first T_1, then T_2)

Question	Answer
What does it do?	It measures, as a logarithmic cost, how much a transformation narrows the state, and shows that costs add under composition
Why does it do it?	To make explicit that, even if the algebraic character of the lock is zero, its first application may have a physical price
How does it do it?	It defines the cost as the difference of the logarithms of the width before and after; in composition it takes account of the intermediate state ($T_1(s)$)
What result is expected?	A cost that is zero at the second application of an idempotent transformation and may be non-zero at its first
What result is obtained?	It is a mathematical **cost model**; it is not assigned as the physical law of sealing

Character ≠ physical lock

> That the weight is zero does NOT MEAN that the lock is PHYSICALLY INEFFECTIVE.

It says only that the lock lies in the kernel of the additive character. The lock can still change subsequent compositions and coarsen the state space.

The direction of the ratio must be preserved: the weight is defined in the direction "width before / width after"; if inverted, the sign breaks. For positive widths, the basic notation is:

$$\boxed{\Omega(m) = \log \frac{W_{\text{önce}}}{W_{\text{sonra}}}}$$

At a common state s, the **exact character** preserves dependence and is exactly additive:

$$\boxed{\omega_{AB}(s) = \ln W_A(s) - \ln W_B(s)} \qquad \omega_{AB}(s) + \omega_{BC}(s) = \omega_{AC}(s)$$

A range built from independent endpoint values, by contrast, is not the exact character but a **coverage range** (W_A "before", W_B "after"):

$$\boxed{\Omega_{\text{enc}}(m) = \left[\log \frac{W_A^-}{W_B^+},\ \log \frac{W_A^+}{W_B^-}\right]} \qquad \Omega_{\text{enc}}(uv) \subseteq \Omega_{\text{enc}}(u) \oplus \Omega_{\text{enc}}(v)$$

Symbol	Meaning
m	A stamp or a transition
$W_{\text{önce}}, W_{\text{sonra}}$	The width before and after the stamp
$\Omega(m)$	The weight of the stamp (measure of narrowing)
$\omega_{AB}(s)$	The exact character from A to B at the common state s
$W_A^{\pm}, W_B^{\pm}$	The range endpoints of the widths (lower / upper)
Ω_{enc}	Coverage range
$\oplus$	Independent range sum (Minkowski sum)

Question	Answer
What does it do?	It defines the weight of a stamp both as an exact number (at a common state) and as a range (with independent endpoints)
Why does it do it?	In the Range Formalism, when endpoints are taken independently, dependency information is lost; confusing the exact value with the coverage range leads to wrong results
How does it do it?	It builds the exact character as a difference of logarithms at the same state, and the coverage range with the worst combinations of endpoints
What result is expected?	Exact additivity for the exact character; only an inclusion relation for the coverage range
What result is obtained?	For example, for $W_A(s) = W_B(s) = s$, $s \in [1, 2]$, at a common state $\log(W_A/W_B) = 0$, while the coverage range is $[-\log 2,\ \log 2]$. Exact additivity and vanishing on idempotents hold **only for the exact character**; this coverage result does not carry over automatically to the range of state-dependent physical cost. The logarithm requires the widths to be strictly positive

The lock effect can be carried by a separate idempotent representation or projector:

$$\Pi_\kappa : \mathcal{B} \to \mathcal{B}, \qquad \Pi_\kappa^2 = \Pi_\kappa$$

Symbol	Meaning
Π_κ	The projector representation of the lock
$\mathcal{B}$	The space of states

Thus the vanishing of the exact character on an idempotent ($\omega(\kappa) = 0$) does not remove the physical effect of the lock: the effect is carried not by the character but by the projector.

Computational note

Range arithmetic must be done **with exact numbers**. In floating-point arithmetic, associativity breaks under rounding.

Sealing cost — historical bridge, candidate reading

Two accounts of the sealing cost C_s stand together in the archive; both are here in the **candidate-reading** mode. To avoid confusing the quantity whose source symbol in the historical model is Γ with the Γ of the current time scaffold, let us write it as Γ_{hist}:

$$\Gamma_{\text{hist}} = \Gamma_0(1 + \lambda D_+)^{-1}, \qquad C_s \propto \frac{1}{\Gamma_{\text{hist}}} \propto (1 + \lambda D_+), \qquad \nabla C_s = \Lambda \nabla \ln \chi_S \quad (\Lambda \text{ constant})$$

The historical causal chain is:

$$D_+ \ \to\ \Gamma_{\text{hist}} \downarrow \to\ C_s \uparrow \to\ \chi_S \neq 1 \ \to\ \mathbf{g}_\chi$$

Symbol	Meaning
Γ_{hist}	The record / dissolution rate in the historical model (not to be confused with the Γ of 7.2)
Γ_0	Reference value
D_+	A measure of density / occupancy in the c⁺ direction (historical model quantity)

Symbol	Meaning
λ	Coupling coefficient
C_s	Sealing cost (candidate reading)
Λ	Channel scale coefficient (not the cosmological constant)
χ_S	Channel asymmetry ratio (17.1)
$\mathbf{g}_\chi$	Channel-sourced candidate acceleration field (8.8)

Question	Answer
What does it do?	It proposes a chain tying the sealing cost to c^+ density, and from there to channel asymmetry
Why does it do it?	To look, if sealing has a physical price, for whether it leaves a measurable trace in C_m
How does it do it?	It assumes that as density increases the record rate falls, the cost rises, and this can be read as a non-reciprocal channel asymmetry
What result is expected?	A laboratory-measurable signature $\chi_S \neq 1$
What result is obtained?	**It is a candidate reading**; it does not define the time scaffold of 7.2 or the stamp algebra of this section. D_+ and C_s are not fundamental quantities of the current core. Whether the Γ of the source notation and the Γ of 7.2 are two names for the same physical role, or independent quantities, is open. The double-counting debt of 24.2 **does not count as resolved** by this block. The retired criterion "$\nabla \ln \chi_S \neq 0$ for dark matter" is not brought back into this chain

14.4 The two-layer archive

Layer	Structure	Property
Raw archive	Free monoid on records	**Append-only**; full fidelity
Stamp projection	Coarse projection to M	The idempotent locks are here

$$\boxed{\text{Raw archive} \neq M}$$

The critical difference is:

$$\kappa^2 = \kappa \quad \text{(in the stamp monoid)}$$

$$A + [r_1] + [r_2] \neq A + [r_1] \quad \text{(in the raw archive; } \mathrm{damga}(r_1) = \mathrm{damga}(r_2) = \kappa,\ \mathrm{rid}(r_1) \neq \mathrm{rid}(r_2)\text{)}$$

Symbol	Meaning
A	The raw archive (a sequence of records)
$[r_1]$, $[r_2]$	Two one-record sequences carrying the same stamp, with different identities
$+$	Appending (concatenation of sequences)

The event source is not collapsed. Even if the same stamp is stamped twice, two separate records are formed — with two separate identities (r_1, r_2): in the algebraic image the lock is counted once, but in the raw archive two events remain two events.

Distinguishing the ambient structure from the valid archive. The free monoid contains all finite sequences of records, including sequences in which the same identity is repeated. Valid archives are the subset of these without repeated identities, and this subset is not closed under unrestricted concatenation; therefore appending is guarded by a condition:

$$\mathcal{A}_{\text{geçerli}} = \{A \in \text{FreeMonoid}(\text{Record}) : \text{NoDup}(A.\text{map rid})\}, \qquad \text{append}(A, r) \text{ only if } \text{rid}(r) \notin \text{IDs}(A)$$

Symbol	Meaning
$\mathcal{A}_{\text{geçerli}}$	Raw archives without repeated identities (valid archives)
$\text{IDs}(A)$	The set of record identities in A
append	The guarded append operation

Question	Answer
What does it do?	It separates the free monoid as the ambient structure, and sequences without repeated identities as valid archives
Why does it do it?	Mistaking the invariant NoDup and the free monoid for the same closed structure produced invalid examples such as $[r] + [r]$
How does it do it?	It ties appending to the condition of a new identity
What result is expected?	A formal proof of the uniqueness of `rid` and of `WellFormedArchive` (23.10)
What result is obtained?	**The type distinction is established**; the algebraic results of the stamp monoid do not change

Record structure

$$r = (\text{rid},\ \text{edge},\ \text{stamp},\ \text{content range})$$

- rid **is unique** and is **not** a physical parameter
- Erasure operations are **not** in the set of operations
- The archive order is **a provenance order**; it is not physical time
- The time label in the C_m reading is **not inserted back** into the archive

The time label is **C_m provenance information**; c^+ has no time coordinate of its own ($dt_{c^+} = 0$ is a pedagogical reading; $\perp_+$ is the ontological state).

For a well-formed raw archive, the two basic candidate formal invariants are:

$$\boxed{\text{NoDup}(A.\text{map rid})} \qquad \boxed{A \preceq A'}$$

Symbol	Meaning
NoDup	No repeated element in the list
A.map rid	The list of identities of all records in the archive
$A \preceq A'$	A is a prefix of A' (append-only order)

Question	Answer
What does it do?	It writes the two basic invariants of a well-formed raw archive

Question	Answer
Why does it do it?	The uniqueness of record identities and the fact that provenance information can only grow are the formal counterpart of the non-erasability of the seal
How does it do it?	The first invariant requires identities to be non-repeating; the second requires every new archive to contain the old one as a prefix
What result is expected?	Monotone growth of provenance information without any primitive operation of erasure or undoing
What result is obtained?	**They are candidate formal invariants**; they are fully consistent with the ontological ruling (the record is fixed)

The free-monoid realization of the raw archive

The smallest suitable structure for raw provenance information is:

$$\mathcal{A}_{\text{raw}} = \text{FreeMonoid}(\text{Record}), \qquad \pi_{\text{stamp}} : \mathcal{A}_{\text{raw}} \to M$$

Symbol	Meaning
$\mathcal{A}_{\text{raw}}$	The raw archive
FreeMonoid(Record)	The free monoid on records (finite sequences of records)
π_{stamp}	Stamp projection: coarsely reduces a sequence of records to a stamp word

Question	Answer
What does it do?	It builds the raw archive as the free monoid of records and connects it to the stamp monoid by a projection
Why does it do it?	To make precise the relation between the full-fidelity record and the coarse algebraic summary
How does it do it?	The projection reduces each record to its stamp; `rid`, the content range and the multiplicity of events need not be preserved in this reduction
What result is expected?	That algebraic results are not confused with the meaning of the raw archive
What result is obtained?	The projection **loses information**; therefore raw archive $\neq M$

Erasure operations are kept out:

```
erase, pop, undo ∉ Ops(Archive)
```

Warning against ideal / Rees collapse

Words containing locks may form a class resembling an ideal in the algebra; but collapsing all lock content to a single absorbing zero destroys provenance information. Consequently, the approach "reduce everything locked to a single zero class" is not used in the current formal programme. This distinction prevents the group completion or a quotient result from being mistaken for the physical meaning of the archive.

Archive count and monotonicity

The raw archive grows only by appending. A definite result follows: when a record is appended to the archive, the number of records increases by exactly one.

$$N_{\text{arşiv}}(n+1) \;\geq\; N_{\text{arşiv}}(n)$$

Symbol	Meaning
$N_{\text{arşiv}}(n)$	The number of records after the n-th append step
n	Index of provenance order (order of appending) — not physical time

Question	Answer
What does it do?	It states that the number of records in the archive does not decrease in the order of appending
Why does it do it?	To make precise the counting consequence of an archive without a primitive operation of erasure
How does it do it?	It shows that each append operation increases the count by exactly one
What result is expected?	Strict monotonicity in provenance order
What result is obtained?	**Formally proven**, but it holds in provenance order; it is not a derivative with respect to physical time, and a continuous "archive growth rate" does not follow by itself. The record count in entropy models is a separate model quantity; a decrease in occupancy in a model does not mean that the archive has been erased

The principle that phase memory is monotone in provenance order ($R_\varphi(r_{n+1}) \geq R_\varphi(r_n)$) has a different status: the use of provenance order instead of physical time is definite, but monotonicity itself is not a formally proven theorem; it is **an architectural rule**. Its status depends on the author's decision.

14.5 The correct form of "the whole past is present"

The correct form of the intuition "the whole past is present in c⁺" is **a static relation of compatibility** over the set of records — not a flow. This preserves the intuition of the archive without breaking the principle of timelessness: in the archive there is no "before" and "after"; there are only the provenance order and the relations between records.

14.6 The two-layer q/Σ reading

Two separate maps carry different information:

$$q : \mathcal{C}_{\text{full}} \to G_{\text{bare}}, \qquad \Sigma : \mathcal{C}_{\text{full}} \to M$$

In the bare layer the reverse direction can be represented; in the stamp monoid, in general, it cannot:

$$\boxed{q(T_{ji}) = q(T_{ij})^{-1}} \qquad \Sigma(T_{ji}) = \Sigma(T_{ij})^{-1} \;\text{(CANNOT be written in general)}$$

On the stampless direct edge, the layer of meaning and the algebraic layer are kept separate:

$$\boxed{\text{emittedStamp}(T_{0+}) = \texttt{None}, \qquad \Sigma(T_{0+}) = e} \qquad \boxed{\text{NoStamp} \neq \text{NoTransition}, \qquad \texttt{None} \neq \texttt{Some}(e)}$$

Symbol	Meaning
$\mathcal{C}_{\text{full}}$	The category of transitions with all their information (stamp, provenance, direction)

Symbol	Meaning
G_{bare}	The bare phase-transition groupoid, in which stamp and provenance information are forgotten
q	Forgetful map: gives the bare phase transition
Σ	Stamp map: the image of the transition in the stamp monoid
T_{ij}, T_{ji}	The transition from i to j and the one in the reverse direction

Question	Answer
What does it do?	It separates into two maps the information "from which phase to which" and the information "what it wrote into the archive"
Why does it do it?	The gate is bidirectional, the stamp unidirectional (13.1); a single map cannot carry both correctly
How does it do it?	In the bare layer it represents the reverse transition as a group inverse; in the stamp layer, since it is a monoid, it writes no inverse
What result is expected?	That the bidirectionality of the gate and the unidirectionality of the seal are written together without contradiction
What result is obtained?	The protective rules hold: **stampless transition ≠ no transition**, `None ≠ Some(e)`

14.7 The C layer — disentangling the meaning of a transition

In the formal model, the following fields must not be compressed into a single symbol:

$$\mathfrak{C}(T) = (Gate,\ EdgeClass,\ Direction,\ StampClass,\ StampEmission,\ SealEffect,\ ArchiveEffect,\ CoordinationEffect,\ ProjectionEffect)$$

Field	Meaning
$Gate$	Gate (structural permission)
$EdgeClass$	Edge class (Δ_{0m}, Δ_{+m}, Δ_{0+})
$Direction$	Direction of transition
$StampClass$	Stamp class (free / lock)
$StampEmission$	Stamp production (`Option Stamp`)
$SealEffect$	Sealing effect
$ArchiveEffect$	Effect on the archive (append / no change)
$CoordinationEffect$	X-coordination effect
$ProjectionEffect$	Readout / projection effect in C_m

Question	Answer
What does it do?	It divides the meaning of a transition into nine independent fields
Why does it do it?	Merging these fields into a single symbol would silently identify concepts that are kept separate in the ontology
How does it do it?	It keeps each field as a separate component; in this way the following identifications are prevented
What result is expected?	That the formal code preserves the ontological distinctions one to one

Question	Answer
What result is obtained?	The distinction between appending to the archive in the $C_m \to c^+$ direction and readout / projection in the $c^+ \to C_m$ direction is a **formal candidate** consistent with the ontology; where the meaning of direction is not separately locked as direct canon, it is not written as a theorem

```
phase relation ≠ direction
direction ≠ stamp class
stamp class ≠ stamp emission
stamp emission ≠ sealing
sealing ≠ archive change
archive change ≠ coordination / readout
```

14.8 Path relations and the cycle character

Under the forgetful map q and the axiom $q(T_{ji}) = q(T_{ij})^{-1}$, the following relation for reverse paths may be **a derived result**; it should not be multiplied as an independent physical axiom:

$$q(\gamma_-) = q(\gamma_+)^{-1}$$

The same inverse cannot be written for the stamp map; $\Sigma(\gamma_-) = \Sigma(\gamma_+)^{-1}$ is in general meaningless, because M is not a group.

On a cycle, order-insensitive additive information can be summarized by the character Ω. Order-sensitive content, by contrast, requires a representation:

$$\rho : M \to \mathrm{End}(V)$$

If a C_m projection model defines a Schnakenberg-like cycle affinity:

$$\mathcal{A}_{\mathrm{cyc}} \neq 0$$

Symbol	Meaning
γ_+, γ_-	A path and its reverse
ρ	A representation of the stamp monoid on a vector space
$\mathrm{End}(V)$	The linear transformations of the vector space V
$\mathcal{A}_{\mathrm{cyc}}$	Cycle affinity (in the C_m projection model)

Question	Answer
What does it do?	It separates which information on closed phase cycles is order-insensitive and which is order-sensitive
Why does it do it?	To show that the trace left in the archive by a cyclic phase path may be too rich to be summarized by a single net number
How does it do it?	It carries the order-insensitive part with a character and the order-sensitive part with a linear representation
What result is expected?	A measurable candidate reading of the asymmetry or strength of sealing

Question	Answer
What result is obtained?	If the relevant subsector of ρ is invertible, the language of "holonomy" can be used; for the general monoid, **ordered transport** is safer. $\mathcal{A}_{\text{cyc}} \neq 0$ is **a candidate reading** for the asymmetry of sealing; it is not a rate law in the timeless fundamental layer

14.9 The distinction between recording and sealing

Two concepts are disentangled in the archive:

Concept	Meaning
C_m trace (recording)	A process within C_m producing a history-carrying, persistent trace that can be read back from C_m — a matter of preservability
Sealing	The irreversible writing of a record into the c^+ archive — a matter of irreversibility

> A "recoverable trace of the past" can be defined only at the level of the C_m trace; sealing alone does not bring back the past.

Critical ruling: sealing is the writing of a record into the c^+ archive (14.1), and in this sense it requires a record; but it **does not guarantee** leaving a trace readable back within C_m, a complete record of the physical state, or the recoverability of the record from C_m. C_m traces are in most cases partial and selective; trace density ≠ rate of time production. (The phrase "sealing does not require a record" in the previous version was a contradiction arising from the word "record" being used both for the c^+ archive record and for the C_m trace; it has been corrected.)

14.10 The stateless universe — recoverable and encoded history

The "stateless universe" record in the archive says this: the condition of the universe is not a state that stores the past; history is preserved in multiple records (traces).

$$\text{durum}(t) \neq \text{stored history} \quad \text{and} \quad R_\varphi(t+\Delta t) \in [R_\varphi(t),\ R_\varphi(t) + \Delta R_{\max}]$$

Symbol	Meaning
$\text{durum}(t)$	The state at time t in C_m
R_φ	Phase memory (14.4)
$\Delta R_{\max}$	The maximum increase of phase memory in one step
t, Δt	C_m readout time and step

Question	Answer
What does it do?	It separates the instantaneous state of the universe from stored history, and writes the bounded monotone increase of phase memory
Why does it do it?	To make explicit that the assumption "observation automatically preserves the record" is wrong, and that history lives in traces
How does it do it?	It writes in range form that phase memory does not decrease at any step but does not increase by more than a bounded amount

Question	Answer
What result is expected?	A testable distinction between **encoded history** (the record is only stored) and **recoverable history** (the structural residue can be actively read)
What result is obtained?	The "recording hypothesis" (that observation automatically preserves the record) **has been rejected.** Evertophy's further claim is recoverable history, and it **has not been proven**

Equation set — the Ω phase-transition character

The composition law of transitions between phases: the transitions A → B and B → C must give A → C.

$\omega_{AB} + \omega_{BC} = \omega_{AC}$ (exact) $\quad \Omega_{AB} \boxplus_B \Omega_{BC} = \Omega_{AC}$ (dependent) $\quad \Omega_{AC} \subseteq \Omega_{AB} \oplus \Omega_{BC}$ (independent coverage)

Symbol	Meaning
$\omega_{AB}(s)$	The exact scalar character at the common state s: $\ln W_A(s) - \ln W_B(s)$
Ω_{AB}	Interval-valued character
$\boxplus_B$	Composition that preserves dependence through the intermediate phase B
$\oplus$	Independent (Minkowski) sum

Question	Answer
What does it do?	It writes at three different levels how the characters of two consecutive transitions combine
Why does it do it?	The naive range equality $\Omega_{AB} + \Omega_{BC} = \Omega_{AC}$ is wrong when dependency information is lost
How does it do it?	Exact additivity at the exact level; equality when dependence is preserved; only inclusion for independent endpoints
What result is expected?	A consistent composition rule in the Range Formalism
What result is obtained?	The naive range equality **is wrong**; the three-layer structure (exact / dependent / coverage) **is correct**

SECTION 15

MEASUREMENT AND READOUT

15.1 Measurement belongs to C_m

DIRECT PHYSICAL MEASUREMENT IS POSSIBLE ONLY IN C_m.

Measurement means the formation of a record, the running of a clock, the click of a detector. All of these require differentiated matter, established time and a metric. In c_0 these are not yet established; in c^+ they are dissolved. For this reason, everything we know about the outer phases comes from their **readings** in C_m.

15.1a Phase roles: native, source and observation phase

When speaking of the relation of a quantity to the phases, three different roles must not be confused with one another:

Role	Meaning
Native phase	The phase in which the quantity is defined in its own language
Source phase	The phase from which an effect comes
Observation phase	The phase in which the effect is measured — measurement is always in C_m

This distinction removes a confusion: when a c^+-sourced effect is observed in C_m, the observed value is a value in C_m; what is dissolved in c^+ still remains dissolved. This distinction has been formally encoded with a typed readout structure. The **type** of the readout is established; the **law** of the readout — which c^+ source gives which value in C_m — is, as stated below, an open debt.

15.2 The readout map — open debt

The map from the C_m state to the measured quantities **is undefined**.

> The question is NOT "what is the readout map" but "what is the additional principle that makes it UNIQUE".

This is because such a map cannot be extracted uniquely from observation: different structures can give the same observational result. This is also consistent with the framework's third principle: a representation is valid within the scope in which it reproduces the measurement, and there is no ontological priority among representations.

Tools of open quantum systems

Tools such as Kraus, Lindblad and Stinespring can be used for this map.

> These are POSSIBLE C_m MODELS / SCAFFOLDS — they are NOT FUNDAMENTAL ELEMENTS OF THE CORE ONTOLOGY.

The definition of sealing **cannot be reduced** to these tools; sealing is ontological, these tools are a computational language within C_m. The completely positive and trace-preserving (CPTP) Kraus model in the archive is a bridge candidate within this limit:

$$\mathcal{E}(\rho) = \sum_i K_i \rho K_i^\dagger, \qquad \sum_i K_i^\dagger K_i = I$$

Symbol	Meaning
ρ	The density matrix of the system (a C_m quantum state)
$\mathcal{E}$	Quantum channel (state transformation)
K_i	Kraus operators
$K_i^\dagger$	The conjugate transpose of K_i
I	The identity operator

Question	Answer
What does it do?	It writes how a quantum state transforms after interaction with the environment
Why does it do it?	To provide the computable language in C_m of measurement and recording processes
How does it do it?	It transforms the state by a sum of Kraus operators; the completeness condition preserves total probability
What result is expected?	A computable model of the C_m projection of the sealing event
What result is obtained?	**It is a bridge candidate.** "Sealing = transfer of entanglement", and the interpretation of partial loss of trace in the C_m projection as a unidirectional history, are **computable model hypotheses**; they are not the definition of sealing or a fundamental element of c^+. The Hamiltonian / Lindblad language is likewise a candidate only for effective dynamics within C_m; it does not import a three-plus-one-dimensional Lagrangian / Hamiltonian structure into c_0

15.3 Measurement and collapse — the limit of the model

Evertophy may explore reinterpreting measurement in the language of phase, readout and sealing; but it does not claim that the quantum measurement problem has been solved. The chain "liminal regime → C_m projection → sealing" is a **model / interpretation candidate.**

Equating quantum uncertainty directly with "the finite resolution of the C_m screen" is not the current core; such an interpretation could acquire the status of a physical bridge only if it derived the standard quantum probabilities and the behaviour of the Born rule.

Experiments such as the delayed-choice quantum eraser are treated within this framework in the **compatible reading** mode: the measured results of the experiment are accepted unconditionally; the Evertophy reading offers an interpretation that does not contradict these results, but it does not claim to certify them or to be the only one to explain them.

15.4 Sealing cost

The sealing cost, the refresh time and the resolution noise are **conceptual model variables** used in the archive; they are not fundamental elements of the current ontology, and their quantitative definitions have not yet been closed. The sealing cost C_s is, as in 14.3, in the **candidate-reading** mode.

15.5 The five-step engineering measurement protocol

Note: A single port or a single phase difference does not prove non-reciprocity; S_{21} and S_{12} must be compared under the same normalization and conditions (17.1).

The engineering protocol matured in the archive for experimental bridges is:

#	Step	Content
1	Input phase	$(\Phi, \Xi, X) \rightarrow$ impedance / phase parameters; ports and normalization are made explicit
2	Coupling	Input–output transition matrix (CMT)
3	Asymmetry	$S_{21}/S_{12} \rightarrow \chi_S$; a reciprocity check is mandatory (17.1)
4	Safety	Achromaticity $\partial X/\partial E_{\text{probe}} = 0$ (consistency with LHAASO constraints); in discrete modelling, verification with S-parameters
5	Output phase	Acceleration mapping (draft bridge), the equation below

$$\mathbf{g}_{\text{eff}} = +c^2 \nabla \ln Z_g \quad \text{or} \quad \mathbf{g}_{\text{eff}} = -\Lambda \nabla \ln \chi_S - (\ln \chi_S) \nabla \Lambda$$

Candidate mechanism for active threshold modulation:

$$\Delta\Phi(t) = \Phi_0 \sin(\omega_m t)$$

Symbol	Meaning
$\mathbf{g}_{\text{eff}}$	Effective acceleration reading
Z_g	Gravitational impedance (8.7)
χ_S, Λ	Channel asymmetry ratio and scale coefficient (17.1)
E_{probe}	The energy of the probe signal
$\Delta\Phi(t)$	Threshold modulation applied from a single port
Φ_0, ω_m	Modulation amplitude and angular frequency

Question	Answer
What does it do?	It defines a five-step laboratory protocol, from input to output, for testing the channel bridge
Why does it do it?	So that bridge claims are tied to a test arrangement that is measurable, repeatable and preregistrable

Question	Answer
How does it do it?	It fixes the port normalization, measures scattering in both directions, checks reciprocity, applies the achromaticity constraint and ties the result to an acceleration mapping; it uses time modulation as a candidate reciprocity breaker (band-stop gaps are preferred because they reduce leaky modes)
What result is expected?	That a measurable, preregistered band is produced when reciprocity is broken
What result is obtained?	**It is a test design**, not a prediction

15.6 A physical redefinition of the observer principle

The locked sentence in the archive is:

> The observer is not consciousness; it is the matter phase (C_m).

This is the archive extension of the core ruling of 1.4: all C_m processes create an observer effect; observation is the role of systems that produce physical records and readouts in C_m. The concept of consciousness is in no way necessary for this ruling (24.8). Together with the liminal-regime reading: measurement is the mandatory projection of liminal transport onto the C_m phase — this is a model candidate, not core.

SECTION 16

INFORMATION, ENTROPY, RECORD

16.1 The entropy property family and its meaning by phase

Entropy $S(x)$ can be kept as a property family in the Phase-Parameter Matrix; but the language of standard thermodynamic entropy is not carried unchanged into the three phases.

Phase	Safe interpretation
$\mathbf{c_0}$	The standard dS/dt language is not admissible; a pre-temporal structural order / potential must be defined separately
$\mathbf{C_m}$	Thermodynamic / statistical entropy and entropy production carry physical meaning
$\mathbf{c^+}$	The timeless archive / provenance structure is not identical with the evolution of thermodynamic entropy

The old "potential / flow / coherent-locked" table may be used only as a pedagogical / model intuition.

16.2 Information and phase form

Information is not "lost" — its phase form changes. In c_0, information is potentially preserved in the integrated single structure without being destroyed; in c^+, it stands as a sealed record.

This is NOT A THEOREM; it is a REINTERPRETATION.

No counting of microstates has been done, and no quantitative relation with the standard black-hole entropy has been established.

16.3 The kinds of entropy are separate

Kind	What
Registry entropy	A candidate counting measure defined in the provenance / registry model; it has not been proven to be an ontological root
Thermodynamic entropy	A projection within C_m
Information-theoretic entropy	A projection within C_m

NO RAW EQUALITY HAS BEEN ESTABLISHED among these three; none is the DEFINITION of another.

The directional entropy chain — candidate bridge

The following directional reading is found in the archive:

$S_{C_m} \uparrow \Rightarrow$ clustering / attraction reading, $S_{c^+} \uparrow \Rightarrow$ expansion / dark-energy reading

Symbol	Meaning
S_{C_m}	The entropy measure in Cm
S_{c^+}	The entropy / dissolution measure in the c⁺ direction (model label)
$\uparrow$	Tendency to increase — it does not mean a time derivative within c⁺

Question	Answer
What does it do?	It proposes that two entropy tendencies correspond to two different cosmological readings in Cm
Why does it do it?	To test whether clustering and expansion can be read as two directions of the same recording process
How does it do it?	It maps the increase of entropy in Cm to the clustering / attraction reading, and the increase in the c⁺ direction to the expansion reading
What result is expected?	That the two tendencies are separated quantitatively
What result is obtained?	**It is a candidate bridge**; it does not break the definitional distinction of 16.3. S_{c^+} has not been locked as a standard thermodynamic entropy-production variable, and $\uparrow$ does not mean a derivative with respect to a physical time flowing within c⁺. It is not the definition of the Force of Attraction (Postulate 0)

Equation set — the K6 entropy model and the distinction of N

This is a **model** that derives an entropy from a record count N and an occupancy ratio F:

$$S = k_B\, N\, \frac{F}{F_{\max} - F}, \qquad \frac{dS}{d\tau} = k_B \left[\frac{N' F}{F_{\max} - F} + \frac{N F_{\max} F'}{(F_{\max} - F)^2} - \frac{N F F'_{\max}}{(F_{\max} - F)^2} \right]$$

$N_{\text{arşiv}}(n+1) \geq N_{\text{arşiv}}(n)$ (in provenance order — NOT a derivative with respect to physical time)

Symbol	Meaning
S	Model entropy
k_B	Boltzmann constant
N (N_{entropi})	The record-count quantity of the K6 model
F, $F_{\max}$	Occupancy and its upper bound
N', F', $F'_{\max}$	Derivatives with respect to τ
τ	Model parameter (the scaffold variable of 7.2)
$N_{\text{arşiv}}(n)$	The length of the n-th prefix of the append-only raw archive

Question	Answer
What does it do?	It computes an entropy and its rate of change from the record count and the occupancy
Why does it do it?	To look for a testable model bridge between the accumulation of the archive and thermodynamic entropy
How does it do it?	It writes the entropy with a ratio that diverges as the occupancy approaches its upper bound; it expands the derivative by the chain rule

Question	Answer
What result is expected?	An entropy curve that rises rapidly as the occupancy approaches its upper bound
What result is obtained?	**It is the K6 model.** The discrete monotonicity of the archive count **is proven**; but $N_{\text{arşiv}}$ and N_{entropi} are not automatically identical. The inference "$F' < 0 \Rightarrow$ erasure" **is wrong**: a decrease of occupancy in the model does not mean that the archive has been erased

16.4 Existence ≠ record

The ONTOLOGY "only what is sealed exists" DOES NOT ENTER THE CORE.

Record and sealing are **a provenance / formal layer**. They cannot be identified with existence itself. In particular, since c_0 is pre-temporal **potential**, the statement "unsealed potential is not real" contradicts the framework: in c_0 information is not yet sealed, but it exists.

16.5 The threshold of objective record

The occurrence of an event and the formation of its physical record are not the same thing. For an objective record, the information must acquire a sufficient number of independent points of accessibility.

16.6 Registry entropy — the two-layer structure

A two-layer structure has been proposed in the archive for the registry and information:

Layer	Structure	Conservation
Global	Unitary evolution + monotonicity of the registry	Information is conserved
Local	Kraus / CPTP: $\rho' = \sum_i K_i \rho K_i^\dagger$, $\sum K_i^\dagger K_i = I$	Readout model within C_m

The GKSL / Lindblad template (general form under the Markov approximation):

$$\frac{d\rho}{d\tau} = -\frac{i}{\hbar}[H(\Phi, \Xi), \rho] + \sum_k \gamma_k(\Phi) \left(L_k \rho L_k^\dagger - \tfrac{1}{2}\{L_k^\dagger L_k, \rho\} \right)$$

Symbol	Meaning
ρ	Density matrix
$H(\Phi, \Xi)$	Effective Hamiltonian (a candidate depending on threshold and asymmetry parameters)
$[\cdot, \cdot]$	Commutator
$\{\cdot, \cdot\}$	Anticommutator
L_k	Lindblad (jump) operators
$\gamma_k(\Phi)$	Damping rates
$\hbar$	Reduced Planck constant

Question	Answer
What does it do?	It writes the time evolution of an open quantum system under interaction with the environment
Why does it do it?	To build the computational language in C_m of the duality "globally information is conserved, locally it appears lost"
How does it do it?	It writes the unitary part with a commutator and the effect of the environment with Lindblad terms
What result is expected?	A measurable model of decoherence once $\{H, L_k, \gamma_k\}$ are chosen
What result is obtained?	**It is a computational template**; the choice of $\{H, L_k, \gamma_k\}$ is an open debt and is not a fundamental element of the ontology. The pair "global unitarity + local Kraus" says that the loss of information is observational; it opens a path towards the black-hole information paradox but is not a solution (0.3)

16.7 Derivation of the arrow of entropy — a three-layer summary

For the relation between the arrow of time and entropy, a three-layer working model is preserved in the archive:

1. **Core layer:** the time scaffold — physical time is produced in C_m:

$$dt = \Gamma \cdot \mathcal{G}_{C_m} \cdot d\tau$$

2. **Record layer:** monotonicity of the archive, in provenance order (the same ruling as in 14.4):

$$R_\varphi(r_{n+1}) \geq R_\varphi(r_n)$$

3. **Entropy layer:** only as a thermodynamic projection within C_m; the second law is written with the system boundary and the exchange of entropy specified:

$$\frac{dS_{\text{sis}}}{dt} = \Phi_S + \sigma, \qquad \sigma \geq 0; \qquad \text{isolated system } (\Phi_S = 0): \ \frac{dS}{dt} \geq 0; \qquad \frac{dS_{\text{sis}}}{dt} + \frac{dS_{\text{çevre}}}{dt} \geq 0$$

Symbol	Meaning
dt	The interval of physical time produced in C_m
Γ	The coefficient of the C_m readout / reporting-regulation family (7.2)
$\mathcal{G}_{C_m}$	The structure of measurable change and differentiation within C_m (7.2; an object not yet closed)
$d\tau$	The interval of the scaffold parameter
$R_\varphi(r_n)$	Phase memory after the n-th record
S, S_{sis}, $S_{\text{çevre}}$	Thermodynamic entropy; the entropy of the system and of the environment
Φ_S	Net entropy flux into the system (may be negative for an open system)
σ	Internal entropy production (cannot be negative)

> The core arrow, the accumulation of records and thermodynamic entropy production are NOT the SAME law.

Question	Answer
What does it do?	It separates the direction of time into three separate layers — production, record, entropy
Why does it do it?	The identity "arrow of time = increase of entropy" would contradict Evertophy's distinction time ≠ entropy ≠ archive order (7.8)
How does it do it?	It gives each layer its own law and its own domain of validity
What result is expected?	That in the candidate model it is shown that the arrow of time arises from the recording protocol, while the thermodynamic arrow appears in the statistical C_m projection of this record
What result is obtained?	The three layers are related to one another, but this relation **has not yet been shown**; the layers are not definitions of one another

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16.7a Entropy and energy: conservation at the level of U_x

Author's ruling: Entropy is the state of C_m structure dissolved into c^+. Energy is not annihilated; both the record and the energy share of the dissolving structure are sealed in c^+.

> Total energy is conserved at the level of U_x ; part of the energy cannot be measured in C_m — this share is sealed in c^+.

This ruling distinguishes three separate kinds of energy:

$$E_{U_x}^{\text{muhasebe}} \supseteq \left\{ E_{C_m},\ E_{+}^{\text{mühürlü}} \right\} \qquad \text{(distinction of kinds; the quantitative law of summation is open)}$$

Symbol	Meaning
E_{C_m}	The energy measured in C_m
$E_{U_x}^{\text{muhasebe}}$	The total energy accounting at the level of U_x
$E_{+}^{\text{mühürlü}}$	The share of energy sealed in c^+ (not a C_m-type energy, but a sealed form specific to c^+)

Question	Answer
What does it do?	It states that energy is not lost, but that part of it is sealed in c^+ and passes outside C_m measurement
Why does it do it?	To unite the increase of entropy and the conservation of energy in a single picture with the archive role of c^+
How does it do it?	It ties conservation not to the time symmetry of C_m but to a global accounting principle at the level of U_x
What result is expected?	That the unmeasurable share becomes evident at cosmological scale; a quantitative map among the three kinds
What result is obtained?	It is an author's ruling. Measured energy conservation in closed C_m systems is **a mandatory external condition** and is satisfied. The quantitative map among the kinds, the common value space and the transfer law **have not yet been established**

This ruling has four subtleties:

- **It is not a Noether conservation but a global accounting principle.** Energy conservation in C_m comes from a symmetry in C_m time; there is no global time at the level of U_x. For this reason, conservation at the level of U_x is not derived from C_m physics but is an ontological postulate, and it does not contradict the ruling "time is valid only in C_m".
- **Three separate kinds.** The three energies above belong to different layers of definition and use; this does not mean that their values differ in every case.
- **Agreement with measurements.** Measured energy conservation in closed systems is, within measurement precision, a mandatory external condition. That the unmeasurable share becomes evident at cosmological scale is, by contrast, an expectation not yet calculated; in general relativity, too, energy conservation is not globally defined at cosmological scale. This ruling claims neither that energy is conserved in every C_m measurement nor that conservation is violated in any closed system; local conservation, open-system exchange and cosmological global energy are separate scopes.
- **Gate structure.** That a quantity is not on the list of C_m-specific quantities does not determine its native definition in other phases, or its transport permission for a particular pair of phases (13.1a). The native status of energy in c^+ and its transport permission are open.

The formal distinction is also preserved: the discrete monotonicity of the archive count, the monotonicity of phase memory and the increase of thermodynamic entropy do not follow from the same theorem (14, 7.8). An increase in the raw record count is not physical entropy production. The author's ruling establishes an ontological link among these; the quantitative map showing which entropy measure corresponds to which sealing process is open.

SECTION 17

CHANNEL ASYMMETRY (CANDIDATE BRIDGE)

17.1 The basic idea

The asymmetric behaviour of a medium between two directions can be measured through scattering parameters:

$$\chi_S \equiv \frac{|S_{21}|}{|S_{12}|}$$

The logarithmic measure and the derived field are:

$$\Xi = \ln \chi_S, \qquad \Phi_\chi = \Lambda \ln \chi_S, \qquad \mathbf{g}_\chi = -\Lambda \nabla \ln \chi_S - (\ln \chi_S)\nabla\Lambda \quad \text{(short form only if } \nabla\Lambda = 0)$$

Symbol	Meaning
S_{21}, S_{12}	The forward ($1 \to 2$) and backward ($2 \to 1$) transmission amplitudes of the scattering matrix
χ_S	Ratio of forward / backward transmission amplitudes
Ξ	Logarithmic asymmetry measure
Λ	Channel scale coefficient (not the cosmological constant)
Φ_χ	Channel potential (not identified with the historical $\Phi(x)$ of 4.2)
$\mathbf{g}_\chi$	Channel-sourced candidate acceleration field

Question	Answer
What does it do?	It measures the asymmetry in the two-way transmission of a medium and derives from it a potential and an acceleration field
Why does it do it?	To look for whether a directional structure between phases has a trace measurable in the laboratory
How does it do it?	It takes the ratio of the forward and backward amplitudes; it builds a potential by multiplying its logarithm by a scale coefficient; it extracts the acceleration from its gradient. The symmetry condition is automatic: $\chi_S = 1 \Rightarrow \Phi_\chi = 0$
What result is expected?	A signal in a reciprocity-breaking system that is measurable and can be compared independently with a gravitational reading
What result is obtained?	**It is a candidate bridge.** In every reciprocal system the criterion is identically 1 (see the note below); the fate of the bridge is left to the author's decision. The retired criterion "$\nabla \ln \chi_S \neq 0$ for dark matter" is not used

Note on reciprocity

This criterion has an important limit. In every **reciprocal** system under the same port normalization ($S_{21} = S_{12} \neq 0$), the ratio is identically 1; losslessness is not required for this — Onsager reciprocity is sufficient. The phase difference $\arg S_{21} - \arg S_{12}$ is also identically zero under the same condition; that is, it is not an automatic backup criterion.

$$\boxed{\text{Reciprocal system:} \quad \chi_S \equiv 1, \qquad \Delta\varphi \equiv 0}$$

Symbol	Meaning
$\Delta\varphi$	$\arg S_{21} - \arg S_{12}$, the phase difference of two-way transmission

Question	Answer
What does it do?	It shows why the channel-asymmetry criterion is empty in reciprocal systems
Why does it do it?	The earlier canon used χ_S as a general criterion; Onsager reciprocity invalidates this
How does it do it?	Since $S_{21} = S_{12}$ under reciprocity, it concludes that both the amplitude ratio and the phase difference are identically constant
What result is expected?	That the criterion is used only when a **reciprocity-breaking** physical class, port configuration and reference plane are explicitly defined
What result is obtained?	χ_S as a general criterion **is wrong**; $\Delta\varphi$ as an automatic backup **is wrong**; the choice of the reciprocity-breaking class is **To Be Addressed Later** (author's decision)

17.1a The family of impedance and potential bridges

The channel-asymmetry line does not consist only of the definition of χ_S. At the model level, the following chain has been investigated:

$$\boxed{\chi_S \to Z_{\text{eff}} \to \Phi_\chi \to \mathbf{g}_\chi}$$

In some CMT / impedance realizations, a link can be established between Z_{eff}, or a similar effective channel magnitude, and χ_S. But this chain is **a candidate bridge**, not an ontological law of gravitation. If Λ is defined as a product of several factors, measuring only the product does not predict the factors separately; this situation is priced under the parameter and bridge budget (ParamBudget / BridgeBudget).

Equation set — Z_eff, the canonical directional effective impedance

KAP-03, K5v2 and K12v2 all use Z_{eff}; the **canonical definition** of this quantity is given here:

$$Z_{\text{eff},i}(\omega) \equiv Z_{0,i}\,\frac{1 + S_{ii}(\omega)}{1 - S_{ii}(\omega)}, \qquad \Phi_{\text{ch}}^{(\pm)}(\mathbf{x},\omega) \equiv \lambda \ln \frac{Z_{\text{eff}}^{(\pm)}(\mathbf{x},\omega)}{Z_{\text{ref}}}$$

Symbol	Meaning
$S_{ii}(\omega)$	The reflection coefficient of port i
$Z_{0,i}$	Port reference impedance
$Z_{\text{eff},i}$	The effective impedance seen from port i
$\Phi_{\text{ch}}^{(\pm)}$	The channel potential for the two directions
λ, Z_{ref}	Scale and reference impedance
ω	Angular frequency

Question	Answer
What does it do?	It defines the effective impedance from the reflection coefficient, and from it the directional channel potential
Why does it do it?	A single canonical definition is needed to prevent different models from using the same quantity in different forms
How does it do it?	It uses the standard reflection–impedance relation of transmission-line theory; it writes the potential as a logarithmic ratio with respect to a reference
What result is expected?	That the correspondence $\Phi_g \leftrightarrow \Phi_{\mathrm{ch}}$ of 8.7 is calibrated through this definition
What result is obtained?	**It is a recorded reference definition** (definedness conditions below); the physical bridge is **To Be Addressed Later**

Note on complex values and the domain of definition. The reflection coefficient is in general complex; therefore Z_{eff} and its logarithm may also be complex, and the logarithm is multivalued. The quantity to be compared with a real gravitational potential is **the amplitude potential**; the phase is carried as a separate observable:

$$\Phi_{\mathrm{ch}}^{\mathrm{gen}} = \lambda \ln \left| \frac{Z_{\mathrm{eff}}}{Z_{\mathrm{ref}}} \right|, \qquad \phi_{\mathrm{ch}} = \arg \frac{Z_{\mathrm{eff}}}{Z_{\mathrm{ref}}} \text{ (with the branch choice stated)}, \qquad S_{ii} \neq 1, \;\; Z_{\mathrm{eff}} \neq 0$$

Symbol	Meaning
$\Phi_{\mathrm{ch}}^{\mathrm{gen}}$	The real amplitude potential
ϕ_{ch}	The phase of the impedance ratio
$\arg$	The argument (angle) of a complex number

Question	Answer
What does it do?	It gives the well-defined way of extracting a real potential from a complex impedance
Why does it do it?	For $S_{ii} = 0.2 + 0.3i$ one gets $\ln Z_{\mathrm{eff}} \approx 0.370 + 0.604i$; for $S_{ii} = i/2$, $Z_{\mathrm{eff}} = 0.6 + 0.8i$ and $\ln Z_{\mathrm{eff}} \approx 0.927i$ ($Z_0 = Z_{\mathrm{ref}} = 1$): the direct logarithm does not give a real potential
How does it do it?	It separates amplitude and phase; it removes the points $S_{ii} = 1$ (infinite impedance) and $Z_{\mathrm{eff}} = 0$ from the domain of definition
What result is expected?	That the amplitude potential is used in comparison with a gravitational reading; that the phase effect is tested as a separate observable
What result is obtained?	**It is a repair of mathematical well-definedness**, not an ontological change. If it is to be read as a gravitational potential, one must have $[\lambda] = \mathrm{m}^2\,\mathrm{s}^{-2}$. Which form (amplitude, phase or both) is physical requires separate justification; the Φ_{ch} of 8.7 is read in this amplitude form

17.1b Operational measurement protocol — model test

If the channel bridge is to be tested, an example vector network analyser (VNA) / CMT protocol is:

1. $S_{21}(\omega)$ and $S_{12}(\omega)$ are recorded with two-way scattering measurements.
2. $\chi_S(\omega)$ is produced under the same instrument and calibration conditions.
3. $\chi_S \simeq 1$ is verified in a reciprocal control regime.

4. If there is an active or non-reciprocal component, its source is measured separately; the inference "we saw asymmetry = gravitation" is not made.
5. If the Φ_χ or $\mathbf{g}_\chi$ bridge produces a preregistered band, it is compared with independent data.

Soft kill: if channel asymmetry cannot be tied independently to a physical gravitational reading, **the bridge line closes**, not the core ontology.

17.1c The CMT model scaffold

One of the standard coupled-mode forms can be used as a computable model language for channel asymmetry. To avoid confusion with the Γ of 7.2, the damping / loss matrix is denoted here by Γ_{CMT}:

$$S(\omega) = C + D\,[\,i(\omega I - \Omega) + \Gamma_{\mathrm{CMT}}\,]^{-1} K^{\mathsf{T}}$$

Near a resonance, an approximate reading of asymmetry depending on the chosen port / mode normalization is:

$$\chi \approx \frac{|d_2 k_1|}{|d_1 k_2|}$$

Here, for $S = C + DRK^{\mathsf{T}}$, $D = (d_1, d_2)^{\mathsf{T}}$, $K = (k_1, k_2)^{\mathsf{T}}$, one has $S_{21} = C_{21} + d_2 R k_1$ and $S_{12} = C_{12} + d_1 R k_2$; the ratio holds when the direct-path components are negligible. If Λ in the channel potential depends on position, then $-\nabla\Phi_\chi = -\Lambda\nabla \ln \chi_S - (\ln \chi_S)\nabla\Lambda$; the last term drops only if Λ is constant in space. The operational signature of a breaking of reciprocity, and the single-port effective-impedance reading:

$$\boxed{S_{21} \neq S_{12}} \qquad\qquad Z_{\mathrm{eff},i} = Z_{0,i}\,\frac{1 + S_{ii}}{1 - S_{ii}}$$

Symbol	Meaning
C	The direct (non-resonant) path scattering matrix
D, K	Coupling matrices from modes to ports and from ports to modes
d_1, d_2, k_1, k_2	Coupling components for a single mode
Ω	The matrix of mode frequencies
Γ_{CMT}	Damping / loss matrix
R	Resonant response $[\,i(\omega - \Omega) + \Gamma_{\mathrm{CMT}}]^{-1}$
I	Identity matrix

Question	Answer
What does it do?	It computes the scattering matrix from the couplings of resonant modes and gives the approximate form of the asymmetry ratio near resonance
Why does it do it?	A computable model is needed to tie channel asymmetry to measurable hardware parameters
How does it do it?	It uses the standard coupled-mode-theory form; if the direct path is small, it reduces the ratio to a ratio of coupling coefficients
What result is expected?	That in a reciprocity-breaking structure $S_{21} \neq S_{12}$ is designable and measurable

Question	Answer
What result is obtained?	CMT is the computable **model language** of channel asymmetry; it is not the ontological bridge candidate itself. Matrix dimensions, port normalizations and the notations $C, D, K, \Omega, \Gamma_{\mathrm{CMT}}$ depend on the chosen realization. $S_{21} \neq S_{12}$ alone does not count as a verification of gravitation or of Evertophy

17.2 Open debts

This line is A CANDIDATE BRIDGE — it is NOT an established derivation.

Debt	Content
Factor indeterminacy	The expression for Λ fixes only the **product**; the factors remain free
Exogeneity of source	The scale coefficient is taken from an external source
The source of the asymmetry	In media satisfying the reciprocity conditions, $S_{21} = S_{12}$; passivity and time invariance alone do not guarantee this (ferrite systems under static magnetic bias are passive but non-reciprocal). The link of the asymmetry to gravitation **has not been established**

The pattern of FIXING THE PRODUCT WHILE LEAVING THE FACTORS FREE: the unknown DOES NOT CLOSE, it CHANGES PLACE.

17.3 Warning on structural similarity

STRUCTURAL SIMILARITY IS NOT VERIFICATION. Borrowing a notation DOES NOT IMPORT A RESULT.

17.4 The χ_S definition set (model candidate)

The single authority for definitions is 17.1c; for the reciprocity limit see 17.1. The completed archive form of the definition in 17.1:

$$\chi_S \equiv \frac{|S_{21}|}{|S_{12}|}, \qquad \Xi = \ln \chi_S, \qquad Z_{\mathrm{eff},i} = Z_{0,i} \frac{1 + S_{ii}}{1 - S_{ii}}$$

Near resonance, the approximate single-mode reading is $\chi \approx |d_2 k_1| / |d_1 k_2|$ (when the direct-path components are negligible; dependent on port / mode normalization).

17.5 The three-factor decomposition and range-value form

Status: The mechanical × coupling × resistance decomposition is a model assignment; without independent measurement and definition of the factors, it is not a derived law.

$$\chi_S = \chi_{\mathrm{mek}} \cdot \chi_{\mathrm{bağ}} \cdot \chi_{\mathrm{dir}}, \qquad \chi_S \in [\chi_S^-, \chi_S^+]$$

Symbol	Meaning
χ_{mek}	Mechanical asymmetry contribution
$\chi_{\text{bağ}}$	Coupling asymmetry contribution
χ_{dir}	Resistance / loading effect
$[\chi_S^-, \chi_S^+]$	The range value of the asymmetry ratio

Question	Answer
What does it do?	It decomposes the asymmetry ratio into the product of three physical sources and writes it as a range value
Why does it do it?	To be able to tell from which source a measured asymmetry comes
How does it do it?	It defines each source as a separate factor; it carries the uncertainty with the Range Formalism
What result is expected?	That the factors are fixed separately by independent measurements
What result is obtained?	**It is a model assignment.** Fixing the product Λ while leaving the factors free is forbidden (17.2). The corrected ruling of 21.6 also applies here: a claim of derivation through a range is meaningful only if the bridge has been frozen

17.6 The channel potential

This is the reading, in the language of potentials, of the definition $\Phi_\chi = \Lambda \ln \chi_S$. When reciprocity is not broken, $\Phi_\chi \equiv 0$; the potential is meaningful only when the source of the asymmetry is physically defined (the safeguard of 17.1). Φ_χ is not identified with the historical symbol $\Phi(x)$ of 4.2.

17.7 Necessary conditions for breaking reciprocity

The local statement, on this line, of the classes of mechanism in 8.8 is: in a linear medium satisfying the reciprocity conditions (containing no magnetic bias or time modulation), $S_{21} = S_{12}$; passivity alone does not guarantee this. $\chi_S \neq 1$ does not require an active element; a concrete reciprocity-breaking physical class (for example, static magnetic bias) is sufficient. The inference "we saw asymmetry = gravitation" is forbidden (17.1b).

17.8 The principle of the inversion of causality

The candidate principle in the archive is: the source of a directional asymmetry observed in a channel is not "a weakening of causality" but the projection of the structural priorities of the channel. The directional reading refers not to the source but to the carrier. This principle is at the model level; it adds no ontological interpretation of causality.

17.9 The χ_S ≈ 137 hypothesis — status and red-flag record

In the archive, an attempt was made to relate χ_S to the fine-structure constant. The recorded status:

> The $\chi_S \approx 137$ hypothesis is not taken into the canon until the fitting–derivation distinction is resolved.

Red flag	Why
Exogeneity of source	The scale coefficient Λ is taken from outside
Factor indeterminacy	Product fixed, factors free
Absence of asymmetry	In a reciprocal system $\chi_S \equiv 1$ — a testable instance of the hypothesis is undefined

This hypothesis produces no counter increment; unless it is turned into a preregistered bridge test, it remains **an open debt**.

SECTION 18

QUANTUM PHENOMENA

18.0 Quantum behaviour and the phase regime–threshold boundary

The subatomic level lies on **the phase regime–threshold boundary** between c^+ and C_m — just like light on the $v = c$ boundary. By the author's ruling: a structure on the boundary of the c threshold regime is at the same time on the boundary of the c^+ regime. This is not a contradiction; lying on **the shared boundary** of two regimes does not mean being a member of both (boundary ≠ membership).

$v = c$: the liminal shared boundary of C_m and c^+ lying on the boundary $\neq$ being a member of two phases

There is no time, and no time-dependent constraint, in c^+. For this reason the concept of time becomes indeterminate for a structure on the boundary: seen from the C_m side, time runs; on the c^+ side, it is not established. Wave–particle duality, the measurement problem and the apparent inconsistency of quantum behaviour with time are read as behaviours of this boundary; measurement, by contrast, always takes place in C_m.

Question	Answer
What does it do?	It reads the oddities of quantum behaviour as consequences of lying on the shared boundary of c^+ and C_m
Why does it do it?	To connect quantum behaviours that appear inconsistent with time (delayed choice, entanglement) with the ontology in which time is established only in C_m
How does it do it?	It places the subatomic level on the phase regime–threshold boundary (25.1); the similarity with light is that both are boundary phenomena — not the same boundary parameter (the two axes below); it keeps separate the state of time on the two sides of the boundary (established in C_m, absent in c^+)
What result is expected?	That Born probabilities, interference, Bell correlations, contextuality and no-signalling are recovered in the same model
What result is obtained?	It is **a reading**; it does not touch the measured predictions of quantum mechanics. For it to become a physical explanation, the recoveries above are required, and they **are open**

Two axes: kinematic membership and the phase boundary. Massive subatomic particles such as the electron, the proton and the neutrino are kinematically in the band $0 < v < c$ and **are members of C_m**. That they lie "on the phase regime–threshold boundary" does not mean that they lie on the kinematic boundary $v = c$; it is a boundary defined on a separate axis — the axis of phase coherence / quantum readout. The kinematic boundary $v = c$ is reserved for light (massless particles) only:

$$\beta = \frac{v_{\text{üyelik}}}{c} \in (0,1) \ \text{(kinematic membership axis)},$$
$$q_\partial \ \text{(phase boundary / quantum readout axis)},$$
$$\text{light: } \beta = 1$$

Symbol	Meaning
β	Dimensionless kinematic membership reading
$v_{\text{üyelik}}$	Membership reading (not the laboratory coordinate speed; 3.3)
q_∂	Reading of proximity to the phase regime–threshold boundary (its type and measure are open)

Question	Answer
What does it do?	It writes the C_m membership of massive subatomic particles and their quantum boundary behaviour on two separate axes
Why does it do it?	If the expression "the subatomic level lies on the same boundary as light" were read literally, it would contradict the $0 < v < c$ membership of massive particles
How does it do it?	It defines the kinematic boundary on the β axis and the phase regime–threshold boundary on the q_∂ axis; a particle can be a member of C_m with $\beta < 1$ while showing boundary behaviour with respect to q_∂
What result is expected?	That the type and measure of q_∂ are defined
What result is obtained?	The author's ruling (lying on the boundary, boundary ≠ membership) **is preserved unchanged**; only which boundary is meant is made explicit. q_∂ is open (APPENDIX K.1)

As an example, **neutrino oscillation** — the change of flavour of neutrinos during travel — is a robustly measured phenomenon and a candidate for the reading of lying on the phase-threshold boundary. The 2011 measurement claiming that neutrinos travel faster than light was withdrawn as a measurement error; Evertophy does not rely on that result.

18.1 Entanglement

$$\boxed{c^+ \text{ IS NOT A COMMUNICATION CHANNEL.}}$$

This is the critical constraint that preserves the prohibition of signalling. The correlation of two entangled particles can be interpreted as a reading of c^+ in C_m; but no controllable information can be sent through this correlation.

The reading of quantum teleportation. In quantum teleportation experiments, the transfer of a state necessarily requires that measurement results be transmitted through **a classical channel** (without exceeding the speed of light). In the Evertophy reading, c^+ is **the source of the correlation** of the transfer; it is not the channel that carries the information. Information travels through the classical channel of C_m, at most at the speed of light. This reading is **a compatible reading** of the measured results of the experiments and does not overstep the prohibition of signalling.

$$\boxed{\text{Teleportation} = \underbrace{c^+ \text{ source of correlation}}_{\text{reading}} + \underbrace{\text{classical channel}}_{C_m,\ \leq c}}$$

Question	Answer
What does it do?	It limits the role of c^+ in entanglement and teleportation to that of a source of correlation
Why does it do it?	Giving c^+ the role of a signal channel would contradict the measured prohibition of signalling of relativity and quantum mechanics
How does it do it?	It separates the transfer into two components: the correlation read from c^+, and the classical information channel in C_m
What result is expected?	That Bell correlations and no-signalling are recovered quantitatively in the same model
What result is obtained?	**It is a compatible reading.** Honest record: Evertophy **does not explain** entanglement; it proposes a reading framework

18.2 The phase dictionary

The following correspondences are **historical / conceptual analogies or model candidates** — they are not core ontology and not derivations:

Phenomenon	Phase reading
Spin	The state label of a structural node on C_m
Pauli exclusion	An address-collision barrier in the recording protocol
Quantum Zeno	Continuous measurement freezes the rhythm of sealing
Tunnelling	Loosening of the record, crossing of the barrier, resealing
Delayed choice	Consistency of the sealing decision independent of the time index
Uncertainty	The finite resolution of the C_m reading

> None of them produces a PREDICTION DIFFERENT from standard quantum mechanics.

18.3 The status of quantum field theory

> Quantum field theory is NOT AN ALTERNATIVE to Evertophy; it is the EFFECTIVE COMPUTATIONAL LIMIT in the C_m phase.

This is the direct application of the framework's third principle: a mathematical representation that correctly reproduces a measurement is accepted unconditionally within the scope of that measurement; there is no ontological priority among representations. The vacuum state of quantum field theory is likewise the computational language within C_m of the identity $c^+ \equiv$ vacuum (Section 3).

The rule of structural separation

> The main text is PURE PHASE ONTOLOGY. The tools of quantum field theory are an ADDITIONAL LAYER that TRANSLATES C_m calculations.

It is proposed that the parameters of quantum field theory may in principle depend on phase; the form of these dependences is not known.

18.4 The production of matter from the vacuum

Calculations of particle production on a changing background assume **a given metric**; in Evertophy geometry is an output of C_m.

> These tools may be used WITHIN C_m; they CANNOT BE APPLIED to the $c_0 \to C_m$ transition.

Under the identity $c^+ \equiv$ vacuum, the production of particles from the vacuum by a strong field (the Schwinger mechanism), or pair production from high-energy photons, is read as **a local phase transition triggered by external energy on the $c^+ \to C_m$ edge** (candidate reading). All measured and calculated results remain fully valid as the C_m computational language of quantum field theory.

Question	Answer
What does it do?	It reads the production of matter from the vacuum as a phase transition under the identity $c^+ \equiv$ vacuum
Why does it do it?	If the vacuum is the laboratory reading of c^+, the birth of matter from the vacuum is the appearance in C_m of a transition from c^+ to C_m
How does it do it?	It leaves the calculation to quantum field theory; it adds only the ontological label (the Δ_{+m} edge, triggering by external energy)
What result is expected?	One-to-one agreement with the standard results for threshold fields and production rates
What result is obtained?	**It is a candidate reading**; it produces no new numerical prediction. The same tools are not applied to the $c_0 \to C_m$ transition, because in c_0 the metric is not yet established

18.5 Laboratory analogues

Bose–Einstein condensation (BEC) and superfluidity are laboratory examples of **collective and coherent behaviour**.

Author's ruling: The BEC is not c_0; **it is the environment in the matter phase that is closest to the c_0 environment.** The gathering of atoms into a single quantum state is the best way of looking from within C_m at the c_0 intuition of an integrated single structure; but the BEC is still in C_m: it has time, a metric and a measurable particle structure.

> BEC $\neq c_0$; BEC = the environment in the matter phase closest to the c_0 environment

> The correspondence superfluid $\to c^+$ is NOT USED.

The reason is this: the distinctive property of c^+ is not coherence but **the dissolution of C_m matter support**.

Question	Answer
What does it do?	It puts laboratory condensates in the right place in the phase architecture
Why does it do it?	Identifying the BEC with c_0 would be a category error; but cutting it off completely from the c_0 intuition would lose an instructive bridge
How does it do it?	It keeps the BEC as a member of C_m; it positions it as "the C_m environment closest" to c_0; it forbids mapping the superfluid onto c^+
What result is expected?	That BEC experiments provide a qualitative testing ground for the c_0 single-structure intuition
What result is obtained?	It is an author's ruling; the "closeness" of the BEC to c_0 has not been defined quantitatively

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18.6 Write protection in entanglement

The candidate reading in the archive: entanglement is modelled as a "write-protected correlation store" that is effective in c^+.

Concept	Evertophy reading
Sealing	Writing
Recall	Reading
Entanglement	A write-protected correlation store effective in c^+
Signalling	Blocked because of the families of recall

The sentence "distant correlations can be recalled but not changed" is a model candidate; it is consistent with the prohibition of signalling, but not derived from it.

18.7 Jitter = a candidate information carrier

The proposal that time jitter at the Planck scale may be an information carrier is preserved in the archive:

$$\Delta t \sim \sqrt{\frac{G\hbar}{c^5}} \approx 5.39 \times 10^{-44}\ \mathrm{s}$$

Symbol	Meaning
Δt	The jitter scale of the order of the Planck time
G, $\hbar$, c	Gravitational constant, reduced Planck constant, speed of light

Question	Answer
What does it do?	It gives the smallest meaningful scale of C_m time as the Planck time and counts it as a candidate information carrier
Why does it do it?	To ask, on the view that time is a reading established in C_m, whether this reading has a resolution limit
How does it do it?	It builds the time scale from the fundamental constants by dimensional analysis

Question	Answer
What result is expected?	That the jitter budget is related to information capacity
What result is obtained?	The archive notes (an upper bound on the jitter budget of ~10^{-44} s; corresponding frequency ~10^{44} s^{-1}) are kept as **a record of information capacity**. It has not been shown that the jitter really has this character, and it vanishes by itself under CMT linearization

18.8 The commit / rollback ontology

A commit / rollback language for quantum superposition: superposition is "an uncommitted draft area", measurement is the "commit" operation.

> Superposition = uncommitted draft area; measurement = commit. Rollback does not take place in C_m after the commit.

This is a model candidate — an import from the language of computing, not an ontological declaration.

18.9 Entanglement swapping — chained entanglement

The archive reading of entanglement swapping is "a chain of commits". Correlation cannot be transferred without the mediation of a Bell measurement; this reading is consistent with the prohibition of signalling and does not overstep it. The whole family of analogies treated as "c^+ = network, EPR = short circuit, entanglement = write-protected correlation" is at the model level.

18.10 The three-stage nested double slit — a physical model

The physical model in the archive for a double-slit arrangement with an intermediate layer: the level φ_b is tied to c^+; the interference pattern arises from the correlation $d\Phi(x)$. The candidate statement of the resolution of timelessness is: "c^+ is persistent; C_m time is derived; superposition is intra-phase persistence." This is **a compatible reading**, within the framework, of delayed-choice experiments — not a derivation but a candidate interpretation, and it does not derive the Born rule.

18.11 The reading of quantum uncertainty as imaging noise

The candidate reading of the uncertainty principle as "the finite-resolution noise of the C_m reading" has the same status as the constraint of 15.3: unless it derives the standard probabilities and the Born rule, it does not count as a physical bridge. The uncertainty relations are preserved in their stated forms:

$$\Delta x\,\Delta p \;\geq\; \frac{\hbar}{2}, \qquad \sigma_x\,\sigma_p \;\geq\; \frac{\hbar}{2}$$

Symbol	Meaning
Δx, Δp	Uncertainties of position and momentum
σ_x, σ_p	Standard deviations of position and momentum

Symbol	Meaning
$\hbar$	Reduced Planck constant

Question	Answer
What does it do?	It proposes reading quantum uncertainty as the finite resolution of the C_m screen
Why does it do it?	To relate uncertainty naturally to the fact that measurement belongs to C_m
How does it do it?	It preserves the standard relations as they are; it adds a reading only in the interpretive layer
What result is expected?	That the reading derives the Born rule and the standard probabilities
What result is obtained?	The relations are measured physics and are accepted unconditionally; the reading is **a model candidate**, not the current core

18.12 Note of comparison with interpretations of quantum mechanics

Interpretation	Relation to Evertophy
Copenhagen	Parallel emphasis on measurement; the "observer" is not an ontological class (15.6)
Many worlds	The archive / branch language is not confused with c^+; c^+ is not a many-worlds structure
Pilot wave (Bohm)	The hidden-variable programme is not imported into the core
QBism	No separate heading has been opened owing to insufficient source support; preserved at the level of a note
Relational quantum mechanics (RQM)	Parallel interaction-centred language of measurement (7.11d)

> Evertophy chooses no interpretation; it repositions measurement in the language of phase / readout / sealing (15.3).

SECTION 19

TOPOLOGY

19.1 The current topology

Complete bidirectional triangle: $c_0 \leftrightarrow C_m,\ C_m \leftrightarrow c^+,\ c_0 \leftrightarrow c^+$

Each of the three phases is directly connected to the other two (K3). Two of the edges touch C_m and carry stamps (Δ_{0m}, Δ_{+m}); the third (Δ_{0+}) does not touch C_m and is stampless. C_m is **the epistemic centre** — we measure everything from there —, but it is not a topologically mandatory intermediary: there is a direct edge between c_0 and c^+ that does not pass through C_m.

19.1a The complete triangle is independent of dimension

That the phase gates form a complete triangle is a **type** property; it does not depend on a particular geometry. A counterexample makes this clear: wells placed only on a line form a chain and cannot give a complete triangle; but on a circle, a potential such as $V(\theta) = -A\cos 3\theta$ gives a complete triangle in one dimension. Consequently, the generalization "at least two dimensions are required for a complete triangle" is wrong and has been withdrawn.

Two-dimensional realizations are at the **model** level. In the ideal equilateral Gaussian landscape, as the well width σ increases, the structure passes through three regimes: complete triangle, central star and single node. The Euclidean structure of the readout space is a C_m representation; it attributes no Euclidean structure to c_0 or c^+. The claim that the disk realization is "canonical" or "unique" has also been withdrawn.

Equation set — phase topology: Morse landscape and the complete triangle

It is canon that the transitions among the three phases form **a complete triangle** (K3). The question is: how is this structure realized in a potential landscape, and how many dimensions are needed?

$$\chi = m - s + M \quad (\text{disk: } 3-3+1=1;\ \ S^1 : 3-3=0)$$

$$V(\theta) = -A\cos 3\theta, \quad \theta \in S^1 \quad (\text{counterexample})$$

$$V(\mathbf{x}) = -A\sum_{i=1}^{3} \exp\Big(-\frac{|\mathbf{x}-\mathbf{v}_i|^2}{2\sigma^2}\Big), \qquad \mathbf{v}_1 = (0,1),\ \ \mathbf{v}_{2,3} = \Big(\mp\tfrac{\sqrt{3}}{2}, -\tfrac{1}{2}\Big)$$

$$H(0) = \frac{3A(2\sigma^2-1)}{2\sigma^4}\, e^{-1/2\sigma^2}\, I \ \Rightarrow\ \sigma^* = \tfrac{1}{\sqrt{2}}, \qquad \sigma_{\text{fold}} \approx 0.7391346294$$

σ regime	(m, s, M)	Adjacency graph
$0 < \sigma < 1/\sqrt{2}$	(3, 3, 1)	K_3
$1/\sqrt{2} < \sigma < \sigma_{\text{fold}}$	(4, 3, 0)	$K_{1,3}$
$\sigma > \sigma_{\text{fold}}$	(1, 0, 0)	Single node

Symbol	Meaning
V	The potential in readout space
θ	The angular coordinate on the circle
(m, s, M)	Numbers of minima, saddles and maxima
χ	Euler characteristic
K_3, $K_{1,3}$	Complete triangle; one centre + three arms (star)
$\mathbf{v}_i$	The vertices of an equilateral triangle (on the unit circle)
σ	Width of the Gaussian wells
A	Well depth ($A > 0$)
$H(0)$	The Hessian matrix of the potential at the centre
σ^*	The threshold at which the centre turns from a maximum into a minimum
σ_{fold}	The fold threshold at which the saddles disappear

Question	Answer
What does it do?	It computes how the complete-triangle phase topology can be realized in a potential landscape, and in which parameter range it breaks down
Why does it do it?	To test generalizations such as "at least two dimensions are needed for a complete triangle" and "the disk is the only canonical realization"
How does it do it?	With Morse theory it ties the numbers of critical points to the Euler characteristic; it builds a one-dimensional counterexample on the circle; in two dimensions it computes analytically the Hessian of the Gaussian wells at the centre
What result is expected?	Exact values of the regime thresholds and the independence of the complete triangle from geometry
What result is obtained?	The typed gate K3 **is proven** (★). The circle, disk and Gaussian realizations are **models**; the ideal Gaussian regimes **are correct** (model). The full range certificate **is partial**. The claims "$d_{\min} = 2$", the canonicity of the disk and "Morse-7" **are wrong** and have been withdrawn

19.2 Additional topological structures are not imported

> Extra dimensions, torsion structures, Chern–Simons terms, supersymmetry, a multiverse — NONE of them is imported into the core.

If these are needed, they **must be justified separately**, and their parameter cost must be counted explicitly. This is also consistent with the ruling of three-dimensional flat Euclidean space in 9.2a: there is no extra dimension in the base space of Cm.

19.3 A known structural constraint

In a structure with a single independent cycle, the image of representations is cyclic — and hence commutative. This means that the whole of a non-commutative gauge group cannot be generated from the bare cycle. On the other hand, a unitary holonomy **can be assigned** to the

single cycle: for every unitary U, $\rho(n) = U^n$ is a representation. For example:

$$U_{jk} = \frac{\omega^{jk}}{\sqrt{3}}, \quad \omega = e^{2\pi i/3}, \;\; j,k = 0,1,2; \qquad J = \mathrm{Im}\big(U_{00}U_{11}U_{01}^{*}U_{10}^{*}\big) = \frac{\sqrt{3}}{18} \neq 0$$

Symbol	Meaning
$\rho(n) = U^n$	The representation corresponding to going around the single cycle n times
U	Unitary matrix (example of the 3×3 discrete Fourier matrix)
ω	The third root of unity
J	A Jarlskog-like phase invariant (measure of CP violation)
*	Complex conjugate

Question	Answer
What does it do?	It shows the limit that single-cycle phase topology places on gauge and mixing structures, and the possibility it leaves open
Why does it do it?	To test the claim that the CKM / PMNS mixing matrices would come "by themselves" out of the phase triangle
How does it do it?	It shows that the representations of the singly generated fundamental group are cyclic; it nevertheless computes, with a concrete example, that a unitary holonomy can be assigned and that this can give a non-zero CP phase
What result is expected?	That the additional physical structure that selects particular mixing values is found
What result is obtained?	The correct ruling is: **the bare phase topology does not by itself select particular CKM / PMNS mixing values; additional physical structure is required for this selection.** The single-cycle holonomy approach is open as an alternative and awaits physical derivation

This is a STRUCTURAL CONSTRAINT — if additional structure is imported, a PARAMETER COST arises.

19.4 Order sensitivity

The effect accumulated along a cycle can be measured with two different objects: an order-insensitive scalar character and an order-sensitive ordered transport. Abelianization **erases** order information. Since stamps are not invertible, the name "holonomy" is reserved for the invertible sector only; the general case is **ordered transport** (14.8).

19.5 The homology of the bare triangle

If the three-edge structure is taken only as a boundary graph:

$$V = 3, \qquad E = 3, \qquad \beta_1 = E - V + 1 = 1, \qquad \boxed{H_1 \cong \mathbb{Z}, \qquad \pi_1 \simeq \mathbb{Z}}$$

If the triangle is **filled** as a 2-simplex:

$$\boxed{H_1 = 0}$$

Symbol	Meaning
V, E	Number of vertices (phases) and edges (not a potential in this context)
β_1	The first Betti number (number of independent cycles)
H_1	The first homology group
π_1	The fundamental group

Question	Answer
What does it do?	It computes the topological invariants of the phase triangle for two different formalizations
Why does it do it?	To show that the cycle programme (holonomy, mixing) depends on whether the interior of the triangle is regarded as empty or filled
How does it do it?	In the boundary graph it finds a single independent cycle; in the filled simplex it shows that the cycle is contractible and the homology vanishes
What result is expected?	That the question "boundary or filled simplex?" is closed by a separate formal decision
What result is obtained?	The image of every representation of the singly generated fundamental group is cyclic; the bare single cycle does not by itself generate a non-commutative gauge structure and does not select particular mixing values. Assigning a unitary holonomy to the single cycle is possible (19.3). The choice does not change the ontological existence of the three edges

19.6 Torsion and the cost of additional structure

In the bare boundary triangle, $H_1 \cong \mathbb{Z}$ is torsion-free. Consequently, a $\mathbb{Z}_k$ condition such as

$$W^k = I$$

does not come free from the topology; it imports additional cells, relations or representation structure and incurs a parameter / bridge budget cost. Here W is the cycle holonomy, k an integer and I the identity matrix.

19.7 Character and order-sensitive representation

Order-insensitive additive information can be kept with the abelianized character. For order-sensitive content, a representation such as

$$\rho : M \to \mathrm{End}(V)$$

is needed. If $\rho(M)$ lies in an invertible subsector, the language of holonomy can be used; for the general monoid effect, "ordered transport" is the more accurate term.

SECTION 20

THE STANDARD MODEL AND GENERAL RELATIVITY

20.1 Aim and present status

The aim is to turn the constants of the Standard Model from arbitrary inputs into solutions of the phase structure.

> NO DERIVED number or narrow range HAS BEEN PRODUCED for any Standard Model constant.

20.2 Assignment of mechanism ≠ derivation

> Saying "this constant corresponds to such-and-such a phase event" does not show that the event PRODUCES the number.

If this distinction is not preserved, the framework appears to have "explained" everything while predicting nothing.

20.3 Two different problems

Problem	Question
A — Absolute value	Why exactly this number?
B — Dynamics	How does this quantity change with conditions?

> At present Evertophy has made progress ONLY on B.

20.4 Three machine programmes

Aim: **few inputs → many observables.**

Machine	Chain	Target
1 — Kinetic	X, edges → gauge kinetic coefficients → couplings	Gauge sector
2 — Potential	X, edges → effective potential → scalar sector	Higgs-like quantities
3 — Yukawa	X, edges → Yukawa structures → masses and mixings	Fermion sector

Target value ≠ prediction

> WRITING a TARGET VALUE is NOT PREDICTING it.

Listing an observational value as "a target to be reached" is legitimate; presenting it as "a prediction" is **not.** The real question is always: *why this value?*

Kill tests

Machine	Kill condition
1	If the electroweak consistency relations cannot be reproduced at tree level
1	If the known coefficients of the running of the couplings cannot be reproduced
3	If the mixing matrix is freely fitted — it re-enters covertly as a parameter

CKM and single-cycle holonomy

> The bare phase topology does not select particular CKM / PMNS values; single-cycle holonomy is an alternative and awaits physical derivation (19.3).

The living hypothesis is a relative sector structure; but if it is freely fitted, the parameter budget is violated.

Details of the machines — programme targets only

The research chain for the kinetic machine, the scalar machine and the Yukawa machine can be written as follows:

$$X, \Delta \longrightarrow \{Z_B, Z_W, Z_G\} \longrightarrow \{\alpha_{\mathrm{EM}}, \sin^2\theta_W, \alpha_s\}$$

$$X, \Delta \longrightarrow V_{\mathrm{eff}} \longrightarrow \{v,\ m_H/v,\ \Gamma_{\mathrm{vac}}\}$$

$$X, \Delta \longrightarrow \{Y_u, Y_d, Y_e, Y_\nu\} \longrightarrow \{\text{masses, CKM, PMNS}\}$$

Symbol	Meaning
X, Δ	The dynamic meta-resolver and the phase edges
Z_B, Z_W, Z_G	Kinetic coefficients of the hypercharge, weak-isospin and colour gauge fields
α_{EM}	Fine-structure constant
θ_W	Weak mixing (Weinberg) angle
α_s	Strong coupling constant
V_{eff}	Effective scalar potential
v	Higgs vacuum expectation value
m_H	Higgs mass
Γ_{vac}	Vacuum decay rate
Y_u, Y_d, Y_e, Y_ν	Yukawa matrices of up quarks, down quarks, charged leptons and neutrinos

Question	Answer
What does it do?	It defines three research chains from the phase structure to observables for the three sectors of the Standard Model
Why does it do it?	To make concrete and testable the aim of producing many measured values from few inputs
How does it do it?	It writes each chain through intermediate quantities and defines kill tests for each

Question	Answer
What result is expected?	That the measured couplings, masses and mixings come out without free fitting
What result is obtained?	**They are programme targets**; they do not enter the current list of numerical predictions. No chain has yet been closed

Record of an effective potential with three minima — candidate

The historical development records contain a model candidate that represents the three phase values as effective minima:

$$V(C) = \beta(C - C_0)^2(C - C_m)^2(C - C_+)^2, \qquad \Box C + V'(C) = J_{\text{int}}$$

Symbol	Meaning
C	Effective order-parameter field
C_0, C_m, C_+	The effective minimum values of the three phases
β	Potential depth coefficient
$\Box$	The d'Alembert operator (only in the C_m effective-field realization)
$V'(C)$	The derivative of the potential with respect to C
J_{int}	Internal source term

Question	Answer
What does it do?	It represents the three phases as three minima of a single effective field
Why does it do it?	To try modelling phase transitions in the familiar language of field theory (transitions between minima)
How does it do it?	It builds a sixth-order potential with three minima and writes the field equation with a source term
What result is expected?	Testable transition dynamics, if β, C_i and J_{int} are derived
What result is obtained?	**It is not fundamental phase ontology.** The use of $\Box$ belongs to the C_m effective-field realization and does not insert a metric or tetrad into c_0 / c^+. Without derived correspondences, this form produces no prediction

20.4a Sharper kill tests for the three machines

Machine 1 — kinetic / gauge sector

An example candidate parametrization is:

$$\sin^2\theta_W \overset{\text{aday}}{=} \frac{Z_W}{Z_W + Z_B}$$

The value of this form lies not in substituting the measured $\sin^2\theta_W$, but in being able to show **why a particular ratio Z_W/Z_B necessarily comes out.** One of the comparison targets used for Machine 1 in the archive is:

$$\sin^2\theta_W^{\text{eff}}(M_Z) \approx 0.23149(13)$$

measured comparison value ≠ Evertophy prediction

Before publication or numerical comparison, the **scheme, notation and external source** used must be verified separately. One of the smallest electroweak consistency targets is the recovery of the tree-level limit:

$$\rho_{\mathrm{EW}} = \frac{m_W^2}{m_Z^2 \cos^2 \theta_W} \simeq 1$$

If the structure of the neutral mass matrix and the consistency of custodial symmetry cannot be derived, one does not say "the electroweak derivation is complete". In the strong sector, merely saying "α_s decreases with energy" is insufficient; in the perturbative limit, the known one-loop structure coefficient must be recovered from the correct effective limit:

$$b_0 = 11 - \frac{2}{3} n_f$$

Symbol	Meaning
$\sin^2 \theta_W^{\mathrm{eff}}(M_Z)$	The effective weak mixing angle at the Z-mass scale (measured)
M_Z, m_Z	Z-boson mass
m_W	W-boson mass
ρ_{EW}	The electroweak ρ parameter
b_0	The one-loop beta-function coefficient of the strong coupling
n_f	The number of effective quark flavours

Question	Answer
What does it do?	It makes numerically precise the testable targets and kill criteria for the gauge sector
Why does it do it?	To make it a rule that the claim "the electroweak structure has been explained" can be made only if the known consistency relations are recovered
How does it do it?	It puts side by side the candidate parametrization, the measured value, the tree-level ρ relation and the one-loop running coefficient
What result is expected?	That the ratio Z_W/Z_B comes out necessarily from the phase structure; that $\rho_{\mathrm{EW}} \simeq 1$ and b_0 are recovered
What result is obtained?	**It is a programme target.** The numbers are measured comparison values, not Evertophy predictions

Machine 2 — effective potential / scalar sector

Listing a measured ratio or coupling as a target is legitimate; **a target value is not a prediction.** Adding a free potential function, moreover, can mean infinite functional freedom and is therefore written into the bridge budget.

Machine 3 — Yukawa / flavour sector

The automatic production of the CKM matrix as a non-commutative holonomy by the single cycle of the phase triangle is excluded. The living formal candidate is the relative transport of two sectors:

$$V_{\text{mix}} \overset{\text{aday}}{=} H_u^{\dagger} H_d$$

Symbol	Meaning
V_{mix}	Mixing matrix (CKM or PMNS)
H_u, H_d	The unitary transformations that diagonalize the up and down sectors
†	Conjugate transpose

Question	Answer
What does it do?	It writes the mixing matrix as the relative position of the diagonalizing transformations of the two sectors
Why does it do it?	In the Standard Model mixing arises exactly in this form; Evertophy would need to produce it from the phase structure
How does it do it?	It writes the transport of the two sectors separately and defines the relative transformation as the mixing
What result is expected?	That H_u and H_d come out of the phase structure tied to each other; that a Jarlskog-type invariant is recovered
What result is obtained?	**It is a candidate form.** If H_u and H_d are fitted freely and independently, the mixing matrix covertly re-enters as an input. For CP violation, the phase of the determinant alone is not sufficient

Note on strong CP

Making θ_{QCD} small by adding an exponential suppression parameter moves the fine tuning to another symbol if the suppression scale is free. A strong solution must produce a structural / topological necessity instead of adding new fine tuning. This is **a programme target**, not an existing solution.

20.5 Relation to general relativity

General relativity **is not wrong** — it is the effective language of C_m. But:

> The action used by Evertophy is NOT A FUNDAMENTAL ACTION — it is the EFFECTIVE action of C_m.

20.6 What must be recovered

Target	Status
Newtonian limit, weak field	Accessible through the scalar–tensor language
FRW cosmology	Accessible
Quantum formalism	No bridge
Gauge structure	No bridge; there is a structural constraint
Second law	Partly established

20.7 Inactive lines of derivation

For neutrino masses, the baryon asymmetry, the full Yukawa matrices and the absolute fermion masses, **no effective and natural derivation bridge has been established** today. For this reason they are not at the centre of the current programme of numerical derivation. This statement is not a permanent ontological prohibition; a new bridge can be opened only with a parameter / bridge budget cost and independent kill tests.

20.8 The electron = plasma cloud model (historical)

In an early layer, treating the electron as a "plasma cloud" was tried. In the current core, particles are C_m readout projections (10.3); this model is not brought back. The record is preserved to show the variety of models in the archive.

20.9 The proton mass (QCD) — a literature classification record

Most of the proton mass comes from quantum chromodynamics (QCD); the direct contribution of the Higgs mechanism through the quark masses is small. Exact percentages depend on the decomposition method and are not used without a source. This is a literature record external to the framework:

> Mass is mostly dynamical; this fact does not mean that Evertophy has carried out a derivation of mass.

The proton mass has been predicted from lattice QCD calculations; this is the yardstick of work the framework cannot yet do — not of work it has done.

20.10 The "texture knot" and the question of deriving SU(3)

Reading colour confinement in the language of phase constraints (25.8) is a strong candidate; but whether the SU(3) gauge structure itself can be derived from the phase topology is open. The term "texture knot" was used in the archive to name this question; it is not an ontological term.

20.11 The question of three generations and the mass hierarchy

The question whether the three-generation structure and the fermion mass hierarchy can be derived from the phase structure is open. The measured hierarchy is very wide: the mass ratio of the top quark to the electron is about 3.4×10^5, and its ratio to the heaviest neutrino is of order 10^{12}; since oscillation data place a **lower bound** on the mass of the heaviest neutrino, they bound this ratio **from above**.

$$\frac{m_t}{m_e} \approx \frac{172.7\ \text{GeV}}{0.511\ \text{MeV}} \approx 3.4 \times 10^5, \qquad m_{\nu,\max} \gtrsim 0.05\ \text{eV} \ \Rightarrow\ \frac{m_t}{m_{\nu,\max}} \lesssim \frac{172.7\ \text{GeV}}{0.05\ \text{eV}} \approx 3.5 \times 10^{12}$$

Symbol	Meaning
m_t	Top-quark mass

Symbol	Meaning
m_e	Electron mass
$m_{\nu,\max}$	The mass of the heaviest neutrino, $\max(m_{\nu_1}, m_{\nu_2}, m_{\nu_3})$ (unknown). In the normal ordering it is ν_3, in the inverted ordering ν_2; the bound holds in both orderings
0.05 eV	The lower bound from oscillation data (atmospheric mass splitting): $m_{\nu,\max} \gtrsim \sqrt{\lvert\Delta m^2_{\text{atm}}\rvert} \approx 0.05$ eV

Question	Answer
What does it do?	It sets out numerically the size of the mass hierarchy that must be explained
Why does it do it?	To make explicit which range a claim of derivation must cover
How does it do it?	It takes ratios of measured masses
What result is expected?	That three generations and these ratios come out of the phase structure
What result is obtained?	The numbers are measured context, not predictions. The archive proposal of factors varying for different density levels (1, 20, 1836; 1, ~200, 3500) is preserved as a table record — a numerical match is not a derivation. The order-of-magnitude notation "~10^{55}–10^{17}" in minor12 has been editorially corrected because it was inconsistent with the measured mass ratios

20.12 The question of agreement with QED process amplitudes

Whether Feynman diagrams can be reread within the framework under the condition of agreement with measured process amplitudes is an open question. This question is one of the unclosed ends of the machine programme (20.4).

SECTION 21

EMPIRICAL STATUS AND AUDIT

21.1 The closed line

For a time, the framework's strongest empirical claim was the comparison of data from different physical domains through percentile alignment. Very high correlation values had been obtained.

This line has been permanently closed by internal audit.

Three root errors

#	Error	Repairable?
1	The data were sorted by value, not by time	Yes
2	**There is no physical common key**	**No — structural**
3	The permutation test tested the wrong question	Yes

Structural consequence

The operations of sorting and pseudo-pairing can produce a strong visual and correlation structure even when there is no physical common key. For this reason a high correlation **by itself** is not evidence of a common, hidden physical coordinate.

In the audit, the corrected null / permutation run did not support the claim in question. In the archive transfer record, $p \approx 0.530$ (FAILED) is reported for the corrected run; this number has the status **reported in the archive** and awaits independent final confirmation from the raw-run source. The structural consequence does not change: the multi-domain Xa / Xz / Xt line **has been permanently removed from the status of empirical evidence**.

Prohibition of language

> For this line, the expressions "proven", "locked" and high-sigma CANNOT BE USED.
> Retired constants CANNOT BE BROUGHT BACK.

21.2 Change of direction

> NOT "LOOK FOR correlation in the data" — but "DERIVE A RANGE, then COMPARE".

The five-step protocol is:

#	Step
1	Choose a single target quantity that has data and units
2	Write the chain and **count the free parameters**

#	Step
3	Derive the range — narrower than the prior
4	**PREREGISTER — without looking at the data**
5	Compare

The closed line lost precisely at the fourth step.

The present primary domain of verification

> The primary active domain is NOT multi-domain correlation; it is the "derive a range, then compare" protocols.

The envelope modulation of nuclear binding energy is the first concrete candidate application of this protocol (Section 22).

21.3 The provenance of data must be sealed

> "We sealed it in advance" IS INSUFFICIENT BY ITSELF. The DATA LINEAGE must also be sealed.

What must be sealed: the records that determine the parameters producing the prediction · the target selection · the data version · the held-out test set, if any. Otherwise one obtains a test that "looks blind" but is in fact not blind.

21.4 Present empirical assets

What is in hand are **constraints placed on** Evertophy: weak-field tests, atomic-clock comparisons, bounds on the variation of the gravitational constant, cosmological spectroscopy.

> None of them is a PREDICTION of Evertophy.

21.5 Tools of falsification

Quick-rejection thresholds

A **claim of support or prediction** is **rejected immediately** in the following cases (the refutation of the model or of the model family is a separate ruling, 21.7):

- If the derived range does not intersect the observation range
- If the statistical significance of the claimed effect cannot be established in a blind test (the claim is rejected; this does not mean the model is refuted)
- If it gives a result that erases or shifts known structure (such as measured shell positions)
- If a coefficient was added after the data were seen
- If an active constraint is violated

Early failure S1 — a candidate protocol extracted from the archive

The following thresholds are neither ontological postulates nor Evertophy predictions; they are preserved as **methodological candidates** for model runs to be preregistered in the future:

Check	Candidate decision rule
Background fit	$\chi^2_{\rm red} \leq 1.2$ acceptance region; 1.2–1.5 warning; > 1.5 hard rejection
Growth of structure	$\Delta\chi^2_{\rm growth} \leq 0$ expected
Stability	Ghost / gradient / tachyon pathology → immediate rejection
Effective Planck mass	$M_*^2 \leq 0 \rightarrow$ rejection
Clock / constant cross-check	Inconsistency with $\Delta\alpha \rightarrow$ rejection
Window stability	$\Delta\chi^2 \leq 3$ between windows; > 5 hard brake
Cost of freedom	If the improvement per new parameter is < 2, inflation warning
Effective-field-theory interpretation	If α_M is left free rather than derived, it counts as a post-general-relativity threshold signal
Strong field	EHT / gravitational-wave results are reported not in the language of "horizon" but, within the scope in which they are verified, in the language of "near-horizon"

Symbol	Meaning
$\chi^2_{\rm red}$	Chi-square divided by the degrees of freedom (reduced goodness-of-fit measure)
$\Delta\chi^2_{\rm growth}$	The chi-square difference relative to the reference model in growth-of-structure data
M_*^2	The square of the effective Planck mass
$\Delta\alpha$	The relative variation of the fine-structure constant
α_M	The running rate of the effective Planck mass (an effective-field-theory parameter)

These numbers are not canonical thresholds unless preregistered. For the same reason, the threshold $r_{\rm global} < 0.5$ in the archive is also **a methodological candidate**; it cannot be used as a rescue limit after the data have been seen.

Three observational protocols are kept in the research programme: multi-probe simultaneity (clustering of BAO / $f\sigma_8$ / lensing residual breaks around the same z), the departure of a phase-wall sigmoid form from smooth CPL, and masked locality. These are **not predictions but designs of falsification bridges**; unless the six conditions of 0.4 are satisfied, they do not change the 0/10 counter.

Warning on broad canonical improvement — model note

A multimodal posterior distribution is by itself neither a pathology nor a sign that the model is wrong. A verdict of pathology requires additional criteria such as non-identifiability, branch selection, post-data improvement, instability or physically inadmissible modes. This note gives no licence to "select and report the best mode"; the prohibition of branch-shopping and worst-case reporting apply unchanged.

The intersection measure

The overlap ratio of the prediction and observation ranges can be used as a criterion.

> This criterion is NOT a MODEL-RESCUE tool; it is part of falsification.

Worst-case reporting

> Reporting the fit ONLY WITH THE BEST CASE IS FORBIDDEN. The fit is reported together with the WORST admissible case; for family rejection the best member (inf) is used.

If the improvement of fit per new parameter is below a certain threshold, the model **is buying freedom.**

Families of kill switches

Family	Example
Ontology	Using U_0 as a fourth phase → rejection
Ontology	Attributing a metric directly to c^+ → hard contradiction
Notation	Using the historical kernel in place of the current X → rejection
Data	Data leakage → publication kill
Prediction	Intersection measure persistently low → rejection of the prediction
Overfitting	Range inflation → kill
Bridge	If the bridge line is not supported → soft kill
Tool	A tool declaring its own output canon → rejection of the output

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21.6 The range intersection measure and the discipline of calibration

To quantify the overlap of two ranges, an IOM-like measure can be used:

$$\mathrm{IOM}(B_{\mathrm{pred}}, B_{\mathrm{obs}}) = \frac{\mu(B_{\mathrm{pred}} \cap B_{\mathrm{obs}})}{\mu(B_{\mathrm{pred}} \cup B_{\mathrm{obs}})}, \qquad \mu(B_{\mathrm{pred}} \cup B_{\mathrm{obs}}) > 0$$

$$\mathrm{Compat}(B_{\mathrm{pred}}, B_{\mathrm{obs}}) = \mathbf{1}\left[B_{\mathrm{pred}} \cap B_{\mathrm{obs}} \neq \varnothing\right] \qquad \text{(for every band; point ranges included)}$$

The criterion of hard rejection is:

$$\text{Hard rejection} \iff B_{\mathrm{pred}} \cap B_{\mathrm{obs}} = \varnothing$$

Symbol	Meaning
IOM	Range-overlap measure (width-based Jaccard ratio); defined only when the width of the union is positive
μ	The chosen width measure (length of a range)
Compat	Compatibility indicator: 1 if the intersection is non-empty, 0 if it is empty
$\mathbf{1}[\cdot]$	Indicator function

Symbol	Meaning
B_{pred}, B_{obs}	Prediction and observation bands
$\lvert\cdot\rvert$	Band width according to the chosen measure
$\cap$, $\cup$	Intersection and union
$[P, P]$	Zero-width (point) range

Question	Answer
What does it do?	It measures how much the prediction and observation bands overlap, and defines the condition of hard rejection
Why does it do it?	To decide by a numerical and predetermined rule whether a model is to be rejected
How does it do it?	It divides the width of the intersection by the width of the union; it ties rejection only to the intersection being empty
What result is expected?	A diagnostic score of agreement for bands of positive width; definite rejection for disjoint bands
What result is obtained?	**Hard rejection holds only for an empty intersection** (★ proven). Hard rejection by IOM **is wrong**: if a zero-width prediction $[P, P]$ lies inside the observation band, IOM still comes out 0, but the prediction **is not excluded**. The statement "rejected if IOM = 0" of the earlier version has therefore been corrected

Point ranges. When both bands are of the form $[P, P]$, numerator and denominator are zero and IOM is undefined as $0/0$. In this case only the compatibility indicator Compat is used; $[P, P]$ remains a fully valid Range value. The criterion of hard rejection ($\text{Compat} = 0$, that is, an empty intersection) is written in the same way for all band types.

Band types. Whether an empty intersection means definite rejection depends on the type of the bands. For guaranteed-coverage bands (B_{kesin}), an empty intersection is a logical rejection; for confidence regions ($B_{1-\alpha}$) and Bayesian credible regions ($B_{\text{inanç}}$), an empty intersection is reported as **rejection under the stated uncertainty model and test level**. For example, an empty intersection with an observation band built from the 16–84% quantiles is not automatically a definite falsification. The band type is specified in the preregistration.

This number **is not a universal law of physics**. In the archive, practical or draft thresholds such as 0.5 / 0.6 / 0.8 are seen in different runs; in addition, in the historical cosmological standard of agreement, IOM ≥ 0.7 and $\chi^2_{\text{range}} \leq 1.2$ were recorded as **locked run thresholds**. The value 0.7 is not a universal ontological constant; the final threshold must be calibrated according to the data type, the error model and the preregistered test protocol. The basic meaning does not change:

- A high IOM shows only agreement; it is not verification.
- Increasing the IOM by widening the prediction band afterwards is **overfitting**.

21.7 Worst-case agreement and the cost of freedom

A interval-valued model must not be reported only through its "best point". Agreement is also evaluated with the **worst admissible** behaviour of the preregistered band. If adding a new parameter gives a small improvement in a χ^2 or likelihood criterion, the improvement must exceed the cost of model freedom. The rules of "$\Delta\chi^2$ per new parameter" used in the archive are **methodological candidates**, not universal thresholds.

Equation set — KAP-09: family rejection and range χ²

$$\chi^2(\theta) = \sum_i \left[\frac{y_i - f_i(\theta)}{\sigma_i}\right]^2, \qquad \text{family rejection} \iff \inf_{\theta\in\Theta} \chi^2(\theta) > T, \qquad d\big(y,[l,h]\big) = \max(l-y,\ 0,\ y-h)$$

Symbol	Meaning
y_i	The i-th observed value
$f_i(\theta)$	The model's prediction for the i-th observation with parameters θ
σ_i	The uncertainty of the i-th observation
θ, Θ	The common parameter vector and its permitted set
inf	Infimum (the best fit of the family)
T	Rejection threshold
$d(y,[l,h])$	The distance of a point to the band $[l,h]$ (zero if inside the band)

Question	Answer
What does it do?	It defines when a model family as a whole is to be rejected, and gives the distance of a point to a band
Why does it do it?	To avoid the wrong rule by which the failure of a single member rejects the whole family
How does it do it?	It rejects the family only if even its best member exceeds the threshold; it measures band distance as the amount lying outside the range
What result is expected?	That model families are evaluated with a fair and robust rule
What result is obtained?	For family rejection, **the inf rule is correct**; **the sup rule is wrong**

Family rejection and worst-case agreement

The failure of a single parameter choice in a model family is not the failure of the whole family. **Best-case agreement** matters for whether the family can be rejected as a whole; **worst-case agreement** matters for robustness against parameter uncertainty. The two can be reported together, but they do not replace each other; the worst-case discipline of 21.5 does not break the criterion of family rejection. The absence of a statistically significant result is not automatic refutation; and agreement with data is written not as "the prediction is correct" but as **"not excluded in the stated test"**.

21.8 Classes of kill switches

Class	What it kills	Example
Ontological hard kill	Violation of core type	Making U_0 a fourth phase; assigning a metric to c^+
Bridge soft kill	The bridge line	If χ_S is not tied to gravitation, the channel bridge closes
Data kill	The validity of the test	Data leakage / wrong lineage
Method kill	The statistical protocol	Wrong null model, pseudo-pairing
Overfitting kill	The claim of prediction	Post-data band inflation / adding coefficients
Publication kill	The status of the claim	Presenting a non-blind result as a blind prediction
Tool / AI kill	The source	A tool declaring its own output "evidence"

The kill switch does not destroy the core ontology with every failed bridge; it states explicitly **which layer has been rejected.**

21.9 Classes of error — F / C / R

Kill results do not carry the same epistemic weight:

Class	Meaning	Consequence
F — Fatal	A structural error that stops the core programme	The programme does not advance until the relevant fundamental structure is closed
C — Correctable	A repairable error in a coefficient, limit, scale or similar	A revision is made; the programme continues
R — Retractable	A particular realization / window / route is withdrawn	The theory does not automatically die; route information is produced

The historical F class is recorded with four core examples: direct contradiction from the same assumption; unjustified violation of causality; a fundamental concept remaining mathematically undefined; the retraction / early-failure mechanism itself not working. This list does not mean that **every failed experiment is F.**

$$\boxed{\text{EARLY FAILURE} \neq \text{WHOLESALE FAILURE}}$$

The withdrawal of the old Xa / Xz / Xt empirical line, and the failure of particular bridge tests, are read at the level of **class R** unless shown otherwise. Nor does an R failure mean that the core ontology has been experimentally verified.

21.10 Time-series evidence protocol v0.5

The recorded protocol for time-series analysis has four stages: normalization → residual extraction → cross-correlation → white-noise test. How a record-sealing signature would be tested with this protocol is an open research question; the numerical thresholds of the protocol have not yet been defined in the source.

21.11 Real Pantheon+ H(z) analysis — Evertophy and ΛCDM

A historical run recorded in the source compared the Evertophy reading with ΛCDM on $H(z)$ data:

$$\chi^2_{\min} = 204.7 \quad (\gamma = +0.328,\ n = 300), \qquad \chi^2/\mathrm{dof} = 0.685, \qquad \Delta\chi^2 = +2.7$$

Symbol	Meaning
$\chi^2_{\min}$	Chi-square at the best fit
γ	The Evertophy readout parameter in the run
n	Number of data points
dof	Degrees of freedom
$\Delta\chi^2$	Chi-square difference between Evertophy and ΛCDM (positive: not in favour of Evertophy)

Question	Answer
What does it do?	It tests whether the Evertophy reading fits expansion-history data better than ΛCDM
Why does it do it?	To compare a cosmological reading claim with the standard model on the same data
How does it do it?	It computes the chi-square fit for both models and takes the difference
What result is expected?	A distinctive difference in a preregistered run
What result is obtained?	In this run **there is no advantage in favour of Evertophy.** The record carries its own proxy warnings: Pantheon+ is not a direct $H(z)$ table but Type Ia supernova distance data; a direct comparison requires a reconstruction step and the full covariance. A preregistered rerun is an open task. Counter 0/10

21.12 The triple-CDF Q-Align and ϕ-manifold PCA test

Runs of the triple cumulative-distribution (X, z, t) Q-Align correlation and of the Φ-manifold principal-component-analysis test are preserved in the archive. It is reported that significant deviations were observed even in fully anonymized upper runs; but the structural error of 21.1 (the absence of a physical common key) also limits these lines. All runs are subject to an audit debt — they have no evidential status.

21.13 Null-model tests — C1–C5 and extensions

Test	Content
C1	Time-dependent weight
C2	Three-component random texture
C3	Constant phase difference
C4	Flat universe ($a(t) = H_0 t$)
C5	Constant speed of sound

No null model rejects Evertophy; but none of them supports it either. The task of the null set is to define "expected failures" in advance. The extension null models (shuffled frequency, deterministic phase, noise only, fixed seed) are listed in full in the archive.

21.14 The destruction-test set D1–D5

Test	Fragility
D1	Parameter removal
D2	Changing constants
D3	Breaking the physics
D4	Adding noise
D5	Change of scheme

The purpose of the D set is to distinguish whether success comes from physics or from numerical tuning. A finding that does not pass the D tests shows that it is a fit, not a prediction.

21.15 Falsification protocol for hysteresis and refresh rate

Tests designed for the hysteresis / refresh-rate signatures expected in a phase transition are preserved in the archive: forward / backward ramps, dwell-time trials, frequency-sweep hysteresis. These tests are not predictions; they are protocols to be applied if the bridge line is supported.

21.16 The non-metricity hysteresis test

This is the design of a search for traces of hysteresis due to Weibel / connection anisotropy ($k_{\parallel}$ and $k_{\perp}$) and non-metricity. Findings of research on cosmic magnetism (a smallest scale of ~100 kpc for universal magnetic fields) have been incorporated as context.

21.17 Catalogue of observational anomalies and the five-anomaly stress test

The five stress-test domains recorded in the source are: early galaxies at $z > 10$, the Hubble tension, the "Axis of Evil", the dark matter – MOND debate and the "Little Red Dots". These are the domains in which Evertophy wishes to be tested; for none of them has an Evertophy explanation or prediction been established. The framework's earlier claim about the Hubble tension has been withdrawn three times.

21.18 Cosmic birefringence — note on method

The recorded note on cosmic birefringence is methodological only: phase ambiguity and morphology. Observed angle values and significance levels are not used in this document until supported by direct citation of papers. The relation of the signal to the Evertophy reading is an open research question.

21.19 The in-phase-wave signature test card (preregistered)

The preregistered test card of the in-phase-wave (IPW) line: the parameter space $(A, \omega, \varphi, \mathrm{FWHM}, \rho)$ for the X_T spectral-decomposition signature is defined; if the condition fails, the line closes. Preregistration is the only way for this line to acquire evidential status.

21.20 The BEC / super-atom laboratory package — three falsifiable predictions

Prediction	Observation	Time window	Status
Non-Gaussian pre-freezing signature	In a two-dimensional gas	1–5 years	Open
Separation of a phase-wall sigmoid from CPL	Cosmic	5–10 years	Open
Multi-probe simultaneity (BAO / $f\sigma_8$ / lensing)	Cosmic	10–15 years	Open

None of them has yet satisfied the six conditions of the 0/10 → 1/10 gate (0.4). The BEC in the name of the package is not c_0 itself but **the environment in the matter phase closest to the c_0 environment** (18.5); laboratory results are read not directly about c_0, but through this closeness.

Additional preregistration — the Page corner (thought experiment). In a thought experiment dated 2026-10-13, from the author's definitions according to which c_0 capacity scales with mass ($N = M/m_P$, Section 3), and with the additional definitions in V24 §736 (Y1–Y3) — N alone does not determine the Hilbert-space dimension, the entropy or the correlation curve —, a class of curves departing from standard physics was derived for the measurable correlation between the outside and the core during the outflow of mass from a black hole, and frozen before the data (V24 §736). Today there is no test platform; the preregistration does not satisfy the six conditions of the 0/10 → 1/10 gate and does not change the counter.

21.21 Laboratory protocol draft v0.1 and the phase-selective window

Design records for the microwave / atomic-physics intersection lines: material losses, calibration, reciprocity checks, phase-selective filter windows. The whole is a test design; it is not an experimental result.

21.22 The optical-clock instability channel (Yb / Sr)

Reports of fractional frequency uncertainty of order ~10^{-18} with Al^+ clocks are preserved as context; the framework's own clock-comparison protocol takes no numbers directly from here — it uses them as external constraints.

21.23 Data-set locks — AME2020 / Pantheon+ / frequency ratios

Archive lock records for the external data sets used: AME2020 (together with the Strict Blind Lineage of 22.5), Pantheon+ (21.11), optical frequency ratios (21.22).

> It is forbidden for a data set to be at the same time a source of calibration and of blind verification (22.5).

21.24 Numerical readings in the archive

The archive contains more than twenty numerical readings — for example, islands of stability and large numbers of order 10^{40} and 10^{120}. None of them is a preregistered, distinctive prediction; their inventory and the status of each are kept in the V24 rolling master record (§686). For a numerical reading to count as a prediction, it must be distinctive, preregistered with a kill condition, and its source derivation must be shown. Counter 0/10.

SECTION 22

THE NUCLEAR BRIDGE PROTOCOL

This section describes the first concrete design for applying the "derive a range, then compare" protocol.

22.1 Target

The target is **the modulation of shell strength** in the nuclear binding structure. That is, not *where* the shells are, but *how strong* they are and how this strength changes with mass.

22.1a The nuclear bridge chain — a conditional structural candidate

The target chain of the nuclear programme can be written with a domain reading, without requiring a separate fundamental entity X_A:

$$[X_A] \equiv [\Pi_A(X)], \qquad [X_A], [\Delta_{ij}] \longrightarrow [Z_G] \longrightarrow [\alpha_s(Q)] \longrightarrow \mathcal{F}_{\text{nuc}} \longrightarrow [\Delta_{\text{kabuk}}]_{\text{pred}}$$

Symbol	Meaning
$[\cdot]$	A range value
Π_A	The projection of X in the atomic / nuclear context
X_A	The nuclear-context reading (not a separate fundamental X)
Δ_{ij}	The phase edges
Z_G	The kinetic coefficient of the colour gauge field
$\alpha_s(Q)$	The strong coupling at energy scale Q
$\mathcal{F}_{\text{nuc}}$	The nuclear bridge function
$[\Delta_{\text{kabuk}}]_{\text{pred}}$	The prediction band for the shell gap

Question	Answer
What does it do?	It writes the chain from the phase structure to the prediction band of the nuclear shell gap
Why does it do it?	To apply the "derive a range, then compare" protocol to a measured quantity with units and abundant data
How does it do it?	It goes from the nuclear reading of X to the kinetic coefficient of the colour sector, from there to the strong coupling, the bridge function and the shell gap
What result is expected?	A preregistered narrow band for the shell gap
What result is obtained?	Every arrow is **a bridge that must be derived**; having written the chain is not a prediction. X_A is not a re-canonization of the old correlation variable X_a that failed audit; it is only the notation of a context projection within the current single-X ontology. While the protocol architecture can be conditionally established, the derivation from fundamentals to the nuclear level **is open**

22.2 The two-layer ansatz

$$[\Delta_{\text{kabuk}}]_{\text{ET}} \;=\; [\mu_A] \;\odot\; [\Delta_{\text{kabuk}}]_{\text{yapı}}$$

Symbol	Meaning
$[\Delta_{\text{kabuk}}]_{\text{ET}}$	Evertophy's shell-gap band
$[\mu_A]$	The envelope modulation band depending on the mass number (A) (Evertophy)
$[\Delta_{\text{kabuk}}]_{\text{yapı}}$	The structural gap given by the shell model (positions, magic numbers)
$\odot$	Range multiplication

Question	Answer
What does it do?	It writes the shell gap as the range product of a structural part and a modulation factor
Why does it do it?	To separate formally the fact that Evertophy only modulates the strengths of shells without inventing their positions
How does it do it?	It leaves the structure to the shell model; it gives Evertophy only the A-dependent envelope factor
What result is expected?	That $[\mu_A]$ is derived from the phase structure and compared with measured shell strengths
What result is obtained?	**It is an ansatz**; $[\mu_A]$ has not yet been derived

> Evertophy DOES NOT INVENT shell POSITIONS — it MODULATES THE ENVELOPE.

22.3 Four routes

Route	Method	Priority
α	**Ratios** — cancellation of normalization + ordering map + zero calibration + sealed preregistration	**Primary**
β	Single anchor	Secondary
γ	Absolute normalization + direct bridge function	Tertiary
δ	Residual analysis	Auxiliary

Reason for choosing α: the ratio test is free of normalization; it gives the cleanest intersection test and depends least on the bridge function.

22.4 Kill conditions

Condition	Consequence
Prediction–observation intersection empty	Falsified
It erases or shifts known shells	**Structure-preservation kill**
A mass-dependent coefficient added after the data	**Parameter-budget kill**
An active constraint is violated	Kill

Condition	Consequence
The gauge range refitted to nuclear data	**Blind-projection kill**

22.5 The data-lineage lock — Strict Blind Lineage

What must be sealed: bridge inputs · parameter-production records · target selection · data version · the subset used for training / calibration, if any · the blind held-out set · the freezing time.

"We sealed it in advance" IS NOT SUFFICIENT BY ITSELF.

The basic independence constraint and the freezing rule are:

$D_{\text{türetim}} \cap D_{\text{kör}} = \varnothing$ $\theta_{\text{köprü}}$ is frozen BEFORE the blind data are opened

Symbol	Meaning
$D_{\text{türetim}}$	The data used in deriving the prediction or in calibration
$D_{\text{kör}}$	The data held out for blind verification
$\theta_{\text{köprü}}$	Bridge calibration parameters

Question	Answer
What does it do?	It requires that derivation data and verification data do not intersect, and that the bridge parameters are frozen in advance
Why does it do it?	Both tuning and reporting success with the same data turns a prediction into a fit
How does it do it?	It keeps the data sets disjoint; it locks the parameters before the blind data are opened; it seals the lineage
What result is expected?	A genuinely blind test
What result is obtained?	**It is a rule of method**; it prevents AME2020 or any other data set from being at the same time a source of calibration and of blind verification

Three methodological levels are distinguished:

1. **Strongest:** the prediction band is derived from non-target / fundamental inputs; the nuclear target data do not enter the calibration.
2. **Acceptable:** only a preregistered training subset is used; the bridge is frozen; it is tested on a strictly held-out set.
3. **Not a prediction:** the whole target data set is fitted and success is reported on the same set.

22.6 Status

This line is followed in the nuclear bridge programme as **a conditional structural candidate.**

PROTOCOL ARCHITECTURE CLOSED / DERIVATION FROM FUNDAMENTALS TO THE NUCLEAR LEVEL OPEN

This nuclear bridge line **is not a canonical numerical prediction**; the counter remains at 0/10. That is, *how it is to be tested* is determined; *what is to be predicted* has not yet been derived.

22.7 The use of distant targets

Regions of heavy nuclei not yet synthesized **are not made the main target in the first blind run**. Testing is first done in the measured closure regions.

22.8 The extended semi-empirical mass formula and shell-term corrections

The semi-empirical form in the archive (E_{B0} base + FM two-layer shell correction + βX / $\rho\Omega$ relations) is the structural-candidate layer of Section 22. The critical safeguards of 12.4 remain unchanged:

> Evertophy modulates the envelope; it does not invent shell positions; the FM correction is an external physical calibration.

In this block, the [mod 33] occupancy-element contribution, the [mod 5] correction, the related term and the $\delta_{\text{yüzey}}$ layers are preserved as archive records; none of them counts as a prediction.

22.9 The extended form of κ_i(Φ, s) (including ∇²Φ)

The archive form of the shell-modulation parametrization is:

$$\kappa_i(\Phi, s) = \kappa_i^{(0)} + \kappa_i^{(1)} \frac{\Phi}{\Phi_{\text{ref}}} + \kappa_i^{(2)} \frac{\nabla^2\Phi}{\Phi_{\text{ref}}/L_{\text{ref}}^2} + \kappa_i^{(3)}\, s$$

Symbol	Meaning
κ_i	The i-th shell-modulation coefficient
$\kappa_i^{(0)} \dots \kappa_i^{(3)}$	Constant coefficients of the expansion (free parameters)
Φ	Phase scalar (historical notation; a reading of X)
Φ_{ref}	Reference value
$\nabla^2\Phi$	The Laplacian of Φ (the curvature effect of the local gravitational environment)
L_{ref}	Reference length
s	Structure parameter

Question	Answer
What does it do?	It ties the shell-modulation coefficients to the local phase reading, to its second derivative and to a structure parameter
Why does it do it?	To parametrize the possible effect of the local gravitational environment on shell strengths
How does it do it?	It writes a first-order expansion; it makes each term dimensionless with reference scales
What result is expected?	That the coefficients are derived from the phase structure and frozen

Question	Answer
What result is obtained?	All the coefficients κ_i **are free parameters**; unless they are frozen, there is no claim of derivation

22.10 The full form of Υ(Z, N; Φ) and the E_B record

The archive form of the modulated binding energy is:

$$E_B(Z,N;\Phi) = E_B^{(0)}(Z,N)\cdot\left[1+\Upsilon(Z,N;\Phi)\right], \qquad \Upsilon = \sum_i \kappa_i(\Phi,s)\, f_i(Z,N)$$

Symbol	Meaning
E_B	Binding energy
Z, N	Proton and neutron numbers
$E_B^{(0)}$	Base (standard semi-empirical) binding energy
Υ	Evertophy modulation term
$f_i(Z,N)$	Basis functions depending on shell structure

Question	Answer
What does it do?	It corrects the standard binding energy by a small modulation factor depending on the phase reading
Why does it do it?	To bring the two-layer ansatz of 22.2 into a concrete and computable form
How does it do it?	It writes the modulation as a weighted sum of shell basis functions
What result is expected?	A blind comparison with measured binding energies once the coefficients are frozen
What result is obtained?	Without frozen coefficients **it carries no predictive status**; it is the concrete archive parametrization of the ruling of 22.6, "protocol architecture closed / derivation from fundamentals to the nuclear level open"

The E_B record carries no predictive status unless the coefficients are frozen.

SECTION 23

THE ONTOLOGY OF METHOD

23.1 Context and risk

The framework has been developed by a single researcher, using many AI systems as tools. The greatest risk of this environment is to enter **a self-confirming loop**: the tools learn the researcher's language, the researcher adopts the sentences the tools produce, and in the end no one can distinguish what has genuinely been derived from what has merely been repeated. This section gathers the rules set up to break this loop.

23.2 The architecture of conflicting multiple systems

Several systems are run simultaneously, and information is **deliberately compartmentalized**. No system sees the whole picture. *(This is the pre-marathon Değnek Ambarı ("baton depot") method. In the 23–26 September marathon, by contrast, all the outputs of each round were given to all participants in a single text; the consensus of systems that saw the shared outputs does not count as fully independent verification.)* The researcher remains the sole integrator; only the researcher decides whether an output enters the canon.

The rule of source separation

> All production is SEPARATED into blocks of ARCHITECT SOURCE and TOOL PRODUCTION.

This is not a preference of format but **an epistemic / provenance firewall**. A tool cannot present its own production as evidence.

A known limit

> The CONSENSUS of multiple systems IS NOT INDEPENDENT EVIDENCE.

Since the systems come from similar training distributions, they may drift into the same error at the same time. The closed empirical line (21.1) is a concrete example of this. The general principle of the framework also holds here: **consensus ⇏ canon**.

23.3 The standard of verification

A valid verification includes: explicit steps of derivation · symbolic / computational output · reproducible calculation · an audited trail of equations. Two physical checks are also mandatory:

Scale check. Does the resulting number lie in a physically accessible range?

Notation check. Is the result a function of an arbitrary choice of definition?

ARITHMETIC VERIFICATION IS NOT PHYSICAL VERIFICATION.

Author's ruling — binding models. It is not mandatory to remain bound to theoretical mathematical models that are not derived from observation or experiment; models derived from observation and experiment are binding. For example, the area theorem, which says that the area of a black-hole horizon does not decrease, is an observationally tested constraint; the Bekenstein–Hawking area law, which says that entropy is proportional to area, is by contrast a theoretical result not yet tested by observation. This ruling does not forbid the use of theoretical models.

$$\text{area theorem: } \frac{dA}{dt} \geq 0 \qquad \text{area law: } S_{BH} = \frac{A}{4\ell_P^2}$$

Symbol	Meaning
A	Horizon surface area
dA/dt	The change of area; the theorem says it does not decrease (observationally tested)
S_{BH}	Bekenstein–Hawking entropy (theoretical; not directly measured), in units of k_B
ℓ_P	Planck length

Question	Answer
What does it do?	It separates which external models the framework is bound to and which it is not
Why does it do it?	To make explicit what is binding in case author's rulings such as the capacity scaling of c_0 (Section 3) conflict with untested theoretical results
How does it do it?	It classifies the observationally tested area theorem as a binding constraint, and the not-yet-tested area law as a usable but non-binding theoretical result
What result is expected?	That the framework remains tightly bound to measured physics while staying free with respect to theoretical results
What result is obtained?	It is an author's ruling. The use of theoretical models is not forbidden; their bindingness is tied to observation

23.4 Classification of numbers

Class	What
Postulated	Has neither an external source nor a derivation
External measurement	Taken from data
Fit	Fitted to data
In-branch derivation	Obtained within a model branch
Framework output	Derived from the ontology

A number derived from a postulate is **epistemically weaker** than one derived from an external measurement.

23.5 The parameter budget

$$\boxed{\text{NUMBER OF FREE INPUTS} \;<\; \text{NUMBER OF PREDICTED OBSERVABLES}}$$

This rule counters a recurring error pattern: fixing a **product** while leaving the **factors** free.

Functional freedom

$$D_{\text{model}} = N_{\text{skaler}} + N_{\text{fonksiyonel}} + N_{\text{hiper}}$$

Symbol	Meaning
D_{model}	The total number of degrees of freedom of the model
N_{skaler}	Number of free scalar parameters
$N_{\text{fonksiyonel}}$	Number of parameters of free functions in a finite basis
N_{hiper}	Number of hyperparameters

Question	Answer
What does it do?	It counts the real freedom of a model as the sum of three sources
Why does it do it?	Free functions carry infinite freedom; counting only scalar parameters hides how much the model "buys"
How does it do it?	It makes functions countable by parametrizing them in a finite basis, and adds them to the scalar and hyperparameters
What result is expected?	That D_{model} stays smaller than the number of predicted observables
What result is obtained?	**It is a necessary filter**; identifiability and degeneracy must be addressed separately

Necessary but not sufficient

$$\boxed{\text{Knowing } ab = 6 \text{ is NOT PREDICTING } a \text{ and } b.}$$

The bridge budget

The bridges from the core ontology to observable quantities are also priced separately:

Kind of freedom	Example
Continuous	A new adjustable coefficient
Functional	A free map / functional form
Structural	A new assumption of correspondence, order, selection or topology

Even if $N_{\text{serbest}} < N_{\text{gözlenen}}$ holds in a model, a free bridge function or structural choice can in effect take back the prediction.

$$\boxed{\text{Passing the parameter budget} \;\not\Rightarrow\; \text{predictive closure}}$$

23.6 Numerology and the error of direction

Risk	What
Numerology	The source of the number is unclear
Error of direction	Its source is known, but it enters as an **input** and is presented as an **output**

The second is more insidious. A warning sign is also this: the prior probability of encountering a number that is very common in physics is high; the information content of a match is low.

23.7 The culture of kill tests

$$\boxed{\text{FALSE ENTITY} \neq \text{OPEN DEBT}}$$

The most dangerous state of a theory is not its open hole but **the false ruling it believes to be closed**. An open debt is an honestly written deficiency; a false entity is an error that appears to have closed the deficiency.

23.8 Prohibition of branch-shopping

Alternative models are listed and sealed **in advance**. Looking at the data and choosing the best-fitting branch is forbidden.

23.9 Discipline of language

Forbidden: *"proven"* (outside formal proof), *"physical law"*, *"completed theory"*, *"solved"*. Instead: *"is established"*, *"is a candidate"*, *"is open"*, *"is structurally excluded"*, and for experiments *"is a compatible reading"*.

$$\boxed{\text{If language loosens, accounting loosens.}}$$

23.10 The layer of formal verification

The ontological constraints of the framework have been encoded at the type level in Lean-based formal packages. The pre-marathon project inventory contains the following count:

$$\boxed{66 \text{ old} + 53 \text{ V03} = 119 \text{ theorem declarations}}$$

In the source archive, a clean `lake build` is reported in one run, and in another, independent tool run, **119 theorem declarations and no unfinished proofs**. The same discipline of attribution applies to the `stamp.py` counts and to the tool confirmations of $G_{\text{univ}}(M) \simeq F_2$ and $K(M) \simeq \mathbb{Z}^2$: these were reported in source runs; they do not count as having been executed a second time within this work. Since the relevant ZIP / Lean / Python sources have not been rerun here, the report is not upgraded to "local independent re-verification". This number **is not a count of physical verifications**.

The inventory at the end of the 23–26 September 2026 marathon is:

$$\boxed{46 \text{ production} + 223 \text{ archive} = 269 \text{ theorem / proposition declarations}}$$

The archive part contains 66 old, 53 V03 and 104 V24 declarations ($66 + 53 + 104 = 223$); the production part is the single canonical core, isolated from the old interfaces. No declaration contains an unfinished proof ("0 axioms" is a count for the project's own declarations; it does not mean that there are no assumptions at all in the logical foundation of Lean), and the isolation of the production core from the old interfaces has additionally been tested with adversarial test cases. This number is **a formal inventory**, not a count of physical verifications. Moreover, two tools or two AI systems reaching the same result is, without a record of independent execution, not a reproduction but only an agreement of opinion.

Formal records must be separated into five classes:

Class	Meaning
SPEC	A specification result coming directly from a definition / axiom
DERIVED	A theorem derived from general definitions
FINITE-CHECK	A finite, exhaustive scan / sanity check
PHYS-BRIDGE	A result requiring an additional bridge between formal structure and physics
POLICY	An accounting / method invariant

A FORMAL THEOREM IS NOT A THEOREM OF PHYSICS.

Open formal debts

- The general associativity and global confluence chain for the rewriting / normal-form reducer — **closed** (formally proven; 14.2).
- Archive–Σ integration, and the entry of the meaning of direction into this integration.
- Uniqueness of `rid` and `WellFormedArchive` (well-formed archive).
- Transition from the integer proxy to an $I(\mathbb{Q})$ / real-range structure.
- Separation of the exact character ω and the coverage range Ω_{enc} as formal types.
- Parameter / bridge budget accounting of the $c_0 \hookrightarrow c^+$ X-fibre structure.
- The interface for metric reconstruction.
- Preservation of the reserve `U0_bidirectional := false` in a form consistent with the ontological upper layer.
- Independent external compilation / reproduction.

The formal package tests the type consistency of the current ontology; it does not prove the recovery of general relativity / quantum field theory, field equations, or the claim of being the correct theory of nature.

23.10a Double sealing — the protocol of archive integrity

In transitions between AI systems and formats, it is not enough to keep only the rendered form of equations. In the archive method, an equation record is preserved, where possible, with two representations:

$$S(E) = \{\text{Skeleton}(E) \in R_{\text{ham}},\ \text{Rendered}(E) \in R_{\text{görünür}}\}$$

Symbol	Meaning
E	An equation
$S(E)$	The stored double record of the equation
Skeleton(E)	The raw (LaTeX) skeleton
Rendered(E)	The rendered representation
R_{ham}, $R_{\text{görünür}}$	Raw and visible record stores

Question	Answer
What does it do?	It stores each equation both as a raw skeleton and in rendered form
Why does it do it?	To prevent equations from being silently corrupted in encoding repairs and tool transitions
How does it do it?	It keeps the two representations in separate stores and cross-checks them against each other before any bulk character change
What result is expected?	That the source of equations is preserved without damage through format transitions
What result is obtained?	**It is not a physical postulate but an archive protocol.** The LaTeX code block following every equation in this document is a direct application of this protocol

23.10b The ontological status of V24 technical results

- **The C_m zero-vacuum local-mass proposition (§509.4):** a conditional technical result of scalar–tensor / effective field theory; it is kept in the model layer and is not automatically elevated into the core ontology. The name "zero-vacuum" is a technical model name; it does not contradict or limit the identity $c^+ \equiv$ vacuum.
- **The Z operator $Z : \Phi \to T$:** defined in the historical family of kinematic dualities; since its correspondence with the old notation $d(x)/Z(x)$ is open, it is not added to the current definition of X as a fundamental element.
- **The layer scheme $X_{\text{durum}} \to X_{\text{alan}} \to X_{\text{okuma}}$:** it is not directly identified with the current "readout faces" of 4.5; the correspondence between them is an open editorial debt.
- **$\Pi_{+\to m}$ and the historical ruling "necessarily through c_0":** it does not count as a current transition law until it is harmonized with the canon of the complete bidirectional triangle; it awaits the architect's decision.

23.11 Historical lines and why they were abandoned

Line	Why
The logistic scalar kernel	It was a model; it was not the ontological X
Numerical readings of U_0	They reduced U_0 to a C_m quantity
The multi-domain correlation line	A structural artefact
Selection of particular CKM / PMNS values from the bare phase topology	Without additional physical selection structure the values are not determined; single-cycle holonomy is an open alternative (19.3)
The chain topology	Replaced by the complete triangle

Line	Why
The language prohibiting point physics	$[P, P]$ is legitimate
The Zero Energy / Flat Universe line	A shelving decision; not a resolved result of the current core
The Lagrangian MHTML record	A recovery / source note; it gives no licence to write actions for the outer phases
The criterion $\nabla \ln \chi_S \neq 0$ for dark matter	Retired; in reciprocal systems $\chi_S \equiv 1$ (17.1)
The constraint "c⁺ ≠ vacuum"	Removed by author's ruling; the current canon is c⁺ ≡ vacuum

These records are not deleted; they are kept **together with the reasons why they were abandoned.**

23.12 Document boundary for homonymous concepts

Terms such as "bare skeleton" occurring in other works are not the same concept as the c₀ "skeleton" analogy here. A shared word gives no licence to merge, in meaning, concepts belonging to different families of documents.

23.18 The discard group — discipline of record and justification

Excluded proposals are not deleted; they are preserved together with the reasons for their rejection ("the discipline of negative records"). Kill justifications are kept in a classification: out of scope, insufficient source, deduplication, contradiction.

23.19 Tool-sourced epistemic risks (including AI fallacies)

Risk	Safeguard
Content arising from fabrication (hallucination)	Source label mandatory; unverifiable content does not enter the document
Common drift into the same error	Visibility ledger; cross-audit
Declaring tool output as evidence	The rule of source separation (23.2)
Numerical fitting	APPENDIX H source record; an external comparison is not used unless re-verified

23.20 The minimal safe claim / final-ruling output protocol

The minimal safe form of claim for the output of every working run: non-canonical content is carried with the triple "STATUS + SOURCE + SAFEGUARD"; content without a protective sentence does not enter the document. This protocol was applied to the non-canonical sections in the preparatory versions of the monograph; in the publication text, the level of confidence is stated directly in the sentence. The rows "What result is obtained?" in this version are the reader-facing form of the same protocol.

23.21 The double-rendering and LODO verification protocol

It is the working-layer extension of double sealing (23.10a): each equation is stored as raw skeleton + visible rendering; LODO (leave one data set out) verification is defined for checking leakage between data sets.

SECTION 24

LIMITS AND OPEN QUESTIONS

24.1 Six critical questions

#	Question
1	What is the state-space decomposition of the phase sectors?
2	Where are the positions of the phases in field space?
3	What is the characteristic scale of the gravitational coupling?
4	What is **the additional principle that makes** the readout map **unique**?
5	What is the justification for the number of phases and their distribution?
6	Why is C_m a weakly coupled fixed point?

And the central gap:

$$\boxed{\text{The CHAIN } X \longrightarrow \{\text{physical functions}\} \quad \text{HAS NOT BEEN WRITTEN.}}$$

The formal place of the fourth question

Why the fourth question is hard has been shown definitively. Type rules, range safety, fixed endpoints, monotonicity and well-definedness — even all of these together **do not uniquely select** the bridge from X to a physical quantity; two different bridges can satisfy all of these conditions. This has been shown in Lean for a finite toy model, and by analytic counterexamples in the continuous case.

$$\boxed{\text{Type} + \text{range} + \text{well-definedness} \;\not\Rightarrow\; \text{a unique bridge}}$$

The conclusion is clear: what will make the readout map unique is **a physical selection principle** and observation. In the weak field, for a response operator with constant coefficients, the linear response can be derived conditionally; but the constitutive map from X to the source, coefficient and boundary data is open. The central gap is no longer only "unwritten"; it is a gap **whose location has been determined**. The general physical selector is a frozen open debt (APPENDIX K.1).

Equation set — the non-uniqueness of the bridge and distinguishing principles

The **bridge** $(J_X \;/\; \mathcal{E}_\phi)$ from X to physical quantities in C_m is Evertophy's point of contact with observation. The question is: can the rules of type and well-definedness **by themselves select** this bridge?

$$B_1(x) = x, \qquad B_2(x) = x + \tfrac{x(1-x)}{2} \quad (B_2' = \tfrac{3}{2} - x > 0) \qquad B_1(\tfrac{1}{2}) = \tfrac{1}{2} \neq \tfrac{5}{8} = B_2(\tfrac{1}{2})$$

$$\operatorname{diam} B(I_x) \leq \frac{L_x}{1-q} \operatorname{diam} I_x \text{ (contraction)}, \qquad \operatorname{diam} B(I_x) \leq \frac{L_x}{\mu} \operatorname{diam} I_x \text{ (variational)}$$

Distinguishing principle	B_1	B_2	Ruling
Additive superposition $B(x+y) = B(x) + B(y)$	✓	×	**Selects uniquely** (Cauchy + monotonicity) — correct
Multiplicative composition	✓	×	Reduces to the family x^p — partial
Reflection symmetry	✓	×	Not unique — partial
The inference "a variational principle selects by itself"	—	—	**Fails:** $J_1 = \int_0^1 \frac{1}{2}B'^2\,dx \to B_1 = x$ and $J_2 = \int_0^1 (\frac{1}{2}B'^2 - B)\,dx \to B_2 = \frac{3}{2}x - \frac{1}{2}x^2$; both are strictly convex and have a unique solution. The variational method is a mathematically successful alternative; which action is physical is open
Finite calibration	—	—	**Fails:** the counterexample B_ε
Conservation alone	—	—	**Fails:** dust and radiation satisfy the same continuity equation

Symbol	Meaning
$A_{\min}$	The frozen minimal axioms: A1 type · A2 Range safety · A3 fixed endpoints · A4 monotonicity · A5 single output
B_1, B_2, B_ε	Candidate bridges (on $[0,1]$, with fixed endpoints)
I_x	Input range
diam	The width of a range
q	Contraction constant ($0 \le q < 1$)
L_x	Lipschitz constant
μ	Strong-convexity constant
J_1, J_2	Two different action functionals

Question	Answer
What does it do?	It shows two different bridges satisfying all the formal conditions, and tabulates which additional principles narrow the choice
Why does it do it?	To test the expectation that the bridge could be derived from the rules of type and well-definedness alone
How does it do it?	It builds two functions that preserve the endpoints and monotonicity; it applies the distinguishing principles one by one to these two functions; it gives contraction and variational bounds for the range width
What result is expected?	The identification of the physical principle that selects the bridge uniquely
What result is obtained?	**A no-go result is proven:** the formal rules alone do not select the bridge. Additive superposition selects uniquely; a variational principle alone does not. The finite selector **is a toy model**; the general physical selector is **To Be Addressed Later**

Equation set — physical bridge candidates A / B / C and the selection chain

Since it has been shown that the bridge cannot be selected by type rules, this set establishes **which physical principles** narrow the freedom, by how much, and where empirical calibration is unavoidable.

A: $G_{\mu\nu} + \Lambda g_{\mu\nu} = \dfrac{8\pi G}{c^4}\, T_{\mu\nu}[J_X]$ **B:** $S = \displaystyle\int \sqrt{-g}\Big[\tfrac{M^2}{2}F(\chi)R - \tfrac{1}{2}K(\chi)(\nabla\chi)^2 - V(\chi)\Big] + S_m[A^2 g]$

C (DD CANDIDATE-01): $-\nabla\cdot(Z\nabla\phi) + \mu^2\phi + 4\pi G\rho = 0, \qquad \phi_{\text{dış}} = -C\,\dfrac{e^{-mr}}{r},\ \ m = \dfrac{\mu}{\sqrt{Z}}$ (constant $Z > 0$)

In a source-free region with constant Z, the equation becomes $\nabla^2\phi = (\mu^2/Z)\phi$; the decay is $m = \mu/\sqrt{Z}$. The earlier notation $e^{-\mu r}$ is correct only for $Z = 1$. In the Einstein equation with physical units, the coefficient is $8\pi G/c^4$ ($8\pi G$ in units with $c = 1$). The field ratio and its inversion:

$$Q(m) = e^{-m(r_2 - r_1)}\,\frac{1 + mr_2}{1 + mr_1}, \quad 0 < r_1 < r_2,\ m > 0 \ \Rightarrow\ m \in \big[Q^{-1}(Q^+),\ Q^{-1}(Q^-)\big], \quad 0 < Q^- \le Q^+ < 1$$

Q is strictly decreasing, $Q(0) = 1$, $Q(\infty) = 0$; therefore a measured range of Q inverts to a single range of m. Inverting Q gives m; if Z is unknown, the ratio does not determine μ and Z separately.

Symbol	Meaning
$G_{\mu\nu}$, Λ	Einstein tensor, cosmological constant
$T_{\mu\nu}[J_X]$	The energy–momentum tensor of the source coming from X
$\chi = \pi_\chi(X)$	Scalar projection (not to be confused with χ_S of 17)
M	Mass scale (of the order of the Planck mass)
R	Ricci scalar
F, K, V, A	Free functions of the scalar–tensor theory
$S_m[A^2 g]$	The matter action coupling to the metric $A^2 g$
ϕ	Screened Poisson potential
Z, μ	The coefficient field of screened Poisson and the screening mass
ρ	Matter density
C	Amplitude constant of the exterior solution
m	Decay parameter
r_1, r_2	Two measurement radii
$Q(m)$	The ratio of field strengths (scaled by r^2) at the two radii
$Q^{\pm}$	The endpoints of the measured ratio range

Question	Answer
What does it do?	It builds three concrete candidates for the bridge — the standard Einstein base, a scalar–tensor action and a screened-Poisson test bed — and shows how a measurable ratio inverts to the decay parameter
Why does it do it?	To see step by step how much each physical principle narrows the freedom of the bridge
How does it do it?	Starting from Lovelock's theorem, it tabulates what each additional principle fixes and what it leaves (below); in the test bed it writes the exterior solution in Yukawa form and makes the ratio at two radii invertible because it is strictly decreasing

Question	Answer
What result is expected?	A conditional derivation in the weak field; explicit marking of the open ends in the strong field and in the constitutive map
What result is obtained?	A is **a bridge** (the standard base); B is **a model** (the global P3 subclass); C is **a model** (test bed). The weak-field response is **conditionally derived**; the general J_X is **To Be Addressed Later**

The selection chain:

Principle	What it fixes	Remaining freedom
Lovelock's theorem	The geometric side — **under the assumptions**: four dimensions, from the metric only, local / natural, symmetric, divergence-free and of second order in derivatives of the metric ⇒ $aG_{\mu\nu} + bg_{\mu\nu}$	All in J_X
P1 — covariance + conservation	That T is not arbitrary	Every conserved tensor
P2 — variational origin (Hilbert tensor)	Makes conservation automatic on shell	F, K, V, A
P3 — **globally constrained subclass**: $F \equiv 1$, $K \equiv 1$, $A \equiv 1$	Constancy of G_{eff}; matter coupling	**Only** $V(\chi)$ — only under this global assumption
P3′ — **local frozen general-relativity matching**: $F(\chi_0) = 1$, $F'(\chi_0) = 0$, $A(\chi_0) = 1$, $A'(\chi_0) = 0$, $V'(\chi_0) = 0$, $V(\chi_0) \propto \Lambda M_{\text{Pl}}^2$ (normalization-dependent)	Only the matching around χ_0	**The global functional freedom of F, K, A does not close**; $A'(\chi_0) = 0$ alone does not give the result "only V"

Component of J_X	Status
Weak-field **response operator** with constant coefficients	Conditionally derived (DERIVED-CONDITIONAL)
The constitutive map $X \to (\rho, Z, \mu,$ boundary data)	Open
Strong field	Open
$V(\chi)$ (in the constrained P3 model)	Empirical calibration ($\dot{G}/G$, PPN γ, $w(z)$)

24.2 Other open questions

The frozen list of open debts is in APPENDIX K.1; the following questions are read together with it.

Metric-birth maps · consistency of the potential structure with the number of phases · the risk of a privileged frame · the two-clock problem · global conservation laws · perturbation and stability criteria · the argument family of X · the origin of gauge groups · the internal profile of the c₀ single structure and its quantitative relation to the event horizon · **the $\Gamma/\mathcal{G}_{C_m}$ double-counting debt:**

$$\Gamma \sim \frac{1}{C_s} \text{ and } \mathcal{G}_{C_m} \sim \frac{1}{C_s} \quad \Longrightarrow \quad \frac{dt}{d\lambda} \sim \frac{1}{C_s^2}$$

Question	Answer
What does it do?	It shows that in the old C_s bridges the sealing cost could enter the time scaffold twice
Why does it do it?	Counting the same physical effect in two different factors would artificially suppress the time reading quadratically
How does it do it?	It writes that when both factors scale as $1/C_s$, their product gives $1/C_s^2$
What result is expected?	The determination of whether the two factors are independent physical roles or two representations of the same role
What result is obtained?	**It is an open debt**; C_s is in the candidate-reading mode (14.3)

The meaning of the reserved headings: the type of the relation SYNTAX $\leftrightarrow U_x \leftrightarrow X$ · the width of the phase regime–threshold boundary and its link with X · the full definitions of Phase Collapse and Phase Rupture (Section 25).

Open questions at the global level: the mathematical type of the global arrows (it is known that they are not phase gates) · the ontological type of U_x (inclusion or membership) · the function sentence for U_+ and the generalized rule of birth · the link CycleSeed $\dashrightarrow$ Genesis · an atemporal definition of the cycle index.

24.3 What is deliberately left open

The full mathematical realization of X is DELIBERATELY OPEN.

The full characterization of the internal structure of the pre-layer of U_0, and the **final mathematical type / closure law / joint law of variation of the property families** of X, belong to the same category. By contrast, the conceptual role of X is clear in the current core: it is the single, dynamic meta-resolver, sensitive to phase / range / context. What is left open is not its conceptual meaning but its mathematical realization.

24.4 Forbidden interpretations — consolidated list

The global level

U_0, U_x, U_+ **are not** phases and are not placed in the phase triangle · U_+ **is not** a fifth node, c^+, X or the future · U_+ **is not** "the last stop / death" · the global poles **are not thresholds** · the global arrows **are not phase gates**; they connect to **the whole**, not to a phase · global bidirectionality **is not** mathematical invertibility · the global cycle **is not a flow of time or a mandatory periodic circuit** · the correspondence $U_0 : c_0 :: U_+ : c^+$ **is not set up** · the Big Rupture (Absolute Rupture ≡ Absolute Dissolution) **is not identified** with the terminal Big Rip scenario of standard cosmology · **no judgement is passed** on the direct relation $U_0 \leftrightarrow U_+$ · no metric, tetrad, speed or duration **is written** at the global level.

U_0

It is not a phase · it is not a gate endpoint · it is not a subtype of c_0 · it is not a topological hole · it is not a fibre · it is not a metaphysical entity · it cannot be identified with a numerical mass value · it cannot be confused with $u(0)$.

c_0

It is not a temporal moment of beginning · time has not "stopped"; it **is not yet established** · the c_0 single structure is not a Planck-sized point; it is a metric-gapless, contiguous, finite single form, and it grows with mass · the BEC is not c_0 (it is the environment in the matter phase closest to the c_0 environment) · the historical over-concrete definitions (full Planck saturation, stasis lock, zero-differential engine) are not the current core.

c^+

It **is not** the future · it **is not** a communication channel · C_m matter support dissolves · C_m metric length / duration / speed are not carried over unchanged · no matter carrying C_m-type material / rest mass is assumed · the historical K2 `Dim.mass` record does not count as a current c^+-local mass observable · it **is not** superluminal matter · a strict identity with the event horizon **has not been established.** *(The item "c^+ is not the vacuum" of earlier versions has been removed by author's ruling: the current canon is* $c^+ \equiv$ ***vacuum****; the vacuum state of quantum field theory is the* C_m *computational language of this identity.)*

X

It is not the Force of Attraction · it is not gravitation · it is not the metric · it is not a single scalar · it is not a logistic function · it is not a row of the matrix · it is not the average of properties · it is not confined to $[0, 1]$ · it is not divided · it is not merely a filter of permission · it is not merely a post-solution readout layer · its supra-phase status is not derived solely from dimensionlessness.

The Range Formalism

The language "point-valued physics is forbidden" **is not used** · $[P, P]$ is legitimate and requires no special mechanism · being interval-valued is not being time-variable.

Topology and algebra

The chain topology is not current · the mixture-simplex model is not mandatory · U_0 is not made a topological centre · additional topological structures are not imported · the unit and "no stamp" are not identified at the type level · group completion does not mean physical invertibility.

General

Map position ≠ phase membership · boundary ≠ membership · U_x is neither a fourth phase nor another name for X · dimensionlessness is not sufficient for transition · structural similarity is not verification · assignment of mechanism is not derivation · arithmetic verification is not physical verification · a formal theorem is not a theorem of physics · existence is not reduced to record · consensus is not canon.

24.5 The framework's ruling about itself

> At present Evertophy is NOT A COMPLETED THEORY; it is A STRUCTURE PREPARED TO BECOME A THEORY.

24.6 The question of the continuity of X(x) across regimes

Whether X behaves continuously in transitions between different phases / regimes is an open question. The archive record of the risk of a discontinuous limit is preserved: when a candidate type of X is chosen, it must be tested separately whether it produces discontinuities at transitions. This is one of the concrete ends of the decision "the full mathematical realization of X is open" (24.3).

24.7 The question of the numerical value of the effective mass m_Ξ

A proposal of a numerical value for the phase-dependent propagator mass m_{Ξ} exists in the archive; but the value has not been frozen. By the discipline of APPENDIX H, an unfrozen number does not enter this document.

24.8 Consciousness — a cautious marker (reserved framework record)

The archive record is preserved in a single sentence: the concept of consciousness has no place in the framework; it has been marked as a "distant target".

> Consciousness is not a subject of Evertophy; the observer is a physical system within C_m (15.6).

24.9 The reason for rejecting the Hamiltonian formalism in c₀

The Hamiltonian formalism is rejected in c_0; the reason is the prohibition of importing the structure of C_m into c_0 (15.2). Time in c_0 has not stopped; it **has not yet been established**; the language "$dt = 0$" remains only a pedagogical shorthand (3.2). The Hamiltonian itself is not the definition of the state in c_0.

SECTION 25

RESERVED ONTOLOGICAL HEADINGS AND MECHANISM CANDIDATES

This section carries the headings that have been **opened but not closed** in the framework. All of them are on record; for some, **the name, the rule of distinction or the decision to include them in the ontology** may have been fixed at the architect level. By contrast, for the headings marked here as open, **the full ontological meaning and / or the mechanism has not yet been closed**. A reserved ontological heading, a mechanism candidate and completed canon do not have the same status:

RESERVED ONTOLOGICAL HEADING ≠ MECHANISM / THOUGHT-EXPERIMENT CANDIDATE

Class	What	Who opens it
Reserved ontological heading	A structure that has been decided to be added to the framework, but whose full meaning has not been written	The architect only
Mechanism candidate	An attempt to read a phenomenon in the language of the framework	The working layer; requires separate derivation and preregistration

The two do not have the same status and must not be confused.

25.1 The phase regime–threshold boundary — a reserved ontological heading

CANONICAL NAME: PHASE REGIME–THRESHOLD BOUNDARY

For each edge of the triangle, an ontological heading **phase regime–threshold boundary** has been reserved. The name has two components, because the reserved structure was set up to express together the relation between the boundary of a regime and the threshold of a transition. This record does not determine in advance the final mathematical type or the physical thickness of the boundary.

This heading is directly related to the author's ruling of "lying on the boundary" (18.0): a structure on the boundary of the c threshold regime is at the same time on the boundary of the c^+ regime. The phase regime–threshold boundary is the place of such structures in the ontology; lying on the boundary does not mean being a member of two phases.

Distinguishing representation from physical width

In the notation of the ontology, the phase regime–threshold boundary is REPRESENTED as A BOUNDARY BAND rather than as a sharp line.

This is **a decision of notation**, not a physical ruling:

"a band notation is used" $\neq$ "the physical transition is a band of finite width"

> Whether the physical width of the band is non-zero, and its mathematical profile, HAVE NOT YET BEEN DERIVED.

Question	Answer
What does it do?	It reserves a place in the ontology for the transition region on the phase edges and represents it as a band
Why does it do it?	Without an explicit heading in which to place boundary phenomena such as light, subatomic structures and the liminal regime, they would be read either as a new phase or as a wrong membership
How does it do it?	It represents the boundary as a band rather than a sharp line; but it separates explicitly that this is not a claim of physical width
What result is expected?	The derivation of the mathematical type, physical width and microphysical profile of the boundary
What result is obtained?	**Canonical:** the reservation of the heading in the ontology and the use of the boundary / band notation. **Open:** the final mathematical type, physical width and microphysical profile of the boundary

Not to be confused: the transitional character of the threshold channels in 12.1 is **a separate model statement** written for those channels; it does not count as physical evidence for the notational decision here.

What it is not — four safeguards:

It is not	Why
A new phase	The number of phases is three
A new gate	The three edges are already defined
A change of the triangle topology	The complete bidirectional triangle is preserved
A new node	It adds no point to the graph

Its purpose: readability for humans, ontological consolidation and **the placement of boundary phenomena**. The sigmoid character of threshold transitions (12.1) and the liminal regime (15.3) are positioned inside this band.

Rule of terminology — locked

During the work, an everyday keyword was used for this structure to make it easy to remember. That word is **only a reminder**; it is not an ontological term, and its connotations do not belong to the framework.

> The everyday keyword DOES NOT ENTER the ACADEMIC TEXT or THIS DOCUMENT.
> The only valid name: PHASE REGIME–THRESHOLD BOUNDARY.

This is not a stylistic preference: the connotations of an intermediate state / waiting carried by the everyday word do not coincide with the ontological content of the band (regime boundary + transition threshold) and are open to misreading.

Combined record of open debts: the final mathematical type of the boundary; whether its physical width is non-zero and on what it depends; its microphysical profile; its relation to X; whether it behaves the same or differently on the three edges.

25.2 SYNTAX — a reserved ontological heading

SYNTAX has been conceived as the system of rules that determines which configurations are **physically valid**.

VALID / INVALID state	permitted / non-permitted configuration of phase transition

What it is not: it is not a new phase · it is not a new physical object · it is not a force or a field.

The most critical open point

> The FULL TYPE of the relation SYNTAX $\leftrightarrow$ U_x $\leftrightarrow$ $X(x)$ IS OPEN.

Three possibilities are on record, and none has been chosen:

Possibility	Content
(a)	SYNTAX **replaces** U_x
(b)	SYNTAX is a layer **inside** U_x
(c)	SYNTAX takes a separate role **above** U_x

The architectural cost of the options — a dependency analysis

The three options record **the historical decision space**; none has been eliminated. But once the two-level architecture is established, their costs are not equal:

> Option (a) requires the REDEFINITION of the role of U_x as the Dynamic Universe — the highest cost of rewriting.

The reason is categorical: in the global ontology U_x is **a universe structure**; SYNTAX is **a system of rules**. In programming terms: *the running state of a program* and *the grammar of the language* are not the same object. This is not a decision but **a dependency analysis**.

A candidate distinction — not canon

Object	Candidate definition
SYNTAX	**A rule structure of admissibility / consistency** that limits which structures or configurations can carry conditions of validity
X	**The resolver of a given state**, which determines which regime and value is resolved in a given full phase / regime / context state

In this candidate distinction, **it is not assumed that SYNTAX is necessarily a state-independent, context-independent or invariant grammar**. That the applicable constraints may differ according to the phase / regime context is kept open.

In the analogy of chess: SYNTAX is the rules of validity; X is the engine that reads the current board and the valid context and resolves which moves are actually permitted in that state. That the application of rules such as castling, check or en passant may depend on the current state does not require **the rule structure** and **the state resolver** to be the same object. **This distinction is not canon**; it is a candidate that facilitates the decision.

This boundary must become clear — X is already the object that "resolves which values are permitted" (4.1); there is therefore a risk that the two concepts overlap.

Open debt of decision: the final ontological / formal category of SYNTAX — whether it is a separate entity, a rule structure, or the family of upper constraints that X must obey — will be closed by the architect's decision and subsequent formalization.

In the V24 writing this relation is NOT REGARDED AS RESOLVED.

25.3 Phase Collapse — a reserved ontological heading

It has been reserved as a separate ontological phenomenon.

$$\text{Phase Collapse} \neq \text{ordinary phase transition}$$

An ordinary transition is an event that takes place through a gate and can produce a stamp (Section 13). Phase Collapse **is not regarded as synonymous** with this. **Its details are reserved for the architect.** This document does not invent a mechanism; it records the heading and the rule of distinction.

25.4 Phase Rupture — a reserved ontological heading

It is a heading separate from and independent of Phase Collapse.

$$\text{Phase Rupture} \neq \text{Phase Collapse} \qquad \text{Phase Rupture} \neq \text{a new phase or gate}$$

Warning on a homonymous term: This heading **is not the same thing** as the **Big Rupture** at the global level (2.8). The Big Rupture is the global event in which the whole U_x structure reaches the form of U_+; there, **Absolute Rupture and Absolute Dissolution express the same thing** (author's ruling). Phase Rupture, by contrast, is a phenomenon at the phase level. A shared word gives no licence to merge meanings.

A possible phenomenal bridge: the breaking of the flux tube under colour confinement (25.8). But:

$$\text{Breaking of the colour flux tube} \neq \text{Phase Rupture}$$

This is only a bridge candidate; it is not an identity.

25.5 The Massive Void — a reserved ontological derivation

The observation of great cosmic voids at different wavelengths, and new star formation in these regions. Under the identity $c^+ \equiv$ vacuum, cosmic voids are among the purest C_m readings of c^+ (Section 3); this heading asks how C_m structure can emerge in such regions.

A source distinction is mandatory

The archive contains **an older account** of this subject. The new derivation is not a repetition of it.

$$\boxed{\text{The old account of the Massive Void} \neq \text{the new ontological derivation}}$$

The two records are not mixed with each other; the new derivation is established with its own justification. **Its details are reserved for the architect.**

25.6 Pauli exclusion ↔ the behaviour of the phase regime–threshold boundary — a high-priority mechanism candidate

Relating the Pauli exclusion principle to the behaviour of phenomena at the phase boundary. A possible research chain:

phase regime–threshold boundary → restriction of the accessible state space → prohibition of double occupancy → Pauli phenomenology

Three scientific thresholds

For this line to stop being an analogy and count as a mechanism:

#	Threshold
1	The Pauli result must come out **without being assumed from the start**
2	It must **agree** with antisymmetry, spin-$\frac{1}{2}$ and the structure of identical fermions
3	It must produce a new or previously specified **observational behaviour**

Question	Answer
What does it do?	It proposes reading Pauli exclusion as the phase boundary on which subatomic structures lie restricting the state space
Why does it do it?	If it is correct that the subatomic level lies on the shared boundary of c^+ and C_m (18.0), this boundary is expected to leave a trace in quantum statistics
How does it do it?	It writes a chain from the boundary to a restriction of the state space, and from there to the prohibition of double occupancy, and sets three thresholds for the status of a mechanism
What result is expected?	A derivation of the Pauli result without assuming it, and a new observational behaviour
What result is obtained?	Unless the three thresholds are met, this line **is at the level of an analogy**

Model note (thought experiment of 2026-10-13). In a thought experiment using the scale–mass phase map, neutron stars fell inside the transition band of the gravitational threshold line (the Schwarzschild-radius line); a quantitative candidate band was obtained in which degenerate

fermion support ends just before this threshold (V24 §732). The note meets none of the three thresholds; the line remains in the status of a mechanism candidate. The reading "Pauli guarantees stability" has been rejected: the support collapses above the Chandrasekhar and TOV limits, and Pauli alone is not sufficient for the stability of matter.

25.7 $c^+ \to C_m$ in the vacuum around a black hole — thought experiment

The question is whether a black hole, through gravitational effect, brings the c^+ structure in its environment down into the matter phase. Under the identity $c^+ \equiv$ vacuum, this question is the same as "is matter born from the vacuum around a black hole?"

$$c^+_{\text{yerel}} \xrightarrow[\text{strong attraction / phase threshold}]{} C_m$$

> The black hole does NOT PRODUCE matter FROM NOTHING; it may ACCELERATE (CATALYSE) the transition of c^+ content into C_m .

The possible observational signature is **a residual**:

$$L_{\text{gözlenen}} \;>\; L_{\text{toplanma,max}} + L_{\text{spin,max}} + L_{\text{depo,max}}$$

Symbol	Meaning
c^+_{yerel}	The c^+ (vacuum) content around the black hole
$L_{\text{gözlenen}}$	The total observed radiative power
$L_{\text{toplanma,max}}$	The maximum power that could come from the accretion of matter
$L_{\text{spin,max}}$	The maximum power that could come from extraction of rotational energy
$L_{\text{depo,max}}$	The maximum power that could come from stored energy

Question	Answer
What does it do?	It asks whether a black hole accelerates the emergence of C_m matter from the surrounding vacuum, and defines its trace in the radiation budget
Why does it do it?	If $c^+ \equiv$ vacuum and the $c^+ \to C_m$ edge exist, to test whether this edge has an observable effect in the strongest environment of attraction
How does it do it?	It adds the maximum contributions of all known energy sources; if the observed power exceeds this, it looks for a residual. A stronger signature would be the emergence of new C_m matter when there is no sufficient baryonic source in the environment
What result is expected?	An excess of radiation or matter that cannot be explained by the standard sources
What result is obtained?	**It is a thought experiment**, not canon. These signatures **are not predictions**: to be a prediction, they must satisfy the six conditions of the 0/10 → 1/10 gate (0.4)

25.8 Colour confinement ↔ phase limit / SYNTAX — a strong derivation candidate

The chain of quark confinement, the stretching and breaking of the flux tube, and pair production.

Two possible roles in the framework:

Phase	Role
c_0	The **sustainability limit** of C_m configuration
c^+	Access to a new C_m state — the side of **pair production** ($c^+ \equiv$ vacuum)

The SYNTAX reading (candidate):

$$\text{free colour state} = \text{INVALID} \qquad \text{colour-neutral hadron} = \text{VALID}$$

Question	Answer
What does it do?	It reads colour confinement as a validity rule of SYNTAX and as a consequence of the phase limits
Why does it do it?	The measured phenomenology of confinement (no free quarks; pair production when the flux tube breaks) fits naturally into the language of valid / invalid configurations
How does it do it?	It counts the free colour state as invalid and the colour-neutral hadron as valid; it reads the breaking of the flux tube as the birth of new C_m pairs from the c^+ (vacuum) side
What result is expected?	The derivation of the SU(3) structure and of confinement from the phase structure (20.10)
What result is obtained?	**It is a strong derivation candidate.** It is read together with the constraint of 18.4: calculations of pair production from the vacuum assume **a given metric** and cannot be applied to c_0. The part of the chain that remains within C_m is legitimate

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25.9 Visual auxiliary layers — thought experiment

Layer	Content	Safeguard
Wavelength factor	How the phase regimes appear in different observation bands with λ, ν, E	Not a formal equation; a visual / interpretive layer
Black-hole threshold factor	Representation, by threshold logic, of the distinction *"not every dense structure is a black hole"*	**It is not a universal constant**; its details are reserved for the architect

Note on the speed band: In the canonical figure, a representation of a speed band under C_m is being considered: the membership band $0 < v < c$ and the liminal shared boundary $v = c$. The speed here **is not the local laboratory speed**; it is the parameter evaluated with respect to the cosmological reference of the framework. A laboratory speed of zero **does not count** as c_0 membership (3.7).

25.10 Phase leakage and old records of the time limit — an alignment debt

The archive contains old records on phase leakage, the appearance of $\Delta t \approx 0$ in the boundary regime, and phase-incoherent measurement (18.6).

> Old archive entry $\neq$ new work on the phase regime–threshold boundary

These records need to be realigned with the boundary language of 25.1; but the two layers **must be kept separate** — the terms of the old account do not count as the definition of the new band.

25.11 Summary of the status of this section

Heading	Class	Status
Phase regime–threshold boundary	Reserved ontological	Reservation of the heading + decision on boundary / band notation fixed; final type, physical width and microphysical profile open
SYNTAX	Reserved ontological	Relation with U_x / X **open**
Phase Collapse	Reserved ontological	Details with the architect
Phase Rupture	Reserved ontological	Details with the architect
Massive Void	Reserved ontological derivation	Source distinction mandatory
Pauli ↔ phase regime–threshold boundary	Mechanism candidate	**High priority**; three thresholds
$c^+ \to C_m$ around a black hole	Thought experiment	Not canon
Colour confinement ↔ SYNTAX	Derivation candidate	Strong
Visual layers	Thought experiment	Not an equation
Alignment of phase leakage	Alignment debt	Separation of layers mandatory

> NO item in this section counts as a PREDICTION without separate derivation and preregistration. Counter **0/10**.

Safeguard of correspondence: the method / source records carried over from the whole-file audit of V24 do not raise the status of the reserved headings of Section 25; SYNTAX, the phase boundary and the alignment of $\Pi_{+\to m}$ continue to await the architect's decision.

25.12 The residual-field formalism (v0.1 axiom set → v0.4 parametric model)

A family of parametric models developed as a field-theoretic realization of the phase trace (7.9). The line of development in the archive: v0.1 general rules → v0.2 Lorentz protection and classical limit → v0.3 continuity bound → v0.4 parametric model $F(\rho)\, Z(\Phi, \rho)$.

> This block does not scalarize X ; it does not carry C_m time into the atemporal phases; it is not a core law.

25.13 The in-phase-wave (IPW) model

A model, within the framework, of wave-like modes inside a single phase; the preregistered test card is in 21.19. The language "the next exciting window" is an archive note; it carries no status.

The IPW toy model — X_T spectral decomposition

A scan of the spectral-decomposition signature for X_T in a one-body toy model; the set of conditions is in 21.19.

25.14 The kinematic duality postulate — full form and the Z-operator bridge

The historical duality in the archive (the same source as the record of 4.2) is preserved here in full form:

$$\Phi(c^+, C_m, c_0) = \mathrm{T}(z^+, z_m, z_0), \qquad \Phi\, e^{+i\pi} = \mathrm{T}\, e^{-i\pi}$$

Symbol	Meaning
Φ	The historical "phase" side (not identical with Φ_χ in 17)
T	The historical "time–geometry" side; its type is incomplete
z^+, z_m, z_0	The historical coordinates corresponding to the three phases
$e^{\pm i\pi}$	Opposite phase factors (both equal to -1)

Question	Answer
What does it do?	It proposes a historical duality between the phase side and the time–geometry side
Why does it do it?	In an early layer it was an attempt to unite the phases through a kinematic duality
How does it do it?	It equates the two sides and writes two phases of opposite direction in the opposite-phase form
What result is expected?	A dynamical law through the Z operator ($Z : \Phi \to \mathrm{T}$)
What result is obtained?	**It is a historical record.** Since $e^{+i\pi} = e^{-i\pi} = -1$, the opposite-phase form reduces algebraically to just $\Phi = \mathrm{T}$. The Z operator is not added to the current definition of X as a fundamental element (23.10b)

25.15 Separation of three metric regimes — g(0) / g(m) / g(+)

This is the proposal of separating three metric readings for the three phases: $g^{(0)}$ the c_0 reading (not admissible — 9.3), $g^{(m)}$ the C_m metric (the only legitimate domain), $g^{(+)}$ the c^+ reading (not admissible). The proposal of separation is a design of notation; it does not bring the metric back into the outer phases.

25.16 The cosmological bridge X(x) ≈ ln(a)

A candidate bridge between Hubble expansion and X:

$$\xi_{\mathrm{koz}}(x) = \pi_{\mathrm{koz}}[X](x) \approx \ln a$$

Symbol	Meaning
π_{koz}	The cosmological readout projection of X
ξ_{koz}	The cosmological reading
a	Cosmic scale factor

Question	Answer
What does it do?	It ties the cosmological reading of X to the logarithm of the scale factor
Why does it do it?	To look for a simple, testable bridge between the expansion history and the resolver
How does it do it?	It equates the reading with $\ln a$; it also keeps generalized forms in the archive
What result is expected?	Contact with cosmological data
What result is obtained?	**It is a candidate bridge**, not canon. Since X itself is not a scalar, the archive notation "$X(x) \approx \ln a$" is written here through a reading $\xi = \pi(X)$. The point of contact is the goodness-of-fit check of 21.11

25.17 The correspondence Krylov saturation ↔ ξ_sat → ξ_sat^max

This is the proposal of mapping the saturation of the Krylov subspace of quantum evolution onto the extreme regime of the saturation reading of X. The archive notation "$X \to 1$" is expressed in the current notation through the saturation reading:

$$\xi_{\mathrm{sat}} = \pi_{\mathrm{sat}}(X) \;\to\; \xi_{\mathrm{sat}}^{\max}$$

It is a candidate bridge; numerical verification is open.

25.18 The axiom set of global unitarity + local Kraus

This is the axiomatic statement of the two-layer structure of 16.6. It is a model layer; it is not a fundamental element of the ontology.

25.19 The reading light = consistency constraint

This is the archive extension of the reading of c as the consistency constraint of C_m (3.3): the speed-of-light limit is treated not as a prohibition on the speed of matter but as a limit of information processing / record / resolution. $v = c$ is the liminal shared boundary of C_m and c^+. This reading is consistent with the core ruling; it adds no additional mechanism.

25.20 Structural dissolution — a scenario of constant drift

A scenario of the long-term dissolution of the framework's structures (celestial bodies, nuclei): a chain of orbital decay → instability → disintegration. The scenario is a design; it is not an observational commitment.

25.21 The end of the universe — record of two scenarios

The four-stage narrative in the archive (orderly end → gradual dissolution → stagnation → infinite dilution) has been aligned with the current two-pole language (2.8): the two scenarios are tied to the global poles. The end in the direction of U_+ is called Absolute Rupture ≡ Absolute Dissolution, and it is at the same time a new birth. An apocalyptic (eschatological) reading is forbidden (2.6).

25.22 The claim of a cosmic super-atom

This is the claim of reading the universe as a "super-atom"; it is the cosmic extreme of the BEC / super-atom family of analogies. It is at the level of an analogy; no real identity has been established. The BEC is not c_0 (18.5).

25.23 The translation matrix — readout transformation C_m ↔ outer phase

This is the working matrix in which concepts of the outer phases are translated into the C_m reading: rules for carrying the terms record / measurement / vacuum / phase boundary between the two layers. It is the working tool of the ruling "transport ≠ readout" of 13.1a.

25.24 Phase conductivity

This is the proposal of modelling the transfer of effects between phases in the language of "conductivity". The notation of electrical conductivity is borrowed; structural similarity is not verification (17.3).

25.25 The phase-synchronization mechanism

This is a candidate for realizing the $c_0 \leftrightarrow c^+$ X-coordination (13.6) as a synchronization mechanism. The mechanism has not been written; the heading is a programme record. Synchronization here is an atemporal relation of agreement; it does not assume a physical flow of time.

25.26 The universe core — calculation of three scenarios

The three calculation scenarios in the archive for the universal core scale (locked to the CMB, CMB+MPC, CMB+SN) and the window of internal consistency (~10^{47} light years). The scenarios are the computational body of 2.10; the numerical results are under the discipline of APPENDIX H.

25.27 The dynamic-attraction template

These are the template records used for dynamic attraction in relativistic stellar models (the Mestel star in special relativity; stellar models in general relativity; rotation, frame dragging). It is a context record; it is not an Evertophy derivation.

25.28 Readings of the single structure inside a black hole

The archive prediction records for the interior of a black hole (shadow signatures, universal Boyer–Lindquist scales) are preserved; they carry no predictive status. In the current version the status of two elements has changed: the **metric-gapless single structure** and **density not increasing with mass** (a more massive black hole is not denser; the volume grows with mass) are no longer historical project claims but **author's rulings** (Section 3). **Exact proportionality** of volume to mass, by contrast, holds in the constant-density realization ($\rho_{c_0} = \rho_*$), in which the mean density is independent of mass:

$$N_{c_0} = \frac{M}{m_P}, \qquad \rho_{c_0} \le \rho_P, \qquad V_{c_0} \ge N_{c_0}\,\ell_P^3 \;\propto\; M, \qquad R_{c_0} \propto M^{1/3} \;\; (\rho_{c_0} = \rho_* \text{ constant})$$

Symbol	Meaning
N_{c_0}	The count of core capacity in units of the Planck mass
M	The mass of the black hole
m_P	Planck mass
ρ_{c_0}	The density of the single structure
ρ_P	Planck density ($\approx 5.16 \times 10^{96}$ kg/m^3)
V_{c_0}	The volume of the single structure
ℓ_P	Planck length
R_{c_0}	The radius scale of the single structure

Question	Answer
What does it do?	It fixes, according to the author's ruling, the relations of mass, density and volume of the single structure inside a black hole
Why does it do it?	These relations, which stood in the old record as "historical project claims", were taken into the core with the author's approvals of 2026-10-14
How does it do it?	It counts capacity in Planck masses; it bounds density by the Planck density; it writes that in the constant-density realization volume grows in direct proportion to mass and the radius scales with the cube root of mass

Question	Answer
What result is expected?	The derivation of the internal profile and of the quantitative relation with the event horizon; the prediction of shadow and scale signatures from this structure
What result is obtained?	The single structure and density not increasing with mass **are author's rulings**; exact proportionality is a consequence of the constant-density realization; the internal profile of the single structure, its relation with the horizon and its observational signatures **are open debts** (APPENDIX K.1). The shadow and Boyer–Lindquist records are not predictions

25.29 The positioning of redshift

This is the record of positioning cosmic redshift on the phase map. It has the same status as the redshift bridge row of 11.7.

25.31 The Evertophy periodic table / a Mendeleev-style domain table

This is a proposal of presenting the phase-parameter matrix (Section 5) at the level of a domain table. It is a tool of representation; it adds no ontological content.

25.32 The frequency-transformation thought experiment

This is a thought experiment of transforming frequency / energy scales between phase readings; it belongs to the same family as the wavelength-factor layer of 25.9.

SECTION 26

PHENOMENA, OPEN PROBLEMS AND EVERTOPHY'S CANDIDATE READINGS

This section presents together, in a map of headings, established physical phenomena, theoretical open problems and Evertophy's candidate readings of them. The appearance of a heading here does not mean that modern science cannot explain that phenomenon, or that Evertophy has solved it; each row is evaluated with its own source and derivation status.

> Every reading is "a candidate"; none is "solved". The whole of this section is subject to the language discipline of 0.3 and 23.9.

Each row in this section is **a reading, not an explanation.** The phenomenon measured by modern science is accepted as it is; the reading Evertophy proposes is placed on top of that measurement as a separate layer and is a candidate for testing (From the Author to the Reader). The appearance of a reading in this list does not mean that it has been derived quantitatively or verified. The section lists established phenomena (measured, but with a debated explanation) and theoretical open problems together; the status of each row is separate. This section makes no contribution to the counter:

> Canonical numerical-prediction counter: 0/10

26.1 Cosmological phenomena

Phenomenon	Candidate reading	Status
Dark matter / rotation curves	The clustered C_m appearance of c^+ (11.1a, 11.2)	Candidate — no quantitative derivation
Dark energy / phantom divide	The expansion-sustaining C_m appearance of c^+	Candidate (11.9)
Hubble tension	Candidate scale-dependent effective gravitational reading	Candidate — only a programme of bridge falsification (11.7). The framework's earlier Hubble claim **has been withdrawn three times** (V24 §538.3)
S8 / σ8 tension	A row of the programme of bridge falsification	Candidate
Core–cusp / small-scale crises	C_m reading of the clustering regime of c^+	Candidate
MOND and modified gravity	Context of a bridge between paradigms	Context
The cosmological constant problem	Candidate relation, under the identity $c^+ \equiv$ vacuum, between vacuum energy and the C_m reading of the c^+ share	Candidate

Phenomenon	Candidate reading	Status
Dark flow	May be read as the C_m projection of a c^+ tendency	Context
Cosmic birefringence	Context until the calibration is explained	Context (21.18)
The Big Rupture scenario	A birth event at the global level (2.8); Absolute Rupture ≡ Absolute Dissolution — the warning on homonymous terms applies	A canonical framework, not a physical scenario

26.2 Early-universe and initial phenomena

Phenomenon	Candidate reading
The Big Bang singularity / pre-inflation	The critical threshold at the boundary of U_0 + the joint birth of the three phases (2.4)
The horizon problem	A candidate for being read as a natural consequence of joint birth
The flatness problem	A U_0-sourced reading of the initial conditions — candidate; its relation to the base space being flat Euclidean (9.2a) is open
The monopole problem	A candidate for being read as a constraint of the phase structure on the birth of gauge fields
Baryogenesis	Open debt (20.7)

26.3 Quantum phenomena

Phenomenon	Candidate reading
The measurement problem	Liminal regime → C_m projection → sealing (15.3)
Entanglement	A write-protected correlation in c^+ (18.6) — not a signal channel
Quantum teleportation	c^+ source of correlation + C_m classical channel (18.1) — compatible reading
The Hartman effect	The inadequacy of the language of pure traversal time in the phase-threshold region (APPENDIX D)
Delayed choice / quantum eraser	Consistency of the sealing decision independent of the time index (18.10) — compatible reading
Time crystals	A periodic structure within C_m — can be reread in the language of phases; candidate

26.4 Standard Model phenomena

Phenomenon	Candidate reading / status
Fine tuning	Motivation of the Range Formalism; not an explanation
The hierarchy problem	Open debt
Strong CP	Programme target (20.4a)

Phenomenon	Candidate reading / status
Neutrino mass / oscillation	Open debt (20.7); oscillation is a candidate for the reading of lying on the phase-threshold boundary (18.0)
Colour confinement	Strong derivation candidate (25.8)
Origin of mass / Higgs	Target of Machine 2; no derivation

26.5 The intersection of gravitation and quantum theory

Phenomenon	Candidate reading / status
Quantum gravity	The central gap of the framework; no claim of a solution
The Planck scale	Has entered the author's ruling as the density upper bound of the c_0 single structure ($\rho \leq \rho_P$) and the counting unit of capacity (m_P) (Section 3); no quantitative bridge to quantum gravity
The black-hole information paradox	Not solved (0.3); the potential preservation of information in the c_0 single structure without destruction, and the language of record / archive, offer a rereading
Hawking / Unruh	Context; literature of thermal projection; T_H as the C_m readout temperature of the horizon (candidate reading, 3.2)
Wheeler–DeWitt timelessness	Reading through the phase distinction (7.11e)

26.6 Phenomena of time

Phenomenon	Candidate reading
The arrow of time	Candidate reading: associated with the unidirectionality of the $C_m \rightarrow c^+$ record channel and with the accumulation of stamps (7.1, 16.7)
The literature of emergent time	Comparison map (7.11)

26.7 Condensed-matter and laboratory phenomena

Phenomenon	Candidate reading
High-temperature superconductivity	A family of analogies of collective behaviour; not a real identity
The Casimir effect	Under the identity $c^+ \equiv$ vacuum, the reading of c^+ on C_m; the standard quantum-field-theory calculation of the force remains fully valid as the C_m computational language (Section 3)
The Schwinger effect / pair production	A local phase transition triggered by external energy on the $c^+ \rightarrow C_m$ edge (candidate reading, 18.4)
BEC / superfluid	The BEC is not c_0; **it is the environment in the matter phase closest to the c_0 environment** (18.5). The correspondence superfluid $\rightarrow c^+$ is not used

26.8 Observation channels and data windows

CMB anisotropies · BAO · 21 cm cosmology · Pantheon+ · optical-clock instability data (Yb / Sr) · AME2020 mass tables — all are external data channels subject to the audit discipline of Section 21; none of them is an Evertophy prediction.

26.9 Records of rare / singular anomalies

Anomaly records: flyby anomalies · the Pioneer anomaly (largely explained by thermal recoil; historical record) · signatures of non-metricity (21.16; test design). These are records of an "inventory of unexplained or debated phenomena"; the framework proposes a perspective on them and passes no judgement.

Standard results that must be recovered (not anomalies): measurements of the Shapiro delay (8.9) are measured phenomena explained by general relativity; they are among the results Evertophy must recover from the effective geometry (9.2a, 20.6).

SECTION 27

FUNDAMENTAL EQUATIONS AND THE BRIDGE FORMALISM (CANDIDATE INVENTORY)

This section takes an inventory, at the level of names, of the family of bridge equations in the archive. It is an extension of the core protective records of APPENDIX C; it contains no new numerical result. The detailed explanation of symbols and the question–answer table for each equation are in the section shown in parentheses; here the equations are brought together collectively, in two layers according to their levels of confidence.

That an equation appears in this section does not mean that it is stated with the same confidence. The section is therefore divided into two layers: verified structural equations (27.A), and model and bridge equations whose scope and assumptions are written explicitly (27.B). The historical and candidate inventory coming from the archive, and the families of models, are kept in the V24 rolling master record.

27.A Verified structural equations

These equations establish **the structural consistency** of the framework; they are not physical predictions.

Equation	What it says	Kind of proof
$g = E^{\mathsf{T}}\eta E, \quad \det g = -(\det E)^2$	The algebraic condition of non-degeneracy; that the metric is permitted only in C_m **is a separate phase postulate** (Section 9)	Symbolic — two independent computation engines
$w \cdot w = w \iff w \in \{e,\ \kappa_{0m},\ \kappa_{+m}\}$	The idempotents of the stamp algebra; associativity, termination, unique normal form and confluence are also proven (Section 14)	Formal (Lean)
$x \in [a,b],\ y \in [c,d] \Rightarrow xy \in [\min(ac,ad,bc,bd),\ \max(ac,ad,bc,bd)]$	The reliability of range arithmetic; addition, negation, intersection and exclusion of zero are also proven (6.4a)	Formal (Lean)
q gate-locked $\iff$ q natively defined in at most one phase	That C_m-specific quantities cannot be transported through any gate (13.1a)	Formal (Lean)
Type + range + well-definedness $\not\Rightarrow$ a unique bridge	$B_1(x) = x$ and $B_2(x) = x + \frac{x(1-x)}{2}$ satisfy the same conditions (24.1)	Formal (finite) + analytic (continuous)
$N_{\text{arşiv}}(n+1) = N_{\text{arşiv}}(n) + 1$	The discrete monotonicity of the archive count; not a derivative with respect to physical time (Section 14)	Formal (Lean)
Hard rejection $\iff B_{\text{pred}} \cap B_{\text{obs}} = \varnothing$	The falsification criterion; a measure of agreement alone is not a reason for rejection (21.6)	Formal (Lean)

LaTeX record of the equations:

```
g = E^{\mathsf T}\eta E,\quad \det g = -(\det E)^2
w\cdot w = w \iff w \in \{e,\ \kappa_{0m},\ \kappa_{+m}\}
x\in[a,b],\ y\in[c,d] \Rightarrow xy \in [\min(ac,ad,bc,bd),\ \max(ac,ad,bc,bd)]
q \text{ gate-locked} \iff q \text{ natively defined in at most one phase}
\text{Type}+\text{range}+\text{well-definedness} \nRightarrow \text{a unique bridge}
N_{\rm arşiv}(n+1) = N_{\rm arşiv}(n) + 1
\text{Hard rejection} \iff B_{\rm pred}\cap B_{\rm obs}=\varnothing
```

Symbol	Meaning
g, E, η	Metric, tetrad, Minkowski metric (9.2)
w, e, κ_{0m}, κ_{+m}	Stamp word, unit, the two lock stamps (14.2)
$[a,b]$, $[c,d]$	Closed ranges
q	A kind of quantity
B_1, B_2	Two candidate bridges satisfying the same formal conditions
$N_{\text{arşiv}}(n)$	The number of records after the n-th append
B_{pred}, B_{obs}	Prediction and observation bands

Question	Answer
What does it do?	It gathers into a single table the formally proven structural results of the framework
Why does it do it?	So that the reader can tell at a glance which results have really been proven and which are models
How does it do it?	It lists each equation with what it says and with its kind of proof (symbolic, Lean, analytic)
What result is expected?	That the physical bridges to be built on this structural core rest on a consistent foundation
What result is obtained?	All are **proven structural results**; none is a physical prediction, and none contributes to the counter

27.B Model and bridge equations with written scope

These equations are correct within their own assumptions; they are not promoted to the core.

Equation	Scope and assumption	Status
$\int \mathcal{G}_{\text{FS}}\, d\lambda \geq \theta_{\min}, \quad \Delta t \geq \hbar\theta_{\min}/\overline{\Delta E}$	Quantum-C_m only; pure state, unitary evolution, $\overline{\Delta E} > 0$; it is a lower bound (7.4)	Bridge
$\tau_0\tilde{\Gamma}\,\mathcal{G}_{C_m} = \eta_{\text{clock}}\, d\tau_{\text{GR}}/d\lambda$	Candidate clock mapping; for a static observer $d\tau_{\text{GR}} = \sqrt{-g_{00}}\, dt_{\text{koor}}$ (7.4)	Bridge
$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi G}{c^4}\, T_{\mu\nu}[J_X]$	The standard C_m comparison base; J_X is an open debt (24.1)	Bridge
$-\nabla\cdot(Z\nabla\phi) + \mu^2\phi + 4\pi G\rho = 0, \quad m = \mu/\sqrt{Z}$	Constant $Z > 0$ and suitable boundary / coercivity conditions; in the pure Neumann case $\mu = 0$ an additional mean condition is required	Model — weak-field test bed

Equation	Scope and assumption	Status
$Q(m) = e^{-m(r_2-r_1)}\,\frac{1+mr_2}{1+mr_1}$	$0 < r_1 < r_2$, $m > 0$; strictly decreasing; the inverse problem gives m ($\mu = m\sqrt{Z}$ only if Z is known)	Model
$\sigma^* = 1/\sqrt{2}, \quad \sigma_{\text{fold}} \approx 0.7391346294$	The regime thresholds of the ideal equilateral Gaussian landscape (19.1a)	Model
At the mathematical ends $z \to \pm\infty$, $w \to -1 \iff (X_{\min} > 0 \vee p = 0) \wedge (X_{\max} < 1 \vee q = 0)$	Logistic readout model; $s > 0$, p, q finite; the source derivation is open. Physical domain $z > -1$, physical future $z \to -1^+$ (11.9)	Model
$\chi_S \equiv 1, \quad \Delta\varphi \equiv 0$ (reciprocal system)	Same port normalization, $S_{21} = S_{12} \neq 0$ (17.1)	Limiting result
$\lvert A_{\text{loop}}\rvert = \dfrac{\pi\lvert k\rvert\delta^2\omega}{\lambda^2+\omega^2}$	Relaxational linear-response model, steady periodic regime; the $1/\omega$ form only for $\omega \gg \lambda$	Model
$\Delta_{0m}\,\Delta_{+m} = \dfrac{d\ln F}{d\tau}$	An identity following from the chain rule; the gain relation $\Delta_{0+} = G\,\Delta_{+m}$, which is the physical claim, is separate	Identity correct / gain a model
$\ln\dfrac{Z(\tau)}{Z(\tau_0)} = -\displaystyle\int_{\tau_0}^{\tau}\eta(u)\,[F(u) - F^*(u)]\,du$	Drift-impedance model; $\alpha^{-1} \propto Z_{\text{drift}}$ ($\xi = 1$) is definitional	Model
$N_{c_0} = M/m_P, \;\; \rho_{c_0} \leq \rho_P, \;\; R_{c_0} \propto M^{1/3}$	The capacity relations of the c_0 single structure; the radius scaling only in the constant-density ($\rho_* \leq \rho_P$) realization; R, V, ρ are effective C_m readings (Section 3)	Author's ruling (relations) / internal profile open
$\Psi_{0+} = \ln\dfrac{\Lambda c^4\ell^4}{6G^2M^2}, \;\; \mathcal{A} = \dfrac{1}{w}\ln\!\Big(1+\dfrac{m_P^2}{2M^2}\Big)$	The thought-experiment rate model of the direct $c_0 \rightleftarrows c^+$ edge lock (13.6)	Model

LaTeX record of the equations:

```
\int \mathcal G_{\rm FS}\,d\lambda \ge \theta_{\min},\quad \Delta
t\ge\hbar\theta_{\min}/\overline{\Delta E}
\tau_0\tilde\Gamma\,\mathcal G_{C_m}=\eta_{\rm clock}\,d\tau_{\rm GR}/d\lambda
G_{\mu\nu}+\Lambda g_{\mu\nu} = \frac{8\pi G}{c^4}\,T_{\mu\nu}[J_X]
-\nabla\cdot(Z\nabla\phi)+\mu^2\phi+4\pi G\rho=0,\quad m=\mu/\sqrt{Z}
Q(m) = e^{-m(r_2-r_1)}\,\frac{1+mr_2}{1+mr_1}
\sigma^* = 1/\sqrt2,\quad \sigma_{\rm fold}\approx 0.7391346294
w\to-1 \iff (X_{\min}>0 \lor p=0)\wedge(X_{\max}<1 \lor q=0)
\chi_S \equiv 1,\quad \Delta\varphi \equiv 0
|A_{\rm loop}| = \dfrac{\pi|k|\delta^2\omega}{\lambda^2+\omega^2}
\Delta_{0m}\,\Delta_{+m} = \dfrac{d\ln F}{d\tau}
\ln\dfrac{Z(\tau)}{Z(\tau_0)} = -\displaystyle\int_{\tau_0}^{\tau}\eta(u)\,[F(u)-F^*(u)]\,du
N_{c_0}=M/m_P,\ \ \rho_{c_0}\le\rho_P,\ \ R_{c_0}\propto M^{1/3}
\Psi_{0+}=\ln\dfrac{\Lambda c^4\ell^4}{6G^2M^2},\ \ \mathcal A=\dfrac1w\ln\!\Big(1+\dfrac{m_P^2}{2M^2}\Big)
```

Symbol	Meaning
$\mathcal{G}_{\text{FS}}$	Fubini–Study rate of change (speed in quantum state space)
$\theta_{\min}$	The smallest angle required for distinguishability
$\Delta t_{\min}$, ΔE	The smallest transition time and the energy spread
J_X	The bridge from X to the C_m source (open)

Symbol	Meaning
Z, μ, m	Screening coefficient, screening mass, decay parameter
r_1, r_2	Measurement radii
σ^*, σ_{fold}	Regime thresholds of the Gaussian landscape
w	Dark-energy equation-of-state parameter (in the logistic model); threshold softness in 13.6
A_{loop}	Loop amplitude; k coupling, δ amplitude, ω driving frequency, λ relaxation rate
F, F^*, η	Occupancy, equilibrium occupancy, drift coefficient
Z_{drift}	Drift impedance
N_{c_0}, ρ_P, R_{c_0}	c_0 capacity count, Planck density, single-structure radius
Ψ_{0+}, $\mathcal{A}$	$c_0 \rightleftarrows c^+$ edge potential and cycle affinity

Question	Answer
What does it do?	It gathers the model and bridge equations that are correct within their own assumptions, together with their scope
Why does it do it?	To prevent model results from being silently promoted to the core, and to make the condition of validity of each visible
How does it do it?	Next to each equation it writes its scope, its assumptions and its status (bridge, model, limiting result, identity, author's ruling)
What result is expected?	That the bridges acquire status in the future by being derived or tested with preregistered tests
What result is obtained?	All are results **with written scope**; they are not promoted to the core. The c_0 capacity relations are an author's ruling, but the internal profile is open. None contributes to the counter

APPENDIX A

GLOSSARY OF CONCEPTS

Concept	Definition
Force of Attraction (Turkish: Çekim Kuvveti)	The fundamental ontological postulate; phase-independent constraint coherence. The four known forces are its projections according to scale, amount of mass and phase. Not to be confused with "gravitation"
Gravitation (Turkish: Kütleçekim)	The metric projection of the Force of Attraction in C_m; the subject of general relativity
Constraint coherence	The necessity that the permitted configurations of the three phases be consistent with one another; it does not require a metric
Clustered / expansion-sustaining c^+	The appearances of c^+ clustered with matter (dark matter) and, far from the pressure of matter, sustaining expansion (dark energy); the archive names "bound / free" correspond to these
Vacuum	The C_m reading of c^+ at laboratory and intra-atomic scale; **$c^+ \equiv$ vacuum** (author's ruling). The vacuum state of quantum field theory is the C_m computational language of this identity
Intra-atomic space	The space between the particles that make up the atom; it is the C_m reading of c^+ (author's ruling)
Liminal	Lying on the boundary $v = c$; the state of light. It is the shared boundary of C_m and c^+; it is membership neither in the band $0 < v < c$ nor in c^+ (boundary ≠ membership)
Kinematic membership band	The matter-membership band $0 < v < c$ of C_m; $v = c$ is the liminal shared boundary
U_0 **(Absolute Core)**	The pre-layer / absolute generative source that forms the three phases together, in the same constitution; the layer in which all the structures of the Dynamic Universe exist in a single form, contiguous to a degree that converges to the metric-gapless state; not a phase
U_x **(Dynamic Universe)**	The global structure in which the three phases are realized together; neither a fourth phase nor X
U_+ **(Absolute Dissolution ≡ Absolute Rupture)**	The global dissolution pole; when the whole U_x structure reaches this form, Absolute Rupture and Absolute Dissolution express the same thing. Not a phase, not c^+
Global universe level	The layer U_0, U_x, U_+; separate from the phase level
Principle of Silence	Where there is no representation, Evertophy passes no judgement
Phase regime–threshold boundary	The transition band on the edges; not a new phase, gate or node
SYNTAX	Candidate system of rules determining valid configurations; its relation with U_x / X is open
Reserved ontological heading	A structure whose addition has been decided but whose meaning has not yet been written

Concept	Definition
Big Rupture	The event, both an end and a new birth, that takes place when the global U_x crosses the critical threshold at the boundary of U_+; not the terminal Big Rip scenario of standard cosmology
c_0 (Potential / Black-Hole Phase)	The pre-temporal potential and core phase; black hole ≡ c_0 (author's ruling). Matter is in the form of a contiguous, finite single structure, to a degree that converges to the metric-gapless state at the Planck scale. Time has not stopped; it **has not yet been established**
Metric-gapless single structure	The integrated single form of matter in c_0, in which almost no metric gap remains between particles; not a Planck-sized point; it grows with mass ($\rho \leq \rho_P$)
C_m (Matter Phase)	The phase of differentiated matter; the only home of measurement and physical time; its base space is flat, three-dimensional Euclidean space
c^+ (Dark Matter / Dark Energy / Vacuum Phase)	The atemporal upper / archive / coordination phase; C_m matter support dissolves; c^+ ≡ DM ≡ DE ≡ Vacuum
BEC	Bose–Einstein condensation; not c_0; **the environment in the matter phase closest to the c_0 environment**
$X(x)$	Dynamic meta-resolver; resolves the phase regime and the permitted values; not a scalar; its readings are $\xi_k = \pi_k(X)$
Postulate 0	That the Force of Attraction is the fundamental ontological postulate
Range Formalism	Writing physical quantities as interval-valued; $[P, P]$ is valid
Gate	The possibility of phase transition; bidirectional
Transport permission	That a quantity can pass through a gate; it requires the quantity to be natively defined at both ends
Readout	The observation in C_m, in C_m's own language, of an effect sourced in c^+ or c_0; not transport
Stamp	The record imprinted in a transition; unidirectional
Sealing	The irreversible writing of a record
Record channel	The unidirectional $C_m \rightarrow c^+$ channel; once sealed, the record is fixed (author's ruling)
Phase memory	The monotone accumulation of threshold statistics in provenance order
Phase-parameter matrix	PropertyFamily × Phase → Range or ⊥
$\perp_0$ / $\perp_+$	The "not yet established" undefinedness in c_0 and the "dissolved" undefinedness in c^+; the two are different and neither is the numerical zero
Threshold (liminal) regime	An intermediate state not fully projected onto C_m
Parameter budget	The rule free inputs < predicted outputs
Intersection measure	The overlap ratio of prediction and observation ranges
Compatible reading	An Evertophy interpretation that does not contradict the measured results of an experiment; not a claim of certification or of being the only explanation
Counter	The canonical numerical-prediction counter; current value 0/10
Consensus ⇏ canon	The consensus of multiple systems does not determine the canon; only the author determines the canon

APPENDIX B

LIST OF SYMBOLS

Symbol	Meaning
U_0	Absolute Core — global saturation pole / pre-layer
U_x	Dynamic Universe — object of the global level and holistic representation of the three-phase system ($\neq X(x)$)
U_+	Absolute Dissolution ≡ Absolute Rupture — global dissolution pole
$\mathcal{L}_{\text{çöküş}},\ \mathcal{L}_{\text{seyrelme}}$	The two global limits
$c_0,\ C_m,\ c^+$	The three phases
$\Delta_{0m},\ \Delta_{+m},\ \Delta_{0+}$	The three edges of the complete triangle (K3); the first two carry stamps, the third is stampless
$X(x)$	Dynamic meta-resolver (not a scalar)
$\xi_k = \pi_k(X)$	The k-th reading (projection) of X
$\xi_{\text{sat}} = \pi_{\text{sat}}(X)$	Saturation reading; in c_0 $\xi_{\text{sat}} \to \xi_{\text{sat}}^{\max}$ (≈ 1 in the normalized reading)
$\Theta_{\text{alan}},\ \Theta_{ij}$	Domain-specific parameters; the transition-specific family of context
ρ_{C_m}	C_m state descriptor
$\mathcal{G}_{C_m}$	The structure of measurable change and differentiation within C_m (norm of change)
Γ	The coefficient of the C_m readout / reporting-regulation family (7.2)
$\tau_0,\ \tilde{\Gamma}$	Time-production scale and dimensionless coefficient
τ	Ordering parameter
λ	Dimensionless parametrization variable (7.3)
τ_{GR}	C_m proper time — general-relativistic reading (8.7)
Z_g	Gravitational impedance — defined only in C_m (8.7)
$\perp_0,\ \perp_+$	Undefinedness "not yet established" in c_0 and "dissolved" in c^+; $\perp_0 \neq \perp_+ \neq 0$
$T(c^+) = \perp_+$	The time state of c^+; $dt_{c^+} = 0$ is only a pedagogical shorthand
$0 < v < c$	The kinematic membership band of C_m; v here is the membership reading ($v_{\text{üyelik}}$)
$v_{\text{üyelik}},\ \beta = v_{\text{üyelik}}/c$	The ontological membership reading and its dimensionless form; its operational definition $\mathcal{R}_v$ is open (3.3)
v_{lab}	Laboratory coordinate speed; $v_{\text{lab}} = 0 \not\Rightarrow c_0$
q_∂	The phase regime–threshold boundary / quantum readout axis (18.0)
$v_\partial,\ \rho_\partial$	The C_m boundary readings of departure from c_0 (3.2)
$v = c$	The liminal shared boundary of C_m and c^+
m_P	Planck mass; the counting unit of c_0 capacity (3.2)
ℓ_P	Planck length

Symbol	Meaning
ρ_P	Planck density, $c^5/(\hbar G^2) \approx 5.16 \times 10^{96}$ kg/m^3; the density upper bound of c₀
$N_{c_0} = M/m_P$	c₀ capacity count
V_{c_0}, R_{c_0}	The effective Cₘ volume ($\geq N_{c_0}\ell_P^3$) and radius ($\geq R_{c_0}^{\min}$; $\propto M^{1/3}$ at constant density) of the c₀ single structure
R_s, A	Schwarzschild radius ($\propto M$) and horizon area ($\propto M^2$)
T_H	Hawking temperature — the Cₘ readout temperature of the horizon (candidate reading, 3.2)
Ψ_{0+}	Direct c₀ ⇄ c⁺ edge potential — model (13.6)
Ξ_g, Ξ_Λ, Ξ_q	Gravitational, expansion and quantum projection ratios — model (13.6)
$\Xi = \ln \chi_S$	Logarithmic channel-asymmetry measure (8.8, 17.1)
Ξ_{iz}	Alternative functional seal candidate in the context of the phase trace (7.9)
Note	The three Ξ families are unrelated to one another; the shared letter is only historical notation
$\mathcal{O}_{c_0}^{C_m}$	The readout map from the c₀ structure to effective Cₘ parameters (3.2)
ρ_*	The single-structure density in the constant-density realization ($\leq \rho_P$)
η_{clock}	The dimensionless clock ratio between Evertophy time and proper time (7.4)
$\Phi_{\text{ch}}^{\text{gen}}$, ϕ_{ch}	Channel amplitude potential and phase (17.1a)
$\mathcal{A}$	Cycle affinity — model (13.6)
$g_{\mu\nu}$	Metric (Cₘ only)
$E^A{}_\mu$	Tetrad (Cₘ only)
$\mathcal{E}_m^{(0)}$, $\mathcal{E}_m^{(+)}$	Metric-birth maps
G_{eff}	Effective gravitational coupling (model)
S_c	Sensitivity coefficient
$\Delta X_{\text{acc/pred/obs}}$	Acceptance / prediction / observation ranges
M	Stamp monoid (may also denote mass depending on context; stated separately)
s, s'	Free stamp generators
κ_{0m}, κ_{+m}	Lock stamps
rid	Record identity
χ_S	Channel asymmetry (candidate bridge)
C_s	Sealing cost (candidate reading)
R_φ	Phase-memory record
$\perp$	Not admissible in that phase (general notation)
`None`	No stamp was produced (NoStamp ≠ NoTransition)
$[P, P]$	A valid zero-width range

APPENDIX C

FUNDAMENTAL EQUATIONS AND PROTECTIVE RECORDS

This appendix has been prepared to prevent the same equation symbol from drifting into different meanings in different layers. The equations are divided into thematic groups; each group is followed by a short symbol table and a question–answer table. Detailed explanations are in the sections shown in parentheses; all symbols are also collected in APPENDIX B. The distinction between **core**, **formal candidate** and **model** is stated explicitly in each group.

C.1 Origin, the global level and phase topology

Origin / pre-layer:

$$U_0 \rightsquigarrow \{c_0,\, C_m,\, c^+\}_{\text{simultaneous — together, in the same constitution}}, \qquad U_0 \notin \mathrm{Obj}(\mathcal{C}_{\text{faz}})$$

The whole of the system — sourced canon, meaning partly open:

$$U_0 \leftrightarrow [c_0 \rightleftarrows C_m \rightleftarrows c^+] \equiv U_x, \qquad U_x \equiv \{c_0, C_m, c^+\}_{\text{sistem bütünü}}$$

The chain notation here preserves the historical source expression; the current gate topology is the complete bidirectional triangle below. The full meaning of the relation $U_0 \leftrightarrow U_x$ is an open debt.

Phase topology (K3):

$$c_0 \overset{\Delta_{0m}}{\longleftrightarrow} C_m, \qquad C_m \overset{\Delta_{+m}}{\longleftrightarrow} c^+, \qquad c_0 \overset{\Delta_{0+}}{\longleftrightarrow} c^+$$

The global universe cycle, the two birth events and the safeguards:

$$U_0 \;\leftrightarrow\; U_x \;\leftrightarrow\; U_+, \qquad U_0,\, U_x,\, U_+ \notin \{c_0,\, C_m,\, c^+\}$$

$$U_x \text{ crosses the critical threshold at the boundary of } U_0 \Rightarrow \text{Big Bang},$$

$$U_x \text{ crosses the critical threshold at the boundary of } U_+ \Rightarrow \text{Big Rupture},$$

$$\text{in both cases } \Rightarrow U_x$$

$$U_+ \;=\; \text{Absolute Dissolution} \;\equiv\; \text{Absolute Rupture} \qquad (\text{when the whole } U_x \text{ structure reaches the form of } U_+)$$

$$\text{Genesis} = U_0 \rightsquigarrow \{c_0, C_m, c^+\}_{\text{simultaneous}},$$

$$\text{CycleSeed} = \{\mathcal{L}_{\text{çöküş}}, \mathcal{L}_{\text{seyrelme}}\},$$

$$\text{Cycle index} \neq t,$$

$$U_0 : c_0 \;\not::\; U_+ : c^+$$

The double-limit core seed — mechanism set aside for V24:

$$\text{DoubleLimit}_{\text{çekirdek}} = \{\text{collapse / saturation limit},\ \text{dilution / closed-cycle limit}\},$$

$$\text{DoubleLimit}_{\text{çekirdek}} \not\Rightarrow (c_0 \to U_0) \text{ as an ordinary phase transition}$$

Symbol	Meaning
$\rightsquigarrow$	"Gives birth to" (a generative relation; not a physical transition)
$\mathrm{Obj}(\mathcal{C}_{\text{faz}})$	The objects of the phase category (the three phases)
$\Delta_{0m}, \Delta_{+m}, \Delta_{0+}$	The edges of the triangle
$\mathcal{L}_{\text{çöküş}}, \mathcal{L}_{\text{seyrelme}}$	The two global limits
:: / $:\!\!\not:$	A proportional analogy is / is not set up

Question	Answer
What does it do?	It records in one place the origin, the two-level architecture (phase level and global level) and the phase topology
Why does it do it?	To prevent U_0, U_x, U_+ from being confused with the phases, and the historical chain notation from clashing with the current triangle
How does it do it?	It places the global objects outside the set of phases; it names the three edges of the triangle; it writes the two birth events and the safeguards
What result is expected?	That the same architectural language is used in all sections
What result is obtained?	**Core** (author canon); the full meaning of the relation $U_0 \leftrightarrow U_x$ and the double-limit mechanism are open

C.2 The kinematic band, the resolver and the matrix

$$0 < v < c \neq \text{ laboratory coordinate speed},$$

$$v = c \text{ liminal shared boundary (boundary} \neq \text{membership)},$$

$$v_{\text{lab}} = 0 \not\Rightarrow c_0$$

$$S_1 = S_2 \Longrightarrow X(S_1) = X(S_2), \qquad X_\phi = X_\phi(x; \theta_1, \ldots, \theta_{n_\phi}), \qquad \xi_k = \pi_k(X)$$

$$\text{MetaCrossPermission}(X) = \text{true}, \qquad \text{MetaCrossPermission} \neq \text{TransportPermission}$$

$$\text{ÖzellikAilesi} \times \text{Faz} \longrightarrow \text{Aralık or } \bot,$$

$$P \in [P^-, P^+],$$

$$[P, P] \text{ is valid},$$

$$\text{interval-valued} \not\Rightarrow \text{time-variable}$$

Symbol	Meaning
S_1, S_2	Two fully determined states
X_ϕ	The presentation of X in phase ϕ; the number of arguments n_ϕ may vary with phase
θ_i	Context parameters
π_k	The k-th readout projection of X
MetaCrossPermission	The inter-phase meta-coordination permission of X
P^-, P^+	The lower and upper ends of the range

Question	Answer
What does it do?	It records the Cm membership band, the determinism of the resolver and its phase-dependent argument structure, the matrix architecture and the Range Formalism
Why does it do it?	To prevent misreadings of the concepts of speed, resolver and range (confusion with laboratory speed, mistaking X for a scalar, forbidding $[P, P]$)
How does it do it?	It fixes each concept with a one-line protective equation
What result is expected?	That all uses in the main sections conform to these safeguards
What result is obtained?	**Core** (Sections 3, 4, 5, 6)

C.3 Time

$$dt = \Gamma\, \mathcal{G}_{C_m}\, d\tau, \qquad \tau \neq \text{fundamental physical time}$$

$$dt = \tau_0 \tilde{\Gamma}\, \mathcal{G}_{C_m}\, d\lambda, \qquad \mathcal{G}_{C_m} \overset{\text{model}}{=} \left\| \frac{d\rho_{C_m}}{d\lambda} \right\| \qquad \text{(example of a model realization)}$$

$$\left.\frac{\partial X}{\partial E_{\text{probe}}}\right|_{\mathcal{S}} = 0, \qquad \left.\frac{\partial \Gamma}{\partial E_{\text{probe}}}\right|_{\mathcal{S}} = 0 \qquad \text{(achromaticity)}$$

$$T(c_0) = \perp_0 \text{ (not yet established)},$$
$$T(c^+) = \perp_+ \text{ (dissolved)},$$
$$\perp_0 \neq \perp_+ \neq 0,$$
$$dt_{c^+} = 0 \ \text{ (pedagogical shorthand only)}$$

Symbol	Meaning
dt	The interval of physical time produced in Cm
Γ, $\tilde{\Gamma}$, τ_0	Readout coefficient, its dimensionless form, time scale
$\mathcal{G}_{C_m}$	The structure of measurable change and differentiation within Cm
τ, λ	Ordering parameter, dimensionless parametrization
ρ_{C_m}	Cm state descriptor
E_{probe}	The energy of the probe signal
$\mathcal{S}$	The context held fixed
$T(\cdot)$	The time state of a phase

Question	Answer
What does it do?	It records that time is produced only in Cm, that the reading is independent of energy, and that the absences of time in the two outer phases are different
Why does it do it?	To prevent mistaken readings such as "time has stopped in c0" or "is zero in c+"
How does it do it?	It writes side by side the time scaffold, a model realization, the achromaticity constraint and the two different symbols of undefinedness
What result is expected?	A closed definition of $\mathcal{G}_{C_m}$

Question	Answer
What result is obtained?	The scaffold and the distinction of undefinedness **are core**; the model realization **is a model**; $\mathcal{G}_{C_m}$ is an object not yet closed (Section 7)

C.4 Metric, matter and the c₀ single structure

$$\mathrm{Dom}(g_{\mu\nu}) = C_m, \qquad g_{\mu\nu}\big|_{c_0} = \perp_0, \qquad g_{\mu\nu}^{(C_m)}\big|_{c^+} \to \perp_+, \qquad \mathrm{supp}_{C_m}(\text{madde}) \to \varnothing \;\; (c^+)$$

$$\lim_{C_m \to c_0} g_{\mu\nu}^{(C_m\text{-reading})} \to 0 \qquad \text{(conditional historical model; no derivation)}$$

$C_m \to c_0$: metric-gapless single structure, $\qquad C_m \to c^+$: dissolution of Cm matter support

$$\xi_{\mathrm{sat}} = \pi_{\mathrm{sat}}(X) \to \xi_{\mathrm{sat}}^{\max},$$

$$N_{c_0} = \frac{M}{m_P},$$

$$\rho_{c_0} \le \rho_P,$$

$$V_{c_0} \ge N_{c_0}\ell_P^3,$$

$$R_{c_0} \propto M^{1/3} \;\&\; \frac{R_{c_0}}{R_s} \propto M^{-2/3} \;\; (\rho_{c_0} = \rho_* \text{ constant})$$

$$c^+ \equiv \mathrm{DM} \equiv \mathrm{DE} \equiv \text{Vacuum},$$

every region read as "empty space" in Cm (even inside the atom) = the Cm reading of c^+

Symbol	Meaning
$\mathrm{Dom}(g_{\mu\nu})$	The domain of definition of the metric
supp_{C_m}	Matter support in Cm
N_{c_0}, ρ_P, V_{c_0}, R_{c_0}, R_s	c₀ capacity count, Planck density, single-structure volume and radius, Schwarzschild radius
DM, DE	Dark matter, dark energy

Question	Answer
What does it do?	It records the domain of the metric, the two different transitions of matter, the capacity relations of the c₀ single structure and the identity of c⁺
Why does it do it?	To prevent the metric from being carried into the outer phases, and to take the author's approvals of 2026-10-14 into the core protective record
How does it do it?	It restricts the metric to Cm; it writes the undefinedness in c₀ and c⁺ with separate symbols; it scales c₀ capacity in Planck units; it writes the identity c⁺ ≡ vacuum
What result is expected?	The derivation of the internal profile of the single structure and of its quantitative relation with the horizon
What result is obtained?	The domain of the metric and the transitions of matter **are core**; the c₀ capacity relations and c⁺ ≡ vacuum **are author's rulings**; the historical limit **is a model**

C.5 Transition, stamp and archive

$$(X,\Theta_{ij}) \in \mathcal{D}_{ij}^{\mathrm{adm}} \iff \mathcal{A}_{ij}(X,\Theta_{ij}) = 1$$

$\mathrm{Seal}([p^-,p^+]) = (\mathrm{rid},\ \mathrm{kenar},\ \mathrm{damga},\ [p^-,p^+])$, record channel: $C_m \to c^+$ (unidirectional; seal fixed)

$M = \langle s, s', \kappa_{0m}, \kappa_{+m} \mid \kappa_{0m}^2 = \kappa_{0m},\ \kappa_{+m}^2 = \kappa_{+m} \rangle$, $\mathrm{Idem}(M) = \{e, \kappa_{0m}, \kappa_{+m}\}$, $G_{\mathrm{univ}}(M) \cong F_2$, $K(M) \cong \mathbb{Z}^2$

$$\Omega(m) = \log \frac{W_{\text{önce}}}{W_{\text{sonra}}}, \qquad \omega_{AB}(s) = \ln W_A(s) - \ln W_B(s), \qquad \Omega_{\mathrm{enc}}(m) = \left[\log \frac{W_A^-}{W_B^+},\ \log \frac{W_A^+}{W_B^-}\right]$$

$$\omega(\kappa) = 0, \qquad 0 \in \Omega_{\mathrm{enc}}(\kappa), \qquad \Pi_\kappa : \mathcal{B} \to \mathcal{B}, \quad \Pi_\kappa^2 = \Pi_\kappa$$

$$A + [r_1] + [r_2] \neq A + [r_1] \ \ (\mathrm{rid}(r_1) \neq \mathrm{rid}(r_2)),$$

$$\mathrm{NoDup}(A.\mathrm{map\ rid}),$$

$$A \preceq A',$$

$$\mathrm{append}(A,r) \text{ only if } \mathrm{rid}(r) \notin \mathrm{IDs}(A)$$

$$\mathrm{emittedStamp}(T_{0+}) = \texttt{None}, \qquad \Sigma(T_{0+}) = e, \qquad q(T_{ji}) = q(T_{ij})^{-1}$$

$$\mathcal{R}_{0+}^X \subseteq \mathcal{X}_0 \times \mathcal{X}_+, \qquad \mathcal{X}_0 \xleftarrow{p_0} \mathfrak{F}_{0+}^X \xrightarrow{p_+} \mathcal{X}_+ \qquad \text{(formal candidate)}$$

Symbol	Meaning
$\mathcal{D}_{ij}^{\mathrm{adm}}$, $\mathcal{A}_{ij}$	The admissible domain of the edge and the admission indicator (13.2)
Seal	The sealing operation; produces a record while preserving the range
M, s, s', κ	Stamp monoid, free generators, locks (14.2)
W, Ω, ω, Ω_{enc}	Width, weight, exact character, coverage range (14.3)
Π_κ	The projector representation of the lock
A, $[r]$	Raw archive, a single record
Σ, q	Stamp map, forgetful map (14.6)
$\mathcal{R}_{0+}^X$, $\mathfrak{F}_{0+}^X$	The $c_0 \mapsto c^+$ compatibility relation and its fibre (13.5)

Question	Answer
What does it do?	It keeps together the records of transition permission, sealing, the stamp algebra, weight, the raw archive and the stampless edge
Why does it do it?	So that all algebraic and formal expressions of the structure "the gate is bidirectional, the stamp unidirectional" remain consistent
How does it do it?	It writes each relation in its shortest protective form; it separately marks those that are formal candidates
What result is expected?	That the archive–Σ integration and the meaning of direction are closed formally
What result is obtained?	The stamp algebra **is proven**; the direction of the record channel **is an author's ruling**; the $c_0 \mapsto c^+$ fibre **is a formal candidate**

C.6 Topology, bridge and method

$$V = 3, \quad E = 3, \quad \beta_1 = 1, \quad H_1 \cong \mathbb{Z} \ \text{(boundary triangle)}, \qquad H_1 = 0 \ \text{(filled triangle)}$$

$$[\Delta_{\text{kabuk}}]_{\text{ET}} = [\mu_A] \odot [\Delta_{\text{kabuk}}]_{\text{yapı}}$$

$$N_{\text{serbest}} < N_{\text{gözlenebilir}}, \qquad D_{\text{model}} = N_{\text{skaler}} + N_{\text{fonksiyonel}} + N_{\text{hiper}}$$

$$D_{\text{türetim}} \cap D_{\text{kör}} = \varnothing, \qquad \theta_{\text{köprü}} \text{ is frozen before the blind data are opened}$$

$$\Delta X_{\text{pred}} \cap \Delta X_{\text{obs}} = \varnothing \Longrightarrow \text{the prediction is rejected}$$

Symbol	Meaning
V, E, β_1, H_1	Numbers of vertices and edges, Betti number, homology (19.5)
$[\mu_A]$, $[\Delta_{\text{kabuk}}]$	Bands of envelope modulation and shell gap (22.2)
N_{serbest}, $N_{\text{gözlenebilir}}$, D_{model}	Quantities of the parameter budget (23.5)
$D_{\text{türetim}}$, $D_{\text{kör}}$, $\theta_{\text{köprü}}$	Quantities of the Strict Blind Lineage (22.5)
ΔX_{pred}, ΔX_{obs}	Prediction and observation ranges

Question	Answer
What does it do?	It records the topology, the nuclear bridge ansatz, the parameter budget, the blind lineage and the condition of empirical rejection
Why does it do it?	So that the rules of the framework's contact with observation are fixed at the level of symbols
How does it do it?	It writes each rule of method with a single equation
What result is expected?	That all bridge tests are carried out with these rules
What result is obtained?	The topological results **are proven**; the nuclear ansatz **is a conditional structural candidate**; the rules of method **are binding**

APPENDIX C.7 Note of correspondence with the candidate inventory of Section 27

The inventory in Section 27 lists the candidate family of the protective records of this appendix. That an equation is named in Section 27 does not mean that it has been raised to core status in APPENDIX C. Its status is determined by the mark in the relevant main section.

APPENDIX D

THOUGHT EXPERIMENTS AND ANALOGIES

The following are **conceptual tools**. None of them is evidence or a derivation.

Informational compression

In c_0, a state is a complete and undifferentiated, metric-gapless single whole. In the transition to C_m, this whole is **read by being resolved**: at finite resolution, in the form of discrete objects. This is the intuitive picture of why C_m measurement has finite resolution.

The dashboard

C_m is **the readable surface** of reality. A dashboard is not the engine itself; it is the readable state of the engine. But without the dashboard, nothing can be said about the engine.

The cinema screen

The motion seen on the screen is not in the screen itself; it arises from reading successive frames. Time is like this too: not something that "flows", but a reading **that arises from accumulation**.

Değnek Ambarı ("baton depot")

The name of the working method. An arrangement in which several independent tools work by auditing one another. None of them alone is authoritative; the value comes from **crossing**. The final decision is the author's.

Collective behaviour

Bose–Einstein condensation and superfluidity are laboratory-accessible examples of discrete objects behaving like a collective whole. **The BEC is not c_0; it is the environment in the matter phase closest to the c_0 environment** (18.5). For this reason it is the best window for looking at the c_0 single-structure intuition from within C_m; but the window is not the thing it looks at.

The resolver call

X is not a value but **the result of a resolution call**: it takes the context and returns what is valid in that context. It is only a programming analogy.

The Moon / informational-resolution analogy

The historical "Moon analogy" was used to separate the full ontological state from the finite readout capacity of C_m during readout between phases. The safe core of the analogy is: **the full state of a source and the C_m projection taken from it are not the same kind of information**. This is neither evidence of physical data compression nor a derivation of a particular number of bits.

The Hartman effect

From the point of view of standard physics, the Hartman effect is the phenomenon of the group delay reaching saturation in opaque tunnelling barriers; in standard theory, this saturation is explained by the group delay being related not to a traversal time but to the release time of the energy stored in the barrier (Winful 2003). The Evertophy reading is therefore **a compatible reading**, not a verification. In Evertophy it motivates only the following thought experiment: in the phase-threshold region, the language of a pure C_m traversal time may be inadequate.

> Hartman saturation $\neq$ traversal time really zero $\neq$ evidence of a faster-than-light signal

The Schwinger effect

Schwinger pair production is the production of particle pairs from the energy of a strong external field. Under the identity $c^+ \equiv$ vacuum, this phenomenon is **read** as a local phase transition triggered by external energy on the $c^+ \to C_m$ edge (candidate reading, 18.4). But:

> The Schwinger effect $\neq$ evidence of the ontological transition $c^+ \to C_m$

The energy does not come "from nothing": the energy of the external field enters the budget.

The black-hole thought experiment

Black hole $\equiv c_0$ is the author's ontological definition; the one-to-one identity of the event horizon and the phase boundary, however, has not been established. Taking the density at its Planck value ($\rho_* = \rho_P$; the smallest radius), in a black hole of one solar mass the radius scale of the single structure ($\sim 10^{-23}$ m) is much smaller than the horizon radius (~3 km). The current core preserves the following distinction:

```
horizon = causal / geometric structure of Cₘ
c₀      = the pre-temporal phase of a metric-gapless integrated single structure
```

The archive / library analogy

That records in an archive are accessible together does not show that the archive has its own "flowing time". This analogy conveys intuitively the separation of provenance order and physical time in c^+.

Historical processing analogies

Registry saturation is an interpretation that conveys the idea of archive saturation instead of heat death; it is neither a thermodynamic result nor a law of c^+. The language of **IPW, processing jitter, frame rate** and **gearbox** carries the intuition of finite processing / sampling in the C_m reading; it produces no canonical "gear throughput" prediction for H_0. The expressions "c^+ network / skeleton" and "bound / free texture" are likewise historical narrative faces; they do not replace the current definition of c^+.

Değnek Ambarı — a four-layer note on method

In the historical narrative, the Değnek Ambarı carries four separate layers of protection: physics audit, method audit, the risk of AI drift, and an ethics / consciousness lock. These layers are a working discipline; they are not physical phases or fundamental ontological elements.

The satellite–electron chain of thought experiments

The satellite–electron chain of thought experiments: (1) the orbital electron — the very long-term behaviour of an electron in a pure space environment; (2) the projection of the universal Planck density. The aim of the chain is to convey an intuition of the laboratory–space relation of c_0; it is not a proposal for measurement.

A thought exercise on the vacuum experiment

This is an exercise in how a process would be read in a perfect vacuum (cosmic or laboratory). In the current canon, **the vacuum is the C_m reading of c^+** ($c^+ \equiv$ vacuum, Section 3); the vacuum state of quantum field theory is the computational language of this identity. The exercise recalls two things: that the vacuum looks "empty" is not the absence of c^+ but the way it is read in C_m; and the absence of matter does not prove c_0 either, because c_0 is not the absence of matter but the state of a metric-gapless single structure.

Table of analogies: BEC super-atom and superfluid helium-4

Laboratory system	Contribution to the c_0 intuition
BEC super-atom	Collective behaviour in a single quantum state — the environment in the matter phase closest to c_0
Superfluid He-4	Frictionless collective flow

Both are examples of the family of analogies of Section 3; they are not real identities.

The frequency-transformation thought experiment

This is the analogy-level statement of the record of 25.32.

"From a soft dial to a sudden switch" — an analogy of the phase regime–threshold boundary

This is an everyday analogy conveying the behaviour of the boundary band: the transition between a soft dial (gradual) and a sudden switch (threshold). The terminology lock of 25.1 also applies here — the everyday keyword does not enter the academic text.

APPENDIX E

EPISTEMIC ORDER

Who determines what

Source	Authority
Direct architect (author) clarification	Canon — the status of source code
Current core	The ontology in force
Current formal canon	Verified formal result
Compatible formal candidate	Subject to approval
Historical archive	Preserved, not mixed in
Tool interpretation	Draft

> Rules of method bind the TOOLS; they do not bind the ARCHITECT.

If a rule says "do not produce new canonical content", it is directed at **the tools.**

Items of direct canon

The following are direct ontological inputs of the architect and cannot be changed by tool interpretation:

- That U_0 forms the three phases **simultaneously** — together, in the same constitution
- The topology of the **complete bidirectional triangle**
- The internal ontological identity $c^+ \equiv$ dark matter $\equiv$ dark energy $\equiv$ **vacuum**
- That even the space between the particles that make up the atom is c^+
- **Black hole ≡ c_0**, and that matter in c_0 is **in the form of a single structure**, contiguous to a degree that converges to the metric-gapless state at the Planck scale (which does not mean a Planck-sized core); that capacity is counted in Planck masses and that density does not exceed the Planck density
- That time in c_0 has not stopped but **has not yet been established**; that time in c^+ is dissolved ($\perp_0 \neq \perp_+ \neq 0$)
- That the kinematic membership band of C_m is $0 < v < c$; that $v = c$ is the liminal shared boundary of C_m and c^+
- That **the record channel is unidirectional in the $C_m \rightarrow c^+$ direction** and that, once sealed, the record remains fixed
- That the BEC is not c_0 but **the environment in the matter phase closest to the c_0 environment**
- That c^+ is a **closed cycle**, and that its justification is **first the academic boundary**
- The core status of **the method of the phase-parameter matrix**
- That $[P, P]$ is a valid range

- **The existence of the global universe level** (U_0, U_x, U_+) and its separateness from the phase level
- U_+ **— Absolute Dissolution ≡ Absolute Rupture**; the Big Rupture is related to the critical threshold at the boundary of U_+
- **That the Dynamic Universe may or may not come to an end**
- **The Principle of Silence**
- **The third principle:** a mathematical representation that correctly reproduces a measurement is accepted unconditionally within the scope of that measurement; there is no ontological priority among representations
- **The core-structure status of the canonical figure** (APPENDIX J)

How novelty works

A later record does not invalidate an earlier one — it **writes over it**, and the old one is kept together with the reason why it was abandoned. The learning history of a framework is as informative as its present state.

Summary of tool alignment

Every tool working with this monograph must know these four things:

1. **The order of precedence** is in the table above; a tool's own output is at the bottom.
2. **Historical content is preserved but not mixed into the current core.**
3. **Assignment of mechanism is not derivation**; writing a correspondence does not produce a number.
4. **The counter is at 0/10**, and it does not move unless the six conditions are satisfied together.

APPENDIX F

FORMAL ARCHITECTURE AND STATE OF IMPLEMENTATION

Layers

The aim of the formal core is not to compress all physical content into a single structure, but to separate semantic classes at the level of types. When the type system enforces the layer to which a concept belongs, most of the warnings in the text that "must be kept separate" become errors that the compiler catches by itself.

```
Origin / upper layer:
    U₀
    Uₓ = holistic representation of the three-phase system
    U₊ = Absolute Dissolution ≡ Absolute Rupture

Ontology:
    Phase = {c₀, Cₘ, c⁺}
    X = meta-resolver (not a scalar; its readings ξ_k = π_k(X))

Gates:
    complete bidirectional triangle (Δ₀ₘ, Δ₊ₘ stamped; Δ₀₊ stampless)

Transition:
    Edge class + direction + admissibility

Stamp:
    Stamp class + stamp emission + monoid M

Archive:
    raw provenance records + append-only order
    record channel: Cₘ → c⁺ (unidirectional; seal fixed)

Coordination:
    c₀↔c⁺ X-relation / fibre candidate

Readout:
    Cₘ observables (including the c⁺ ≡ vacuum reading)

Method:
    Parameter Budget + Bridge Budget + preregistration
```

Minimal type skeleton

The following scheme is an orientation for implementation; it is not the final programming language of the ontology.

```
inductive Phase
  | c0
  | cm
  | cp

inductive TemporalRole
  | preEmergent
  | physicalTime
  | atemporalRecord
```

```
inductive EdgeClass
  | e0m
  | emp
  | e0p

inductive ArchiveEffect
  | noMutation
  | append
  | readProject

inductive CoordEffect
  | none
  | xCoord

structure TransitionSemantics where
  src : Phase
  dst : Phase
  edge : EdgeClass
  stampEmission : Option Stamp
  archiveEffect : ArchiveEffect
  coordEffect : CoordEffect
```

`U₀`, `Uₓ` and `X` are not constructors of the type `Phase`. `Uₓ` is the representation, at the level of the whole system, of the three `Phase` constructors; it adds no new fourth constructor.

Priorities of formal closure

1. For the normal-form reducer / rewriting system, that all paths meet in the same normal form (confluence) — **closed** (14.2).
2. General associativity — **closed** (14.2).
3. Classification of idempotents — **closed** (14.2); what remains is only package integration.
4. The full range character for $I(\mathbb{Q})$ / the real numbers.
5. Uniqueness of the archive `rid` and the append-only invariants.
6. Integration of q / Σ / the meaning of archive direction (aligned with the ruling of the record channel $C_m \to c^+$).
7. A minimal type and Parameter Budget accounting for the X-coordination relation / fibre.
8. The formal type of the interfaces for C_m metric reconstruction.
9. Encoding $\perp_0$ and $\perp_+$ as separate types (`undefined0` / `dissolvedPlus`), and separating the pedagogical shorthand $dt_{c^+} = 0$ from the numerical zero at the type level.
10. Splitting the meaning of direction into separate types: `TransitionDirection`, `StampCarried`, `StampEmitted`, `ArchiveAppend` (13.3, 14.7).
11. Typing the global boundary relations (`GlobalBoundary(Uₓ,U₀)`, `Genesis`, `Dissolution`) as pure relations containing no time parameter.
12. Encoding the band types (B_{kesin}, $B_{1-\alpha}$, $B_{\text{inanç}}$) as separate types (21.6).
13. Publication package: packaging the canonical figure file (`Evertophy_Core_20260919_revize_gerekiyor_v2.png`) with the document; a reproducible build record with the Lean / toolchain version, source digest and axiom inventory.

Interpreting the number of theorems

The 119 theorem declarations reported in the earlier inventory (historical inventory; current inventory $269 = 46$ production $+223$ archive, 23.10) show the machine-checked part of formal definitions and invariants. This number does **not** mean: 119 independent laws of physics · 119 experimental successes · the verification of Evertophy.

$$269 = 46_{\text{üretim}} + 223_{\text{arşiv}}, \qquad 223 = 66_{\text{eski}} + 53_{\text{V03}} + 104_{\text{V24}}$$

Question	Answer
What does it do?	It breaks down numerically the composition of the formal inventory
Why does it do it?	To prevent the number of theorems from being read as a success of physics, and to make the consistency of the count visible
How does it do it?	It splits the total into production and archive, and the archive into three subpackages
What result is expected?	That the same number is obtained again by an independent external build
What result is obtained?	**It is a formal inventory**; it is not a count of physical verifications. The count is recorded with attribution to the source run (23.10)

Current formal status

Formal / production core — closed: the distinction between phase and global node · that U_x is not a pole · the phase-indexed value type · the admissibility of the metric only in C_m · kind of quantity ≠ dimension · native / source / observation phase roles · the typed C_m readout interface · gate ≠ transport permission · the C_m-specific gate lock · gate lock ⟹ at most one native phase · the append monotonicity of the archive count · the distinctions of event kind and trace policy · associativity, termination, unique normal form, confluence and classification of idempotents of the stamp algebra · the non-uniqueness of the bridge in a finite model.

Formal candidate / open: the physical readout law · the general bridge selector · the realization of the X-fibre · metric reconstruction · fully general, extended and dependency-tracking range arithmetic · non-production path and category candidates · encoding the capacity relations of the c_0 single structure ($N_{c_0} = M/m_P$, $\rho \le \rho_P$) at the type level.

Typed ontology extension — Phase / GlobalNode, Gate / GlobalRel, Ux ∉ Pole

Formal proposal: the two ontological levels are separated at the type level — `Phase` (c_0, C_m, c^+) and `GlobalNode` (U_0, U_x, U_+); gates are of type `Gate`, global arrows of type `GlobalRel`, and the invariant `Ux ∉ Pole` is enforced at the type level. **Closed** in the production core: the distinction between phase and global node, that U_x is not a pole, the phase-indexed value type, the C_m-specificity of the metric, kind of quantity ≠ dimension, gate ≠ transport permission, phase roles and the gate lock. Outside production and **open**: the full algebra of global relations, the path-groupoid extension, the physical bridge selector, the X-fibre and metric reconstruction.

Value types — CmOnlyValue, MetricAdmissible, QuantityKind / Dimension

Status: formal — closed (production core). Family of types: stamping C_m-specific quantities with `CmOnlyValue`, the condition `MetricAdmissible` for the metric, separating the kind of quantity from the dimension label (the formal counterpart of 5.3a).

Bridge types — BridgeSpec, CmReadoutBridge, the non-uniqueness of the bridge

Status: non-uniqueness formally closed; the general selector open. The formal statement of the proven result of non-uniqueness (24.1): several `BridgeSpec`s can satisfy the same conditions of type and well-definedness; therefore the selection of the bridge requires observation.

Gate typing — the typed gate, GateRelated ≠ TransportPermission

Status: formal — closed (production core). The formal counterpart of 13.1a: while `GateRelated(c0, cp)` is true, this gives no permission to transport a quantity; transport permission is of a separate type `phase-license`.

Path algebra — ordinary category / path groupoid and a staged non-scalar X + ξ projections

The formal background of 13.2: composition of transitions in an ordinary category, an invertible path algebra in the bare layer (path groupoid), a monoid in the stamp layer (not a group). For the non-scalar X, the edge-specific readout projections $\xi_{ij} = \pi_{ij}(X)$.

APPENDIX G

HISTORICAL READINGS

This appendix has been taken out of the publication core; its content is preserved in the V24 rolling master record (§688).

APPENDIX H

NUMERICAL AND PREDICTION RECORD

This appendix has been taken out of the publication core; its content is preserved in the V24 rolling master record (§688). None of the numerical readings in the archive is a preregistered prediction (21.24). The numerical relations taken into the core in this version (c_0 capacity scaling, $\rho_P \approx 5.16 \times 10^{96}$ kg/m^3, $R_{c_0} \approx 4.5 \times 10^{-23}$ m and $R_s \approx 2.95$ km for one solar mass) are not predictions but the numerical unfolding of the author's ruling (Section 3).

APPENDIX I

MACHINE-READABLE ONTOLOGY SKELETON

This appendix is not a physical postulate; it is **a non-normative, machine-readable mirror** layer proposed to reduce semantic drift. In case of conflict, the normative source is always the main prose core: **main prose core > machine-readable mirror**.

```
origin:
  U0:
    phase_object: false
    gate_endpoint: false
    co_genesis: [c0, Cm, cp]          # simultaneous: together, in the same constitution
    external_physical_clock: false
    pre_layer_form: contiguous_single_form_metric_gapless   # author's ruling

system:
  Ux:
    phase_object: false
    phase_constructor: false
    system_whole_of: [c0, Cm, cp]
    identical_to_X: false
    identical_to_U0: false
    full_semantics: open_debt

phases:
  c0:
    temporal_role: pre_emergent       # time has not stopped; it has not yet been established
    time_status: not_yet_established  # ⊥₀
    metric_admissible: false
    matter_role: metric_gapless_contiguous_single_form   # NOT a Planck-sized point
    black_hole_identity: true         # author's definition
    capacity_unit: planck_mass        # N = M / m_P
    density_upper_bound: planck_density   # ρ ≤ ρ_P ≈ 5.16e96 kg/m^3
    radius_scaling: "M^(1/3)"         # only in the constant-density realization (rho_* <= rho_P)
    density_vs_mass: non_increasing   # author's ruling; not derived from the upper bound
    geometric_quantities: Cm_readout_parameters   # V, R, rho: not the internal geometry of c₀
    BEC_is_c0: false                  # BEC = the environment in the matter phase closest to c₀
  Cm:
    temporal_role: physical_time
    metric_admissible: true
    matter_role: differentiated
    direct_measurement: true
    fundamental_space: euclidean_3d_flat
    kinematic_membership_band: "0 < v < c"
    liminal_shared_boundary_with_cp: "v = c"   # boundary ≠ membership
  cp:
    temporal_role: atemporal_record
    time_status: dissolved            # ⊥₊ ; dt_cp = 0 pedagogical only
    metric_admissible: false
    matter_role: Cm_support_dissolved
    ontological_identity: [DM, DE, Vacuum]     # c⁺ ≡ DM ≡ DE ≡ Vacuum
    QFT_vacuum: Cm_computational_language_of_cp
    interatomic_gaps_are_cp_readout: true      # author's ruling
    c_beyond_Cm_regime: true
    matter_structure_outside_0_v_c: not_preserved
    physical_time_admissible: false
    Cm_time_support: dissolved
    temporal_record: sealed
```

```
    dark_matter_readout: clustered_cp
    dark_energy_readout: expansion_associated_cp   # author: "expansion-sustaining c⁺"; the
expansion is the appearance read in Cₘ, it attributes no internal time to c⁺
    laboratory_readout: vacuum
    identity_implies_equal_readout_densities: false
    intrinsic_Cm_speed: inadmissible
    signal_channel: false             # teleportation: c⁺ source of correlation + classical channel

record_channel:
  direction: Cm_to_cp
  one_way: true
  seal_fixed: true

force_of_attraction:
  status: core_postulate
  ontology: phase_independent_constraint_coherence
  projections: [gravitation, strong, weak, electromagnetism]
  gravitation_is: Cm_metric_projection
  term_lock: "Force of Attraction != Gravitation"
  repulsion_and_charge: deferred

meta_coordination:
  X: MetaCrossPermission        # general, definite; not physical transport; TransportPermission is
separate
  X_scalar: false
  readings: "xi_k = pi_k(X)"
  c0_cp_specific_relation: formal_candidate   # §13.6

global_nodes:
  U0:    {role: pole, phase_object: false}
  Ux:    {role: global_node, pole: false, phase_object: false}
  Uplus: {role: pole, phase_object: false, name: "Absolute Dissolution == Absolute Rupture"}

absence:
  c0: undefined0
  cp: dissolvedPlus
  distinct: true                # ⊥₀ ≠ ⊥₊ ≠ 0
  epistemic: MissingData        # not an ontological absence

gate_lock:
  Cm_only_not_transportable: [time, space3, metric, intrinsic_speed, c_bound, rest_mass]
  readout_of_cp_sourced_effects: allowed

representation_principle:      # third principle
  valid_within_reproduced_measurement: true
  ontological_priority_between_representations: none

range:
  point_as_degenerate_band: true

topology:
  gates:
    - [c0, Cm]
    - [Cm, cp]
    - [c0, cp]
  bidirectional: true
  stamped_edges: [e0m, emp]
  stampless_edges: [e0p]

cycle_seed:
  double_limit_core: true
  ordinary_phase_transition_to_U0: false
  full_mechanism_reserved_for: V24

counter: "0/10"
```

Example backward-compatibility tests of the ontology:

```
assert U0 not in Phase
assert Ux not in Phase
assert Ux != U0
assert Ux != X
assert gateRelated(c0,cp)
assert physicalTime(c0) == false
assert physicalTime(Cm) == true
assert physicalTime(cp) == false
assert undefined0 != dissolvedPlus
assert undefined0 != 0 and dissolvedPlus != 0
assert metricAllowed(c0) == false
assert metricAllowed(Cm) == true
assert metricAllowed(cp) == false
assert identity(cp) == {DM, DE, Vacuum}
assert BEC != c0
assert membershipBand(Cm) == "0 < v < c"
assert boundary(Cm, cp) == "v = c" and boundary != membership
assert recordChannel == (Cm -> cp) and oneWay
assert MetaCrossPermission(X) == true
assert MetaCrossPermission != TransportPermission
assert Range(P,P) is valid
assert NoStamp != NoTransition
```

These tests are not physical evidence; they are **a safeguard of ontological compatibility**.

APPENDIX I.1 Reflecting the typed ontology fields in the skeleton

The following YAML skeleton is a proposal for extending the machine-readable counterpart of the candidate family of types in APPENDIX F; it is not normative:

```
value_types:
  CmOnlyValue: true        # time, metric, rest mass
  MetricAdmissible: "phi == cm"
bridge:
  non_unique: true         # BridgeSpec family
  selection: "physical + observation"
gate:
  related_implies_transport: false
global:
  Ux_not_pole: true
```

APPENDIX J

CANONICAL RENDER (THE CORE VISUAL STRUCTURE)

This appendix carries the canonical figure of the framework and its source code. The figure is not an illustration but **the core structure itself**: details may change in later versions; the structure does not.

J.1 How to read the figure

Element	Ontological meaning
Left red circle — U_0 (Absolute Core)	The global saturation pole; the pre-layer in which all the structures of the Dynamic Universe exist in a metric-gapless single form
Left curly bracket	The boundary between the global level and the phase system
Black frame — U_x at the top, *Dynamic Universe* at the bottom	The global structure in which the three phases are realized together
Three thick black dots	The phase nodes: c_0, C_m, c^+
Three bidirectional arrows — Δ_{0m}, Δ_{0+}, Δ_{+m}	The complete bidirectional triangle: three gates; Δ_{0m} and Δ_{+m} carry stamps, Δ_{0+} is stampless
Right curly bracket	The same boundary, on the side of dissolution
Right red circle — U_+ (Absolute Dissolution ≡ Absolute Rupture)	The global dissolution pole
Thick outer arrows	**Relation with the whole** (birth / limit) — not phase gates

J.2 Invariant core elements

1. **Two levels:** the outer poles (U_0, U_+) and the inner phase system (U_x)
2. **Symmetry:** U_0 on the left, U_+ on the right, with equal visual weight
3. **The complete bidirectional triangle** and its three labelled edges
4. **Thick black dots at the vertices** — they separate the phase node from the boundary band
5. **The outer arrows end at the brackets** — they touch no phase point
6. **The frame is labelled U_x / Dynamic Universe**

J.3 Details that may change

Label texts and subtitles · colour tones and font sizes · fine adjustment of coordinates · auxiliary layers (representation of the phase regime–threshold boundary, a speed band under C_m, the wavelength factor, the black-hole threshold factor).

J.4 Semantic safeguards

At the global level, the symbol $\leftrightarrow$ does not claim an INVERTIBLE OPERATOR.

Reading from left to right gives the impression of a process; **the cycle is not a flow of time** (Section 2.8). In the figure, the phase nodes and the global poles **do not belong to the same graphical class**: the nodes are black dots, the poles are red circles — this distinction must be preserved.

J.5 Canonical LaTeX / TikZ source code

In the Turkish source, the code is preserved exactly in its minor12 form, as required by the double-sealing protocol (23.10a). In this English version, the drawing commands, coordinates and styles are identical to that source; only the comments and the node label strings have been translated into English, so that the rendered figure carries English labels.

```
\documentclass[border=15pt]{standalone}

\usepackage{tikz}
\usepackage{amsmath}

\usetikzlibrary{
    decorations.pathreplacing,
    calligraphy
}

\begin{document}

\begin{tikzpicture}[>=stealth, thick]

    % ================================================================
    % LEFT SIDE: U_0 — Absolute Core
    % ================================================================
    \node[
        align=center,
        circle,
        draw=red!70,
        fill=red!5,
        inner sep=5pt,
        very thick
    ] (u0) at (-7, 2.25) {
        \Large $U_0$ \\
        \footnotesize (Absolute Core)
    };


    % ================================================================
    % U_x — DYNAMIC UNIVERSE FRAME
    % ================================================================
    \draw[very thick]
        (-4.15, -0.75)
        rectangle
        (6.15, 5.35);

    % U_x label — at the middle of the top edge
    \node[
        fill=white,
        inner sep=4pt
    ] at (1.00, 5.35) {
        \Large $U_x$
    };

    % Dynamic Universe label — at the middle of the bottom edge
    \node[
        fill=white,
```

```
        inner sep=4pt
    ] at (1.00, -0.75) {
        \large Dynamic Universe
    };


    % ============================================================
    % EVERTOPHY PHASE HIERARCHY
    % Dots and labels are defined SEPARATELY
    % so that the thick black dots at the vertices remain visible
    % ============================================================

    % Triangle vertex coordinates
    \coordinate (pc0)    at (1, 4.5);
    \coordinate (pcm)    at (-3, 0);
    \coordinate (pcplus) at (5, 0);

    % Thick black dots at the vertices
    \filldraw[black] (pc0)    circle (4.2pt);
    \filldraw[black] (pcm)    circle (4.2pt);
    \filldraw[black] (pcplus) circle (4.2pt);

    % Labels (placed slightly apart from the dots)
    \node[align=center, above=10pt] at (pc0) {
        \Large $c_0$ \\
        \footnotesize (Potential)
    };

    \node[align=center, below=10pt] at (pcm) {
        \Large $C_m$ \\
        \footnotesize (Matter/Time)
    };

    \node[align=center, below=10pt] at (pcplus) {
        \Large $c^+$ \\
        \footnotesize (Upper Phase / Coordination)
    };


    % ============================================================
    % TRIANGLE CONNECTIONS
    % All three gates are bidirectional
    % ============================================================

    % C_m <-> c_0
    \draw[<->]
        (pcm)
        --
        node[midway, above left=2pt] {$\Delta_{0m}$}
        (pc0);

    % c^+ <-> c_0
    \draw[<->]
        (pcplus)
        --
        node[midway, above right=2pt] {$\Delta_{0+}$}
        (pc0);

    % C_m <-> c^+
    \draw[<->]
        (pcm)
        --
        node[midway, below=4pt] {$\Delta_{+m}$}
        (pcplus);
```

```
% ============================================================
% RIGHT SIDE: U_+ — Absolute Dissolution
% ============================================================
\node[
    align=center,
    circle,
    draw=red!70,
    fill=red!5,
    inner sep=5pt,
    very thick
] (uplus) at (10, 2.25) {
    \Large $U_+$ \\
    \footnotesize (Absolute Dissolution)
};


% ============================================================
% ENCLOSING CURLY BRACKETS
% ============================================================

% Left bracket
\draw[
    decorate,
    decoration={
        calligraphic brace,
        amplitude=15pt
    },
    ultra thick,
    gray
]
    (-4.5, -0.8)
    --
    (-4.5, 5.4);

% Right bracket
\draw[
    decorate,
    decoration={
        calligraphic brace,
        amplitude=15pt,
        mirror
    },
    ultra thick,
    gray
]
    (6.5, -0.8)
    --
    (6.5, 5.4);


% ============================================================
% U_0 <-> U_x / PHASE SYSTEM
% ============================================================
\draw[<->, ultra thick]
    (u0)
    --
    (-4.5, 2.25);


% ============================================================
% U_x / PHASE SYSTEM <-> U_+
% ============================================================
\draw[<->, ultra thick]
    (6.5, 2.25)
```

```
        --
        (uplus);

\end{tikzpicture}

\end{document}
```

APPENDIX K

OPEN DEBTS AND PENDING DECISIONS

K.1 Frozen open debts

These are not history; they are the real present limits of the ontology:

- **The general physical selector** — the principle that makes unique the bridge from X to a physical quantity (J_X, $\mathcal{E}_\phi$).
- **The formal definition of the projection operation of the Force of Attraction** (Π) and **the equation of balance of the three phases**.
- **The projection form of repulsion and of charge** (electromagnetism); the projection account of the strong and weak forces.
- The quantitative mechanism **from c⁺ to dark matter and dark energy**; under the identity **c⁺ ≡ vacuum**, the quantitative bridge between vacuum energy and the observed dark-energy density (the cosmological constant problem).
- **The quantitative map between entropy and sealing.**
- The **membership reading** $\mathcal{R}_v$ of v and the **mathematical representation** of c⁺ being beyond c; the formal type of the liminal shared boundary $v = c$.
- The exact type and physical projection of X · the formal definition of the saturation reading $\xi_{\text{sat}} = \pi_{\text{sat}}(X)$ · the physical readout law · the reconstruction of the metric from the ontology.
- Whether the number of phases is fundamental or derived · the structural type of U_x and the laws of the global cycle.
- The Standard Model, Yukawa and QCD bridges · a preregistered empirical prediction.
- **Recovery** of the observational results of general relativity from the effective 3+1 metric.
- Recovery, in the quantum reading, of Born probabilities, interference, Bell correlations, contextuality and no-signalling.
- A general guarantee of **algorithmic convergence** for X.
- Uniqueness of record identity in the concatenation of raw archives; aligning the formal stamp direction (κ_{+m}) with the record direction fixed as $C_m \to c^+$ by the author's ruling (7.1, 13.3).
- The quantitative and observational map of the identity black hole ≡ c_0: the relation between event horizon and phase boundary, the threshold and transition law of the mass channel.
- **The internal profile of the c_0 single structure and its quantitative relation with the event horizon:** whether the density is constant at the Planck limit or has a profile; the observational consequences of the ratio $R_{c_0}/R_s \propto M^{-2/3}$.
- The quantitative form of the dependence of c_0 capacity on mass and area; the canonical language of the separation between entropy (with area) and capacity (with mass) (3.2).
- The quantitative form of the rule of departure from c_0 (speed and / or density), and the distribution of the capacity that decreases in a merger (3.2).
- Expressing with a quantitative measure of closeness the fact that the BEC is "the environment in the matter phase closest to the c_0 environment".

- An upper bound from entropy production on the subatomic cycle rate under the direct $c_0 \rightleftarrows c^+$ edge lock — model (13.6).
- The c_0 readout map $\mathcal{O}_{c_0}^{C_m}$ (the effective C_m volume, radius and density parameters of the single structure) and the derivation of the constant density ρ_* (3.2).
- The type and measure of the phase-boundary axis q_∂; its relation to the kinematic membership reading β (18.0).
- The sector-specific form of Π ($\Pi_a : \mathcal{A} \to \mathcal{L}_a$, a sector-specific category of effective action or equation) and the recovery of gauge invariance, spin / chirality and fermion mass.
- The families of general-relativistic solutions covered by the effective-geometry map $g_{\mu\nu}^{\text{eff}}[E^3, X, \Delta]$ (including families that do not admit a flat spatial slicing; 9.2a).
- The physical selector, for each context, of the c^+ readout map $\text{Okuma}_{C_m}(c^+; \mathcal{C})$ (11.1a).

Partly established: full range arithmetic · inverse problems with dependent variables · the source derivation of some model families · a full Morse range certificate.

OPEN $\neq$ FAILED

K.2 Awaiting the author's decision

Closed decisions (earlier versions): the base space of C_m is flat three-dimensional Euclidean space, and time emerges (9.2a); the publication package consists of the Core Ontology, the latest version of V24 and the final compilation of the marathon; the black hole and the c_0 phase are ontologically identical (3.2) · c_0 is not absolute zero, and temperature is undefined in c_0 (3.2) · time exists only in C_m and is unidirectional; the record channel is in the $C_m \to c^+$ direction (7.1) · a black hole is neither an annihilation nor an infinite singularity (3.2) · the phases are not derived from C_m (2.4) · the model rule for the direct $c_0 \rightleftarrows c^+$ edge (13.6).

Decisions closed in this version (author approvals of 2026-10-14):

- The kinematic membership band of C_m is $0 < v < c$; $v = c$ is the liminal shared boundary of C_m and c^+ (boundary ≠ membership).
- **c^+ ≡ dark matter ≡ dark energy ≡ vacuum**; the vacuum of quantum field theory is the C_m computational language of this identity; the statement "c^+ ≠ vacuum" has been removed.
- Even the space between the particles that make up the atom is c^+.
- Time in c^+ is dissolved: $\perp_+$ is the ontological state, $dt_{c^+} = 0$ only a pedagogical shorthand; $\perp_0 \neq \perp_+ \neq 0$.
- The saturation of c_0 is written not through X itself but through its reading $\xi_{\text{sat}} = \pi_{\text{sat}}(X) \to \xi_{\text{sat}}^{\max}$.
- **The reading of a "gapless core of Planck density" has been closed:** matter in c_0 is **in the form of a contiguous, finite single structure**, to a degree that converges to the metric-gapless state at the Planck scale; this does not mean "the core is Planck-sized". Capacity is counted in Planck masses ($N_{c_0} = M/m_P$), density cannot exceed the Planck density ($\rho_{c_0} \leq \rho_P$), volume grows with mass ($V_{c_0} \geq N_{c_0}\ell_P^3$); exact proportionality of volume to mass, and $R_{c_0} \propto M^{1/3}$, hold in the constant-density realization ($\rho_{c_0} = \rho_*$). The smallest radius given for one solar mass is calculated by taking the density at its Planck value ($\rho_* = \rho_P$). That density does not increase with mass is not derived from the upper bound but is a separate ruling; V, R, ρ are

effective C_m readout parameters (3.2). It is not additionally claimed that the density is locked exactly to the Planck value; there is only the upper bound (3.2, 25.28).

- Time in c_0 **has not stopped; it has not yet been established**; the summary language of "zero differential" has been dropped.
- When the whole U_x structure reaches the form of U_+, **Absolute Rupture and Absolute Dissolution express the same thing**.
- Retired criteria remain retired (for example, $\nabla \ln \chi_S \neq 0$ for dark matter).
- The sealing cost C_s is in the "candidate reading" mode.
- Readings of experiments (delayed-choice quantum eraser, teleportation, etc.) are in the "compatible reading" mode; teleportation requires a classical channel, and c^+ is the source of the correlation.
- The BEC is not c_0; it is the environment in the matter phase closest to the c_0 environment.
- The third principle: a mathematical representation that correctly reproduces a measurement is accepted unconditionally within the scope of that measurement; there is no ontological priority among representations.

Still pending:

- Whether the archive count is to be defined as the record count of the raw archive · acceptance of the monotonicity of phase memory as an architectural rule.
- The type of the relation between SYNTAX and U_x.
- The fate of the channel-asymmetry bridge · confirmation of the source text of some model families.
- Canonization of the Hawking temperature as the C_m readout temperature of the horizon (3.2).
- Harmonization of $\Pi_{+\to m}$ and of the historical ruling "necessarily through c_0" with the canon of the complete triangle (23.10b).

K.3 Classes of confidence

In this document, the confidence with which each statement is made is indicated in the sentence: **canon** (a ruling approved by the author) · **author's ruling** (a direct clarification of the author) · **formally proven** (within the scope of the encoded system) · **model** (correct within its own assumptions) · **bridge** (a candidate connection between the core and observation) · **candidate reading / compatible reading · open · retired**. The row "What result is obtained?" following each equation tells the reader directly the confidence class of that equation.

APPENDIX L

TRANSLATION KEY (ENGLISH VERSION ONLY)

This appendix exists only in the English version; the Turkish source has no counterpart. It adds no ontological content. Its task is to make the two versions **comparable line by line**: it fixes the canonical English terms in a single table, explains the Turkish labels that remain inside the formulas, and lists everything the English version adds editorially.

L.1 Locked terminology

The following equivalents are canonical. A later English minor may not replace them with synonyms without the author's ruling. Symbols (c_0, C_m, c^+, U_0, U_x, U_+, X, ξ_k, Δ_{0m}, Δ_{+m}, Δ_{0+}, $\perp_0$, $\perp_+$) are never translated.

Two rules of application:

- **The lock holds in every typographic form.** A locked term keeps the same English word when it is capitalized for emphasis inside a boxed ruling (for example INTERVAL-VALUED, UNIDIRECTIONAL).
- **Range is a name; interval-valued is a description.** *Range* is the name of the formalism and of the type (Range Formalism, Aralık, $[P, P]$ as a valid range). *Interval-valued* describes a quantity or a syntax whose value is a range. The two are not interchangeable.

Turkish (source)	English (canonical)	Note
Çekim Kuvveti	**Force of Attraction**	Never "Attraction Force"; never "gravity", "gravitation" or "gravitational force" (1.2)
kütleçekim	gravitation	Only the metric projection of the Force of Attraction in C_m
Postüla-0	Postulate 0	
c_0 (Potansiyel / Kara Delik Fazı)	c_0 (Potential / Black-Hole Phase)	
C_m (Madde Fazı)	C_m (Matter Phase)	
c^+ (Karanlık Madde / Karanlık Enerji / Vakum Fazı — Çözünmüş Faz)	c^+ (Dark Matter / Dark Energy / Vacuum Phase — Dissolved Phase)	
Mutlak Çekirdek (U_0)	Absolute Core	
Dinamik Evren (U_x)	Dynamic Universe	
Mutlak Çözünme ≡ Mutlak Yırtılma (U_+)	Absolute Dissolution ≡ Absolute Rupture	
Big Yırtılma	Big Rupture	Distinct from the *Big Rip* of standard cosmology (2.x, 21.x)
üst çözücü / çözücü	meta-resolver / resolver	

Turkish (source)	English (canonical)	Note
madde desteği	matter support	
zaman-öncesi	pre-temporal	The Turkish gloss "(pre-emergent)" is kept where the source gives it
zaman-dışı	atemporal	Single form for c^+
zamansız	timeless	A different Turkish word; kept distinct
çözünmüş	dissolved	
liminal sınır / liminal ortak sınır	liminal boundary / liminal shared boundary	
metrik-boşluksuz tek yapı	metric-gapless single structure	Not a "Planck-sized core"
damga / damgasız	stamp / stampless	
mühürleme / mühür	sealing / seal	
kayıt kanalı	record channel	
tek yönlü	unidirectional	
okuma (teknik katman)	readout	Readout layer, readout map, readout law
okuma (genel yorum)	reading	Candidate reading, compatible reading, the reading $\xi_k = \pi_k(X)$
yazar hükmü	author's ruling	Also a confidence class (K.3)
aday okuma / uyumlu okuma	candidate reading / compatible reading	
açık borç	open debt	
aralık değerli	interval-valued	The formalism and the type keep the name **Range** (Range Formalism, Aralık → Range)
kanon / kanonik	canon / canonical	
Sessizlik İlkesi	Principle of Silence	
Değnek Ambarı	Değnek Ambarı ("baton depot")	Proper name of the method; kept

L.2 Mathematics: identical to the Turkish source

Every display equation, every LaTeX block and every inline formula is carried over **as written in the Turkish source**; only the words inside `\text{…}` (and `\textbf{…}`, `\texttt{…}`) are translated. Turkish labels in subscripts (`\rm …`) and in operator names (`\mathrm{…}`) are therefore kept, so that the two versions can be compared formula by formula. Where a boxed ruling is a sentence written in `\text{…}`, English word order may place the symbols differently from Turkish; the symbols themselves are unchanged.

Subscript and superscript labels (`\rm …`)

Label in the formulas	English meaning
aday	candidate

Label in the formulas	English meaning
alan	domain
arşiv	archive
bağ	coupling
çekirdek	core
çevre	environment
çöküş	collapse
denge	balance
depo	storage
dir	resistance
dış	exterior
durum	state
entropi	entropy
eski	old (historical inventory)
etkin	effective
evren	universe
faz	phase
fonksiyonel	functional
geçerli	valid
görünür	visible / rendered
gösterge	indicator
göz, gözlenen	observed
gözlenebilir	observable
ham	raw
hiper	hyper(parameter)
iç	interior
inanç	credible (Bayesian credible region)
iz	trace
kabuk	shell
kesin	exact (guaranteed coverage)
koor	coordinate
koz	cosmological
kör	blind
köprü	bridge
mek	mechanical
muhasebe	accounting

Label in the formulas	English meaning
mühürlü	sealed
okuma	readout
ontoloji	ontology
önce / sonra	before / after
öz	proper (proper time)
serbest	free
seyrelme	dilution
sis	system
sistem bütünü	the system as a whole
skaler	scalar
temel	base (base space)
toplanma	accretion
türetim	derivation
üretim	production
üyelik	membership
yapı	structure
yerel	local
yüzey	surface

Operator and type names (`\mathrm{…}`)

Name in the formulas	English meaning
Aralık	Range
Bağlam	Context
Çözüm	Resolution
Çözülmüş	Resolved
damga	stamp
Durum / durum	State / state
Faz	Phase
kenar	edge
madde	matter
Okuma	Readout
ÖzellikAilesi	PropertyFamily
Vak	Vacuum

L.3 Locked sentences

Boxed rulings and prohibitions are carried with the same force as in the source: a Turkish negative present ("...yazılmaz", "...taşınmaz") is rendered as a binding English prohibition ("is not written", "is not carried"), and capitalized emphasis in the source remains capitalized. The number of boxed expressions is the same in both versions.

L.4 Editorial additions of the English version

None of the following changes an ontological ruling:

1. The note on terminology under the title (Force of Attraction ≠ gravity).
2. The note in J.5: the TikZ drawing commands, coordinates and styles are identical to the source; only the comments and node labels are in English.
3. This appendix.
4. The provenance sentence in the Closing.
5. Word order inside formulas: in 38 display equations (31 of them boxed rulings) and in their 38 LaTeX blocks, the `\text{…}` segments stand in English word order; the symbols outside `\text{…}` are identical to the Turkish source. Every other display equation and LaTeX block is identical to the source except for the words inside `\text{…}`.
6. Typography: in three inline formulas, percentages are written in the English order (5%, 27%, 68%) instead of the Turkish order.
7. The figure file name `Evertophy_Core_20260919_revize_gerekiyor_v2.png` is the identifier of the asset in the publication package and is kept as it is; renaming it is a packaging decision of the author, to be made in both versions together.

CLOSING

Evertophy is a framework which proposes that reality consists of **two ontological levels**: inside, the dynamic universe constituted by three phases; outside, the two limiting conditions of that universe. Between the phases, a complete bidirectional triangle; above them all, a single dynamic meta-resolver; and before them all, an unnumbered premise — that the Force of Attraction is the fundamental ontological postulate.

This document aimed to set out completely the **ontological skeleton** of the framework. It does not contain full bodies of proof; it summarizes the results and the provenance of formal proofs. What it chiefly offers is a conceptual order. In this version that order has been made one step more explicit: each equation has been presented to the reader together with its symbols and with the questions "what does it do, why does it do it, how does it do it, what result is expected, what result is obtained"; in this way what a formula **does not say** has become as visible as what it says.

Five things must be said plainly.

First: The framework is mathematically incomplete. The central chain from X to physical functions has not been written. This incompleteness has not been hidden; it is kept on record in the framework's own accounting. The full mathematical realization of X **has been deliberately left open**.

Second: The framework has no active claim of empirical evidence. The line once regarded as the strongest was closed **by internal audit**. This closure is itself the framework's most trustworthy behaviour: a claim was refuted not by an external referee but by its own protocol.

Third: The global level is the newest and least defined layer. The function sentence of U_+, the mathematical type of the global arrows and the link of the cycle are open. About the direct relation between the two poles, the framework deliberately **remains silent** — because passing judgement on something that has no representation would mean leaving the line of observation and experiment.

Fourth: The present value of the framework lies not in the numbers it produces but **in the order it establishes and the prohibitions it lays down**. A framework is valuable not according to how much it explains, but according to how clearly it **becomes falsifiable**.

Fifth: The formal results in this text are valid within the scope of the encoded system; the text as a whole has passed through cross-audit, but cross-audit is not proof. The audit showed that the skeleton is consistent at the level of types and algebra, weeded out more than thirty claims and located the central gap definitively. The ontological changes in this version — $c^+ \equiv$ vacuum, the c^+ reading of the space inside the atom, the metric-gapless single structure of c_0, the band $0 < v < c$ and the liminal boundary $v = c$ — are rulings not of the tools but of **the author**. Passing an audit does not mean being right; but knowing where one may be wrong is the first step on the way to what is right.

Evertophy is at present not a theory completed to this degree, but **an ontology and physics research programme that aims at a Theory of Everything**. The internal status of this version is **Stable Closure Candidate / Current Core Reference**: it is open to direct revision by the architect, and reserved layers such as the cycle mechanism of V24 have not yet been closed.

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This version was prepared with the method of multi-system cross-audit; by applying sets of positive corrections and sets of negative constraints together, it was brought into a single coherent core aligned with the author's rulings of 2026-10-14. The English version (Minor03) is a translation of Turkish Core minor16; it changes no ontological ruling. Its editorial additions are listed in APPENDIX L.4.

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