

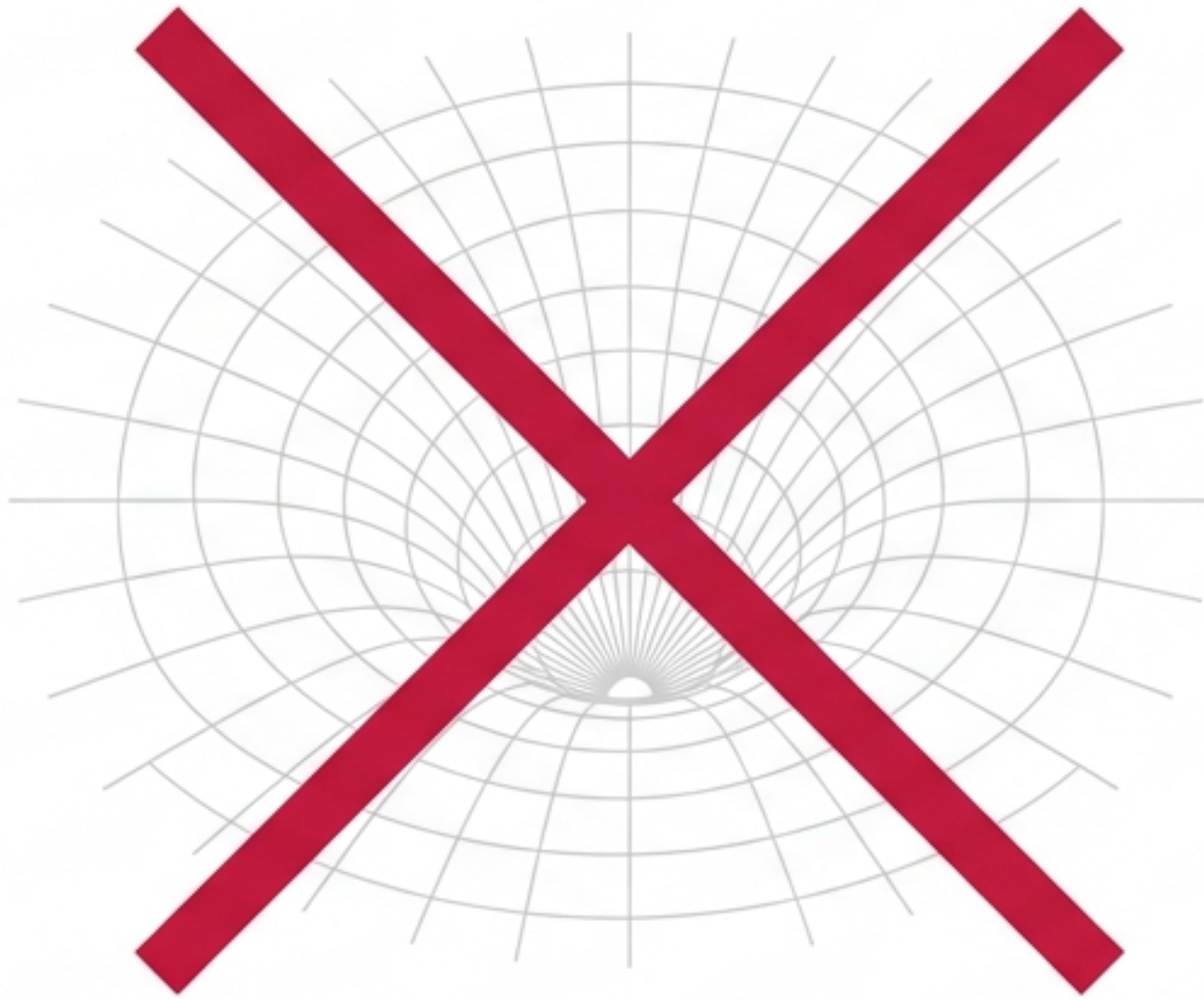
Black Holes Demystified

Vortical Compression Cores in a Physical Substrate

Vijay Shankar Sharma

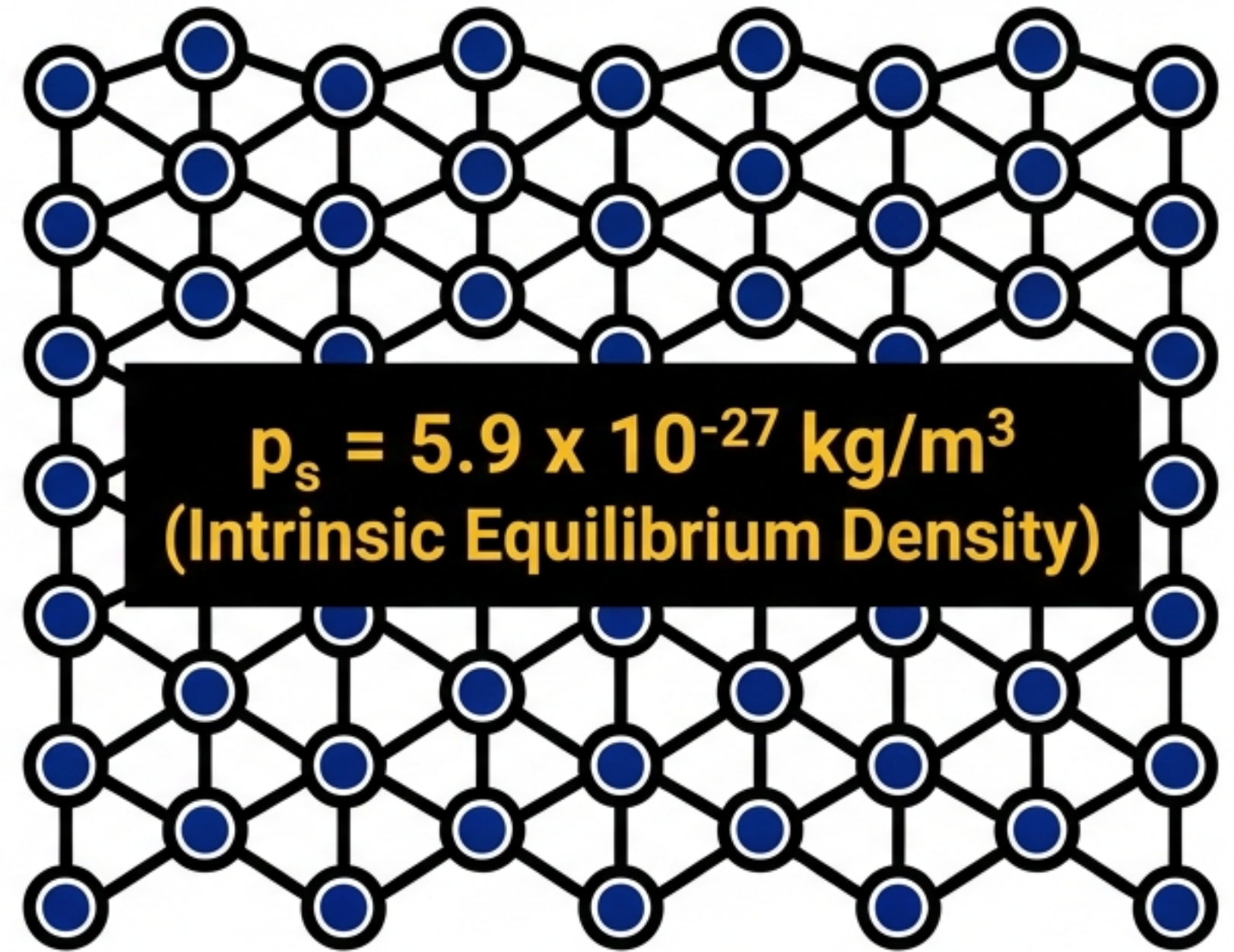
Sole, independent, and unaffiliated author of the theory.

Classical General Relativity: Medium-Free Geometry

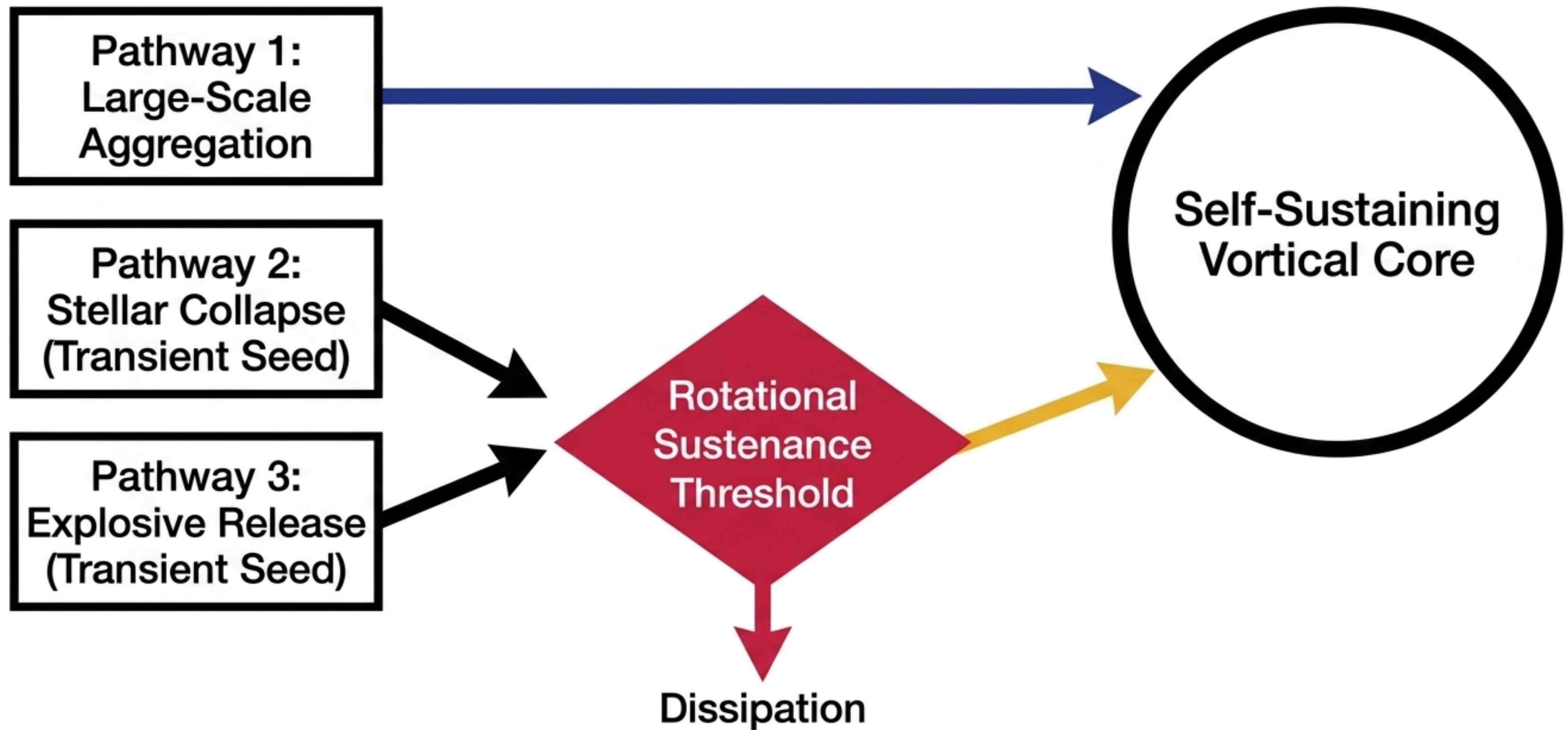


**Space is not a mathematical coordinate system.
It is a physical medium.**

The BFUT Framework: The Sparticle Substrate



**All matter, forces, and propagating
disturbances—including gravity—are organised
excitations of this continuous physical substrate.**



Formation does not guarantee survival. Pathways 2 and 3 produce transient seeds that require immediate external rotational entrainment to persist.

$$\tau_{\text{dissip}} = R_d/c \text{ (Seed Dissipation Timescale)}$$

10 M_{sun}
Seed Core



T=0



T = ~59 minutes



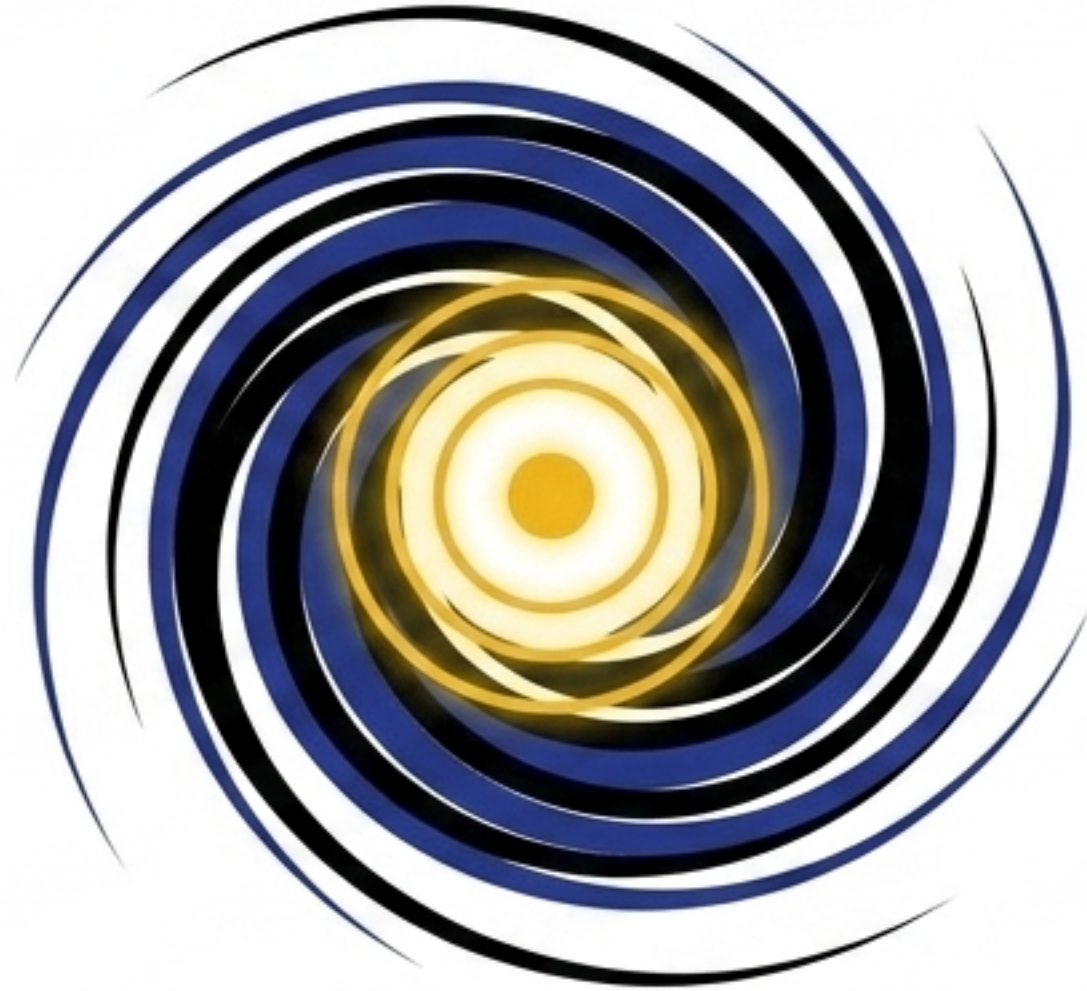
The Rotational Sustenance

Principle: No vortical compression core can persist without a continuous supply of surrounding rotating mass.

An isolated 10 M_{sun} seed core dissipates into the Sparticle substrate in approximately 59 minutes.

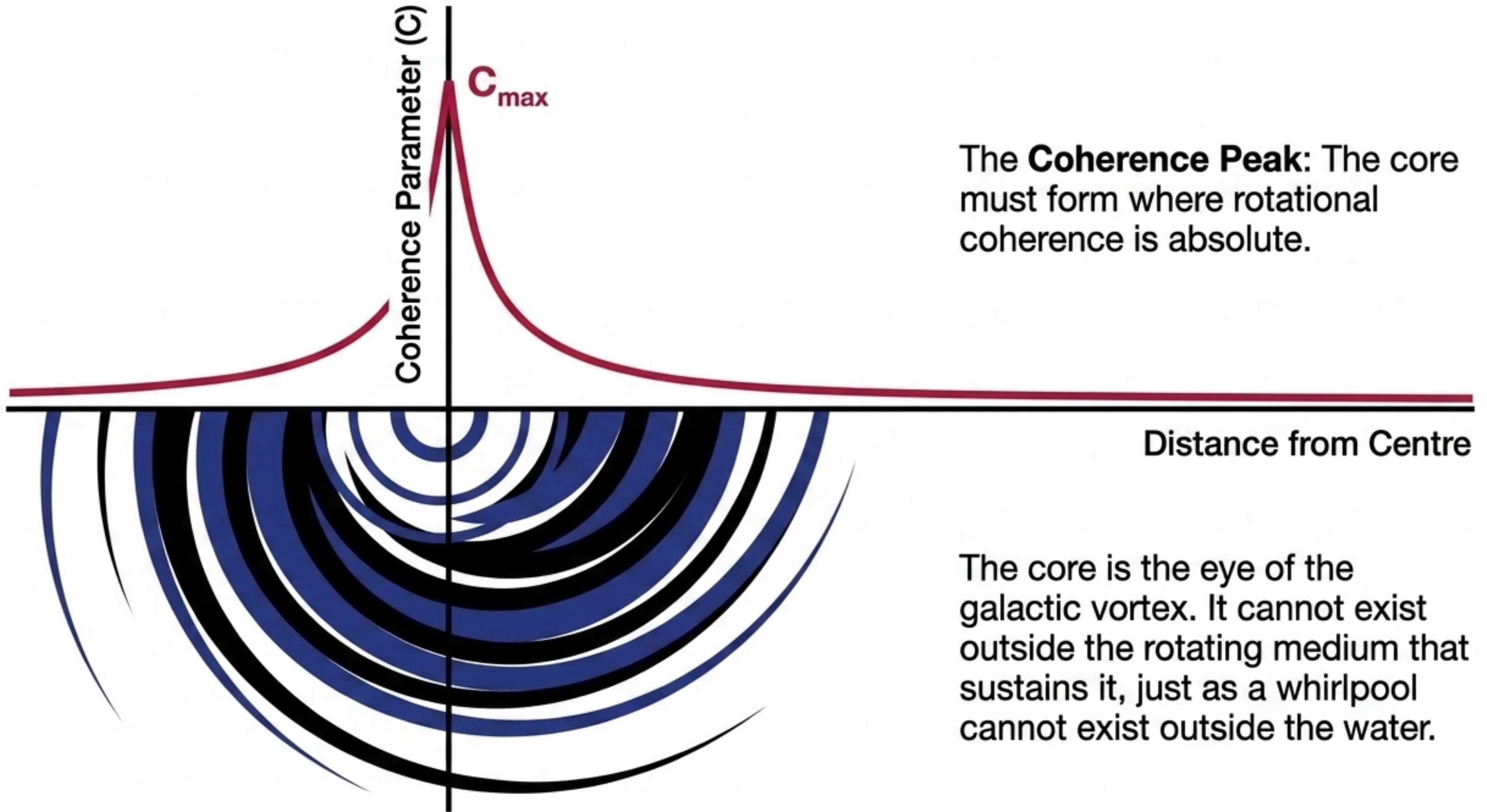
Without rotational entrainment, a core is not static—it actively relaxes outward.

The Universal Centrality Rule: In every settled-state galaxy ever observed, the supermassive core occupies the exact dynamical centre.



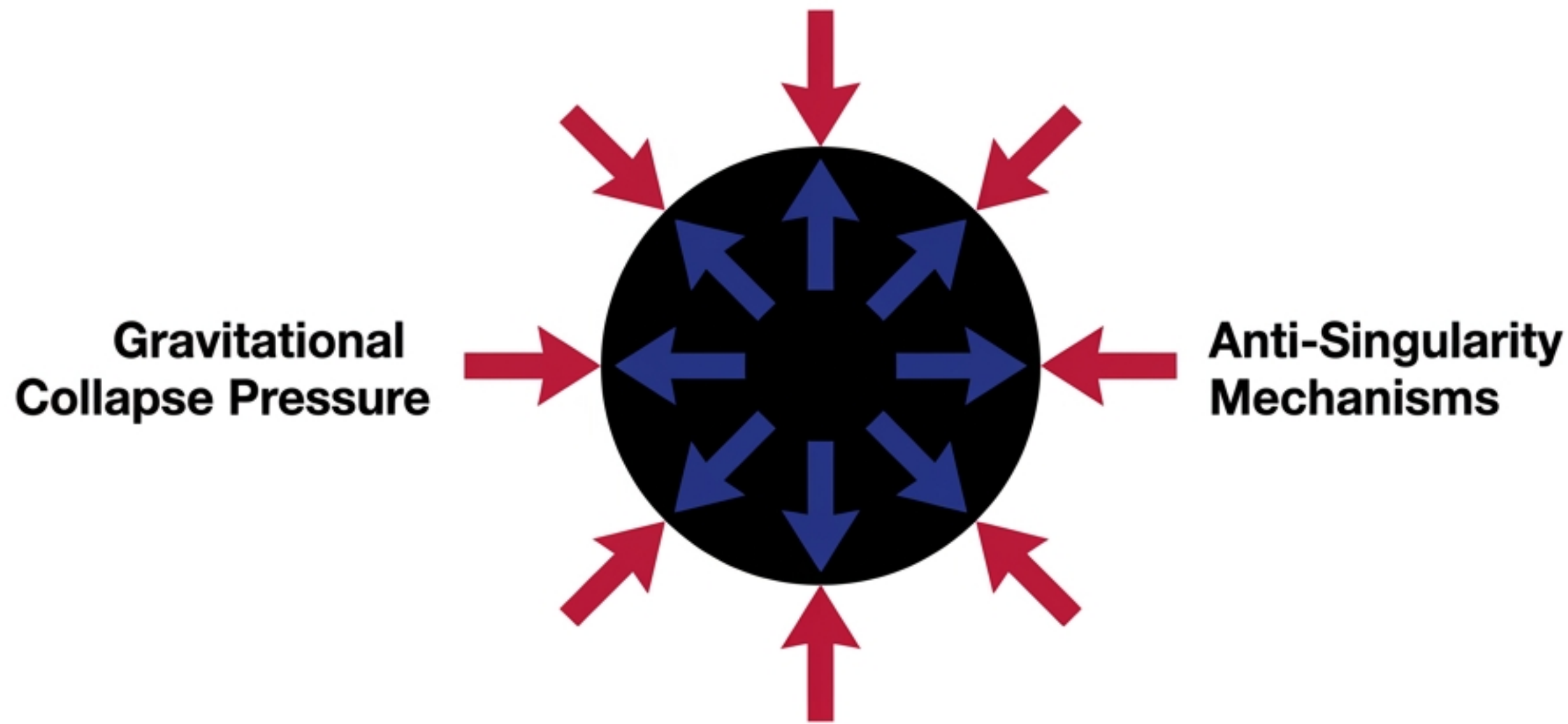
Zero Exceptions across billions of surveyed systems, spanning all morphologies and redshifts.

These cores do not randomly form and migrate to the centre. They are structural consequences of the rotating system itself.



The **Coherence Peak**: The core must form where rotational coherence is absolute.

The core is the eye of the galactic vortex. It cannot exist outside the rotating medium that sustains it, just as a whirlpool cannot exist outside the water.



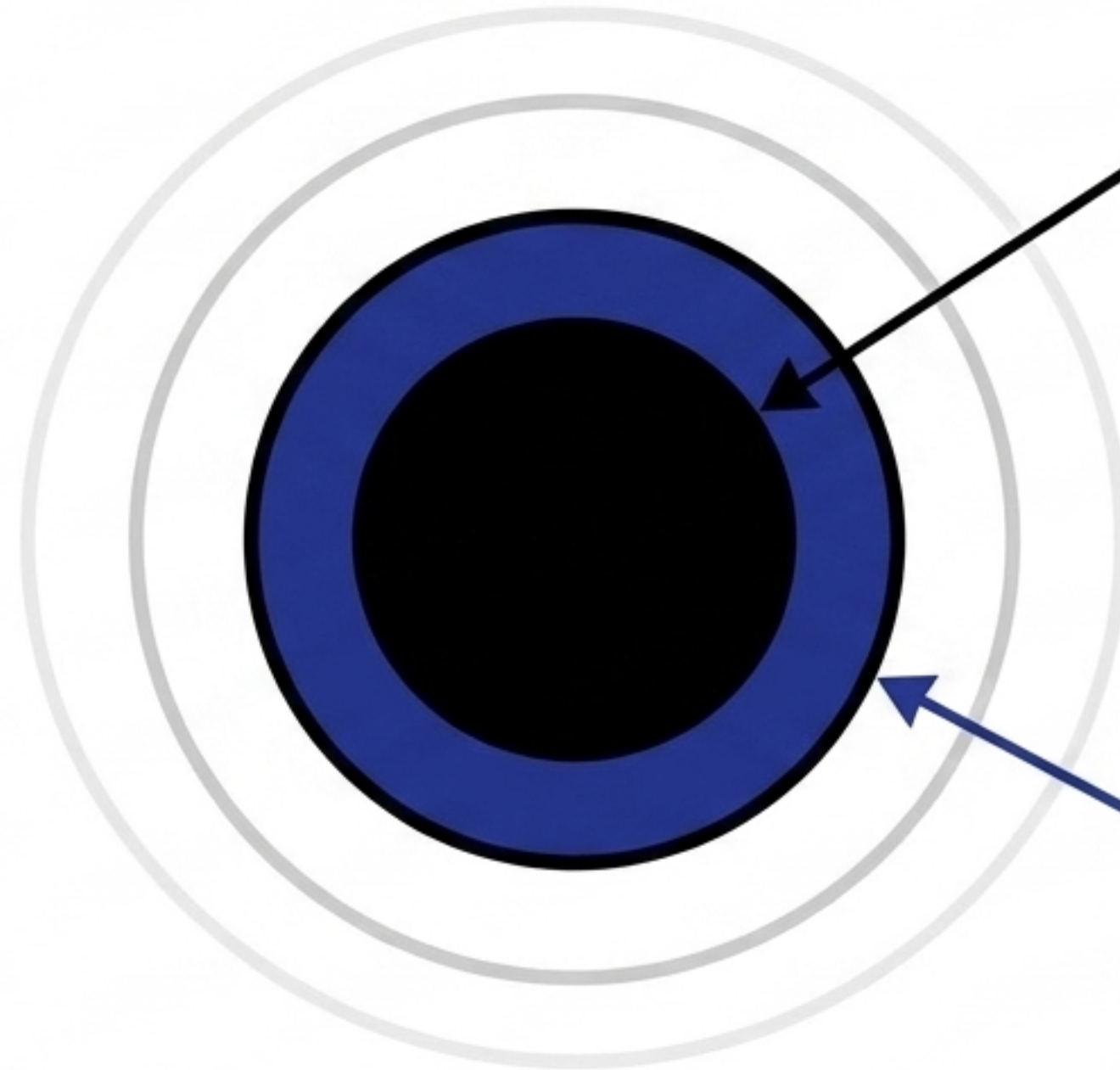
1. Substrate Restoring Pressure: Compression naturally breeds resistance.

2. Higher-Order Repulsion: Physical boundaries prevent point-collapse.

3. Rotational Entrainment: Outward flux of organised deformation.

Result: $p_{\text{max_finite}}$. The singularity is a mathematical artefact. Substrate physics mandates a finite maximum compression density.

The Four-Region Finite-Core Architecture: Inner Zones.

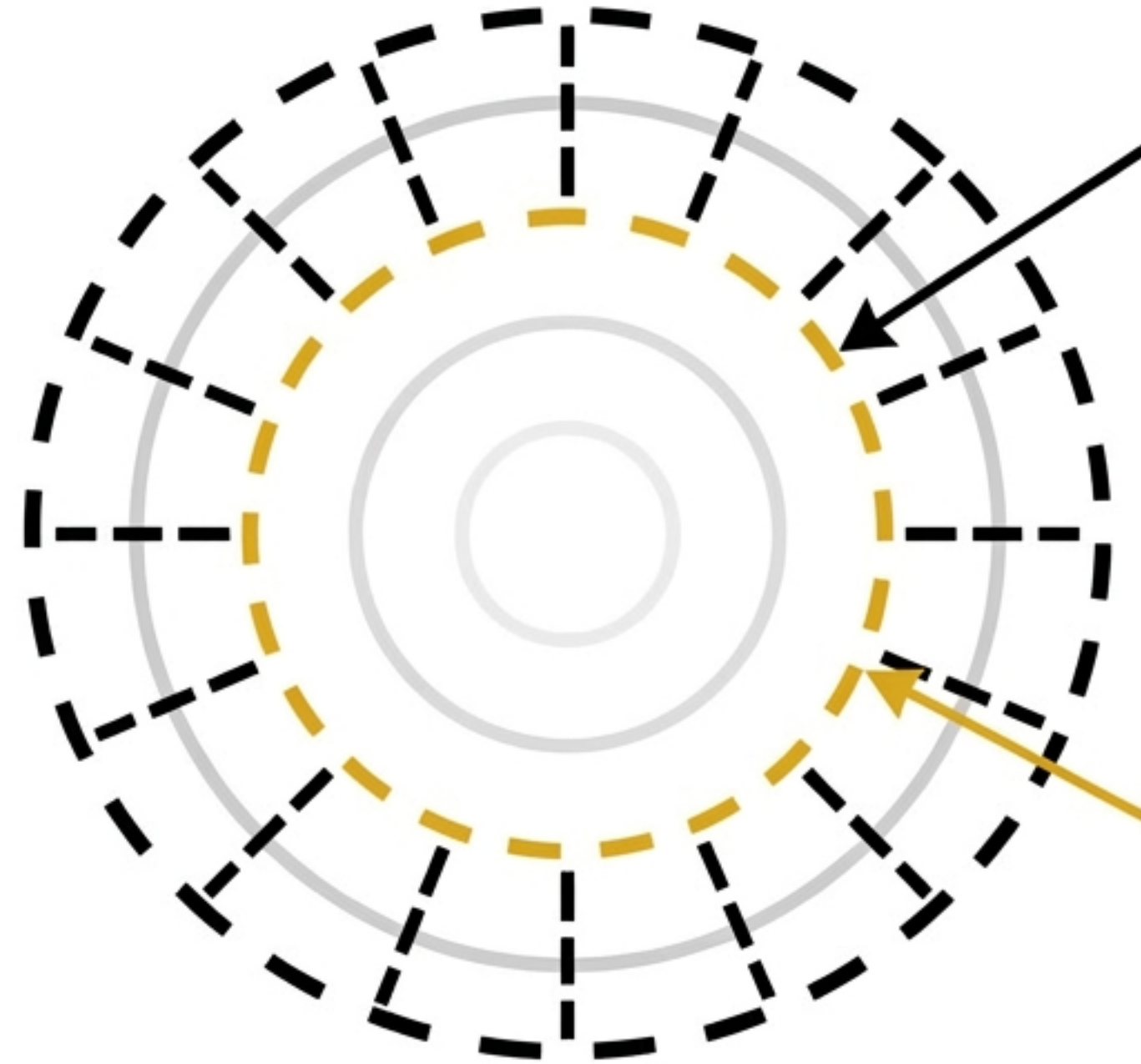


The Compressed Core:
 p_{max} - Inward collapse is exactly balanced by substrate restoring pressure.

The Redistribution Shell:
Handles outward entrainment flux. Continuously redistributes organised deformation.

The interior is not an empty void ending in a point. It is a physically active, dynamically maintained compression equilibrium.

The Four-Region Finite-Core Architecture: Outer Zones.

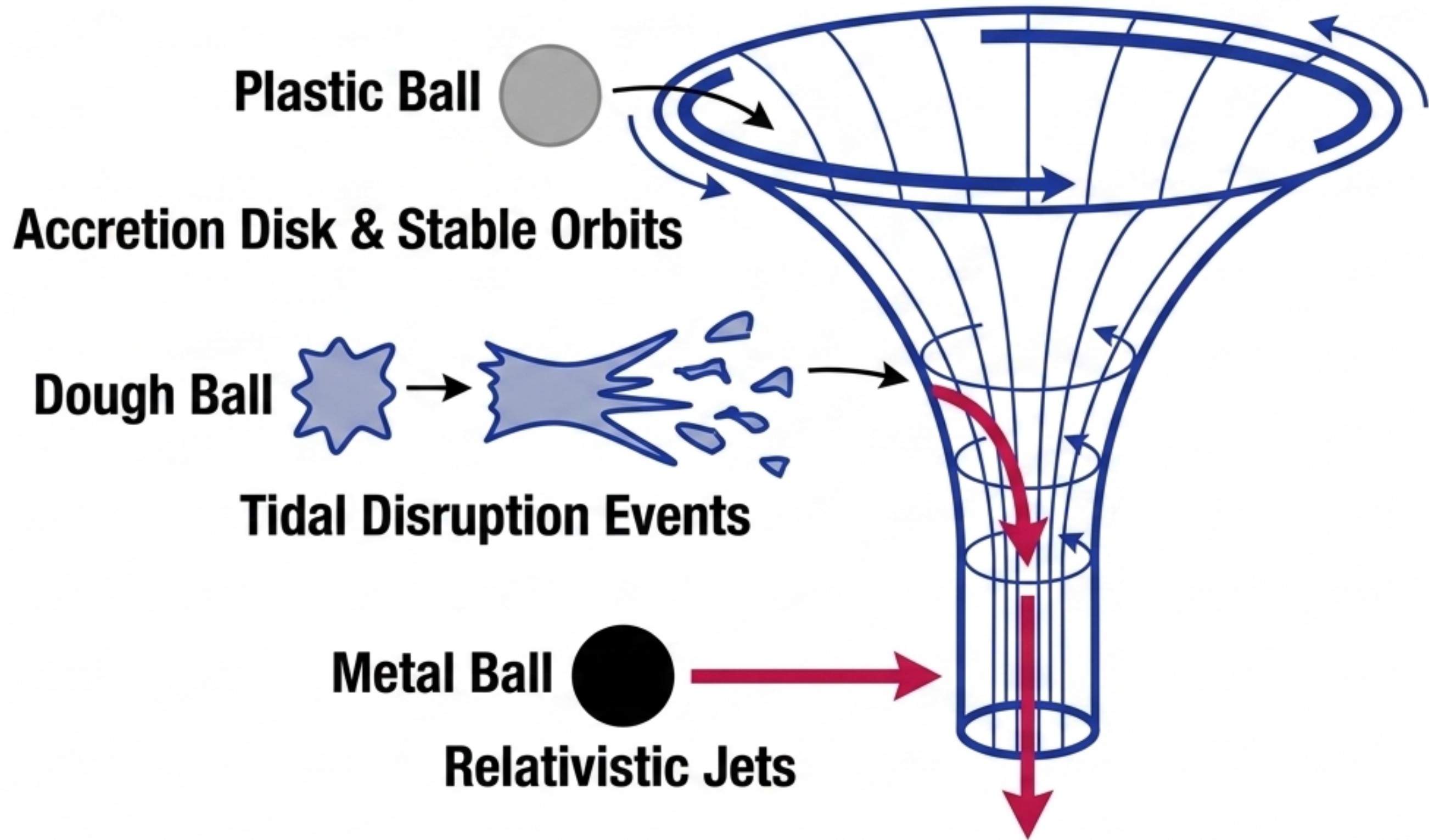


Outer Entrainment Region:
Retained rotational entrainment.
Generates the gravitational support
historically attributed to dark matter.

The Coherence Boundary:
Replaces the Event Horizon.
A local, dynamical transition layer.
Strictly two-way permeable.

No one-way causal surfaces exist. Signals can propagate outward, though heavily substrate-attenuated.

Matter Transformation Regimes: Matter entering the vortex is not destroyed; it is transformed by the substrate.



Mathematical consistency within a derivation does not guarantee physical reality.

Hawking radiation is mathematically coherent, but every foundational premise it requires describes a universe that does not physically exist. To prove the radiation does not exist, we must dismantle the premises using the Sparticle substrate.

The 5 Flawed Premises of Hawking's Derivation

- 1. Empty Geometric Vacuum**
- 2. True Killing Event Horizon**
- 3. Genuine Singularity**
- 4. Virtual Pairs Separated at a Killing Horizon**
- 5. Information Destruction via Thermal Emission**

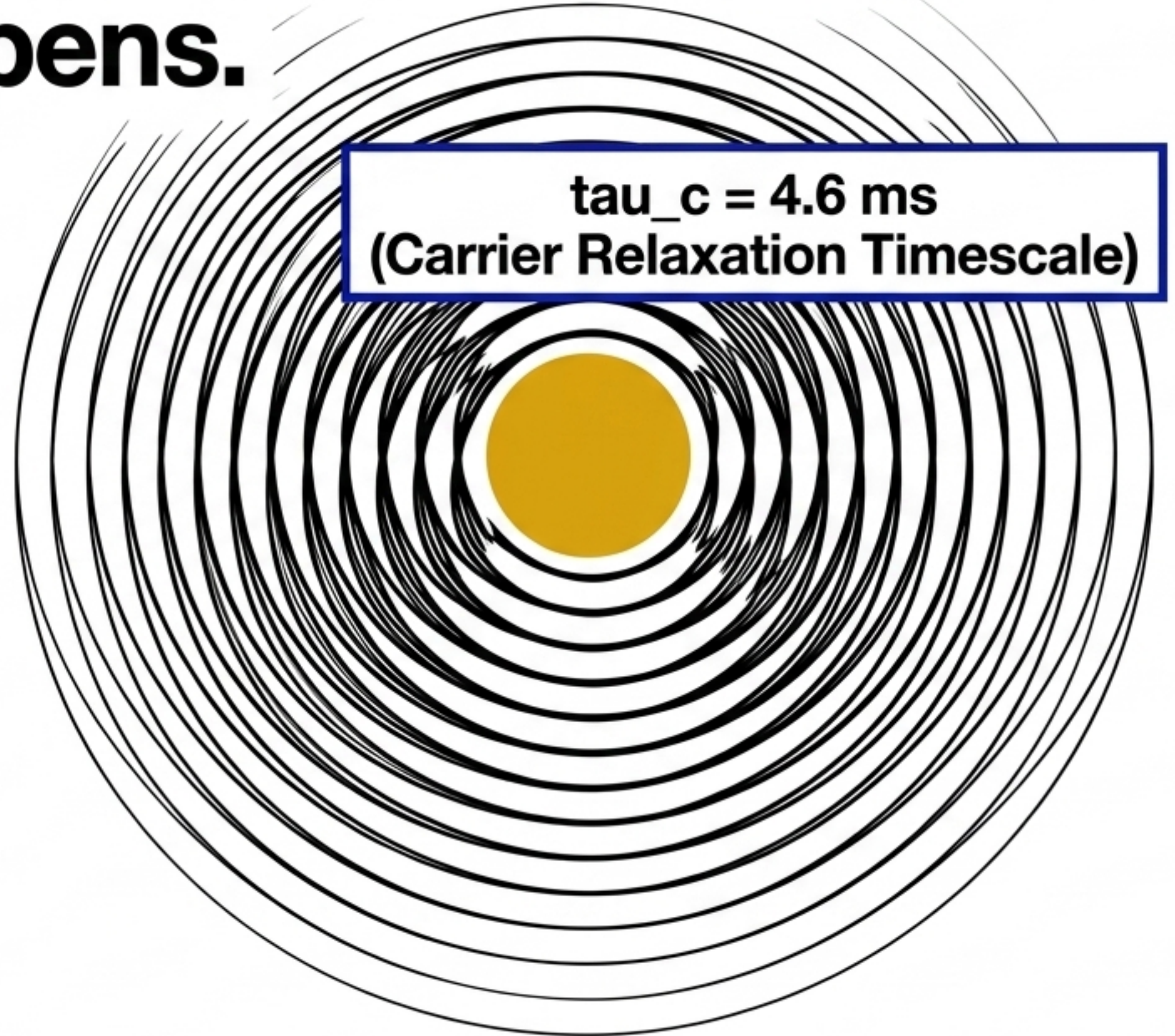
Standard Model Theoretical Requirement	BFUT Physical Reality
Premise I: Empty Geometric Vacuum. Space is an empty stage between excitations.	Substrate Density. The Sparticle vacuum has an intrinsic mass-energy density ($\Psi_{\text{vac}} \neq 0$). The Bogoliubov transformation has no physical realisation.
Premise II: True Killing Event Horizon. An absolute, one-way causal null surface.	Permeable Coherence Boundary. A local, dynamical boundary. Propagation efficiency (η) is small but strictly > 0.

Premise III: Genuine Singularity. Infinite density at $r=0$.	Finite Core. Substrate restoring mechanisms strictly bound maximum compression ($p_{\text{max_finite}}$).
Premise IV: Virtual Pairs Separated at a Killing Horizon.	Screened Substrate Modes. No Killing horizon exists; kinematic basis for pair separation is entirely absent.
Premise V: Information Destruction via Thermal Emission.	Information Preservation. The interior is physically active and continuously encodes infalling matter into substrate deformation patterns.

Carrier Relaxation vs. Evaporation: What Actually Happens.

The coherence boundary does not leak random thermal radiation. It emits structured, information-carrying substrate disturbances as the compression state evolves.

Information is never lost. It is encoded into the Sparticle field and propagated outward.



Classical General Relativity (Medium-Free Geometry)	BFUT Framework (Spaticle Substrate)
Interior State: Singularity (Infinite Density)	Interior State: Finite Compressed Core (p_max_finite)
Boundary Nature: One-way Event Horizon	Boundary Nature: Two-way Permeable Coherence Boundary
Positioning: Independent, migrating objects	Positioning: Structurally fixed at the dynamical centre (Universal Centrality Rule)
Information Fate: Destroyed / Paradox	Information Fate: Encoded and preserved via Carrier Relaxation

From Mathematical Pathology to Physical Reality.