

The ERIÆ Theory: A Ressonant Algebraic Framework for Unified Physics

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Repository: <https://github.com/DanBrasilP/ERIRE>

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Abstract

The **ERIÆ Theory** — *Exponentialization and Rationalization of Imaginary Rotational Evolution* — proposes a novel mathematical and physical framework based on **rotational resonance** in multidimensional space. Rather than relying on traditional scalar fields or point particles, ERIÆ models reality through **coherent rotational projections** within a structured, active space composed of three orthogonal planes: i, j, k . These are treated as foundational axes of a ressonant quaternion-like algebra, redefining particles, forces, and quantization.

Core Concepts

Space as a Ressonant Fluid

- The fundamental structure of space is a **rotational medium**, not a passive vacuum.
- Interactions occur through **phase coupling** across three orthogonal imaginary planes.

EIRE and RIRE Operators

- EIRE:** Rotational amplification via imaginary exponentiation.
- RIRE:** Inverse rotational dampening.
- Together, they form a **reversible transformation system**.

$$\text{EIRE}(z, m) = z^{mi} = e^{im \ln z}, \quad \text{RIRE}(z, n) = z^{1/(ni)} = e^{\frac{\ln z}{ni}}$$

Quantum Structure Reimagined

Particles

Treated as **coherent rotational bubbles**, not point masses.
Identity arises from **geometric phase structure**.

Energy

$$E = h\nu \cdot \Gamma(\vec{R}_s, \vec{R}_m)$$

Where Γ is a rotational phase coupling factor.

Spin

Emerges from the **topology of synchronized projections**.

Wavefunction Collapse

Understood as **loss of rotational coherence**, rather than probabilistic projection.

Applications and Predictions

ERIRE Transform

A new integral operator:

$$\mathcal{T}_{ERIRE}[f](\omega; m) = \int f(t) \cdot e^{m\omega t} dt$$

Unlike Fourier or Laplace, this transform amplifies specific frequencies based on ressonant phase.

Atomic Structure

Electron orbits emerge naturally from **stable phase points**:

$$r_n = n \cdot \frac{\lambda_R}{2}$$

Gravitation

Modeled as **rotational tension** in the medium, not space-time curvature:

$$\vec{F}_g = -\nabla_{\mathbb{E}}(\vec{R}_1 \cdot \vec{R}_2 \cdot f(r))$$

Unified Fields

Electricity and gravity are unified as **phase interactions** within a coherent space.

Reinterpreting Classical Physics

| Classical Law | ERIE Interpretation |
|---------------------|--|
| Newton's Law | Fluid response to rotational gradients |
| Maxwell's Equations | Rotational alignment and divergence |
| Schrödinger Eq. | Multi-projection wavefunction in i, j, k |
| Poisson Eq. | Spatial curvature of rotational coherence |

Classification of Matter

| Type | ERIE Description |
|----------------|--|
| Fermions | Stable rotational modes |
| Bosons | Pulses of pure phase coherence |
| Quarks | Incomplete rotational components |
| Quasiparticles | Emergent modes in condensed phase structures |

Project and Access

The ERI \mathbb{R} E Theory is an **open framework** under development, with ongoing simulations and symbolic implementations available on GitHub.

Repository:

<https://github.com/DanBrasilP/ERIRE>

Explore, simulate, contribute — this project welcomes collaboration.

Suggested Reading (Included in Repository)

- Theoretical Expansions 1–23
- ERI \mathbb{R} E Transform and Algebra
- Applications in Quantum Mechanics and Gravity
- Symbolic Prototypes and Computational Models

Final Words

The ERI \mathbb{R} E Theory is not just a reinterpretation of physics — it's a new language for space, matter, and interaction. By grounding all phenomena in **rotational coherence**, it offers a natural and continuous unification of the quantum, the classical, and the cosmological.

“Rotation is the origin of resonance. Ressonance is the origin of order.”

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