Fractal Causality: Chalkboard Framework (Refined)

This document reframes the "chalkboard math" of Fractal Causality into a cleaner, hypothesis-oriented format. The goal is to highlight the logical flow without overstating claims, making it easier for academics to test or critique.

1. Core Relation

Fractal Causality (FC) is expressed as a feedback loop between two elements: Continuous Quantum Bursts (CQBs) and the Law of Expansion (LOE), constrained by Black Hole (BH) recycling. • CQBs: hypothesized discrete bursts of energy/information. • LOE: emergent large-scale "conveyor belt" expansion. • BHs: sinks that recycle energy/matter. Tentative symbolic form: FC ≈ (CQB × CQB) → LOE, with BH feedback ensuring closure.

2. Structural Analogy

The system may be viewed as a closed-loop circuit: Input (CQBs) → Expansion (LOE) → Recycling (BHs) → Input (CQBs). This framing suggests self-similarity and fractal repetition across scales.

3. Mathematical Skeleton

A toy representation uses an iterative recurrence relation: $E_{n+1} = \alpha \cdot (E_n)^2 - \beta \cdot R(BH)$ • E_n : energy state at step n • α : scaling factor (CQB-driven) • β : recycling efficiency • R(BH) : functional dependence on BH activity This is not presented as a finished equation, but as a skeleton for exploration.

4. Predictions (Qualitative)

• Expansion (LOE) emerges from repeated CQB activity. • Black Holes serve as regulators, not endpoints. • Observable consequences: oscillatory "echo" signatures in cosmological data, fractal-like patterns in energy distributions.

5. Open Questions

• How to formalize CQBs within quantum field theory? • What is the measurable imprint of LOE in galaxy surveys or CMB data? • Can black hole feedback be simulated to test stability of the loop?

This refined chalkboard version avoids overstating speculative claims while providing a structural hypothesis. It is designed for academic engagement: either to be tested, falsified, or further developed.