RCIRCUIT Simulation v0.3 — Coherence Map Prototype

1. Purpose

v0.3 extends v0.2 by introducing a system-level metric called the Coherence Map.

Goal: Observe how local ∆signal propagation produces global order over time — without any global synchronization.

2. Key Concepts

• ∆signal propagation — Only meaningful change moves.

• Local-only updates — Neighbors only.

• Resonance Score — Local alignment with mean phase.

• Coherence Map — Global system order per iteration.

3. What v0.3 Tests

1) Phase stabilization

2) Resonance score evolution

3) Global coherence curve

4) Parameter comparison

4. Expected Behavior

• Early chaos → ordered stability

• ∆signal spikes early, decays later

• Coherence rises toward equilibrium

5. Output Files

• config_v0.3.json

• results_v0.3_example.csv

• coherence_map_v0.3.csv

6. Research Value

First version showing emergent behavior, not just node math.

7. Next Steps

• Circular phase metrics

• Multidimensional propagation

• Coherence heatmap

• Resonant cluster detection