

Growth Systems: A Coherence-Driven Multi-Equilibrium Field Theory

Abstract

We present a unified framework where equilibrium is dynamic, distributed, and coherence-driven. Systems oscillate around multiple moving equilibria, with structure emerging from aligned motion and decaying under entropy.

1. Introduction

Traditional systems assume fixed equilibrium. Growth Systems instead define equilibrium as dynamic and distributed.

2. Core Equation

$$d^2\Phi/dt^2 + R(\Phi)d\Phi/dt = \nabla \cdot B(\Phi) + A(\Phi - Z_i) + G(\Phi)$$

3. Coherence Growth

$$C = 1 / (1 + \text{Var}(\text{velocity}))$$

$$G = \gamma * C / (\text{entropy} + \epsilon)$$

4. Multi-Zero Field

Z_i are distributed equilibrium points that harmonise and move collectively.

5. Dynamics

Oscillation → Coherence → Saturation → Instability → Oscillation

Conclusion

Growth Systems describe coherence-driven emergence in oscillatory fields.