

Unified Cross-Domain Equations for Adaptive Physical–Computational Systems

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Abstract

This technical note consolidates equations spanning adaptive matter, information-mediated interaction, continuous learning, time modulation, and human-state coupling.

1 Unified State

$$\mathcal{S}(t) = \{M, W, \Phi, \tau, \mathcal{H}\} \quad (1)$$

2 Evolution

$$\frac{d\mathcal{S}}{dt} = \mathcal{F}(\mathcal{S}, \mathcal{E}) \quad (2)$$