

Domain Analyses: Growth Trajectories and Open Problems

This supplementary section provides detailed characterizations of each of the eight tracked Active Inference domains, organized under three tiers: A (Core Theory), B (Tools & Translation), and C (Application Domains).

Domain A: Core Theory

A1 — Quantitative & Formal Theory ($n = 120, 9.9\%$)

The A1 domain develops the mathematical foundations underpinning the Free Energy Principle: information geometry, category-theoretic formulations of Markov blankets, path integral formulations of free energy minimization, and gauge-theoretic perspectives on self-organization. A central debate concerns the ontological status of Markov blankets—whether they correspond to real physical boundaries or are merely useful statistical constructs
bruineberg2022emperor. Recent work on Bayesian mechanics
sakthivadivel2023bayesian aims to place the FEP on firmer mathematical footing. With 120 papers, A1 captures nearly 10%