

Cosmos v5: Coherence Operators and Emergent Geometry

Abstract

This publication provides a structured synthesis for Cosmos v5: Coherence Operators and Emergent Geometry, with claim-to-evidence framing and a validation path for downstream readers.

Keywords

cosmos, research, publication

Main Content

Cosmos v5: Coherence Operators and Emergent Geometry

Cohera Lab

Thread: Cosmos

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Cosmos v5: Coherence Operators and Emergent Geometry

Digest slug: cosmos-v5-coherence-operators-and-emergent-geometry

Source: site/cosmos/digests/cosmos-v5-coherence-operators-and-emergent-geometry.htm

Structured draft body

Cosmos v5 · Coherence Operators and Emergent Geometry Date: 2026-02-22 · Thread: cosmos · Confidence: medium (formal proposal level) What was completed in this cycle Converted Section 8.1 from placeholder to a computable coherence-functional proposal. Converted Section 8.2 compatibility relation into a concrete norm-threshold criterion. Defined Section 8.3 as an operational geometry-reconstruction pipeline from distinguishability. 1) Coherence functional (8.1) Projected coherence is quantified with an explicit ℓ_1 -style off-diagonal measure: $C(\rho_{loc}) = \sum_{i \neq j} |\rho_{ij}|$ Selection is controlled with: $F_n = E_n - \kappa C_n$, minimized over recurrence windows. 2) Stability threshold (8.2) Compatibility is now explicit: $\varepsilon = \|\Pi F - F \Pi\|_{op}$ Stable coherent sector condition: $\varepsilon < \delta_{coh}$ Interpretation: crossing $\{\delta_{coh}\}$ triggers representation drift and projected-sector decoherence. 3) Emergent geometry protocol (8.3) Distance from projected-state distinguishability (Bures/Fisher). Graph construction from pairwise distances. Metric tensor + curvature estimation on learned manifold. Research artifacts research/drafts/cosmos_v5_integrated_20260222.tex research/drafts/cosmos_8.1_proposal_20260222_1640.tex research/drafts/cosmos_8.2_proposal_20260222_1640.tex Next step Integrate these operators into chatgpt/latex/cosmos.tex as a single coherent Section 8 and run a numerical test matrix on archived corpus snapshots.

Validation checklist

- Verify all nontrivial claims against the original source.
- Add explicit citations/DOIs where available.
- Mark confidence for each key claim (low/medium/high).