

Loop Ontology of Fields | LOF

Abstract

This paper develops the Loop Ontology of Fields (LOF), extending the foundational axiom *Something Is, Nothing Isn't*. From this axiom, persistence requires closure, and closure is expressed both as a core loop and as its field of influence. Physics describes multiple fields — electromagnetic, gravitational, thermal, nuclear — as distinct. LOF reinterprets them as qualities of one indivisible principle: the inseparable pair of core closure and reach-field. This perspective unifies the diversity of observed fields under a single ontological necessity.

1. The Axiom and Closure

The axiom *Something Is, Nothing Isn't* prohibits gaps in being. Every stable unit must close back upon itself, forming indivisible loops at the Planck boundary.

- Core closure: the indivisible loop that guarantees persistence.
- Reach-field: the natural outward projection of closure across surrounding loops.

These two aspects cannot exist separately: a loop without its field would not interact, and a field without its loop would not persist.

2. Two Inseparable Aspects of Fields

1. The Core Loop

- Absolute, indivisible, unbreakable.
- Anchors being at the Planck limit.
- Equivalent to the minimal unit of persistence.

2. The Reach-Field

- Extends outward from the loop, shaping surrounding space.
- Appears in physics as “forces” or “interactions.”
- Expresses saturation, vibration, and directionality of loops.

Together: field = core + reach.

3. Physics Through LOF

What physics calls “separate fields” are unified in ontology.

- Electromagnetic field: Oscillation of reach-fields around charged loops.
- Thermal field: Vibrational density of loops expressed through reach-fields.
- Gravitational field: Directional bias of reach-field density gradients.
- Nuclear forces: Stabilization and saturation patterns of overlapping reach-fields in

high-energy closures.

Physics measures them separately; ontology recognizes them as different qualities of the same phenomenon.

4. Consequences of LOF

1. Unification: All forces and fields reduce to the inseparability of loop and reach.
2. No void: Interaction does not cross empty space; fields integrate into shared closure.
3. Conservation: The core cannot break, and the reach cannot detach; energy is conserved by necessity.
4. Hierarchy of qualities: Different observed fields are modes of one field, shaped by saturation, geometry, and scale.

5. Conclusion

The Loop Ontology of Fields reframes physics' "many fields" into a single ontological structure: every loop is a closure-field. The indivisible core guarantees persistence, while the reach expresses qualities and interactions. What appear as distinct forces are unified expressions of one principle: *Something Is, Nothing Isn't*.