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Editors
Foundations of Physics

Dear Editor,

I am pleased to submit the manuscript *Electromagnetism as Propagating Torsion in a Hydrodynamic Vacuum: A Geometric Unification via Cartan Structure Equations* for consideration in *Foundations of Physics*.

While standard QED treats gauge fields as abstract entities, our work provides a rigorous geometric derivation of Maxwell's equations from the kinematics of a structured vacuum substrate. We show that the electromagnetic field strength is mathematically isomorphic to spacetime torsion in a teleparallel geometry. This approach not only clarifies the ontology of the photon but yields a novel, falsifiable prediction regarding vacuum magneto-optics that distinguishes this framework from standard vacuum polarization.

Why *Foundations of Physics*. This work aligns closely with the journal's mission to explore the conceptual and fundamental bases of physical laws. It addresses the ontological nature of the vacuum and the photon, proposing a geometric unification that bridges fluid mechanics, Cartan geometry, and gauge theory. Furthermore, it moves beyond pure interpretation by deriving a concrete experimental discriminator—the **Vacuum Verdet Constant**—which predicts a linear-in-B Faraday rotation distinct from the quadratic effects of Euler-Heisenberg QED.

Compliance. The manuscript is original, not under consideration elsewhere, and all authorship/affiliation information is complete. Conflicts of interest: none. Data and code are available via the cited Zenodo record(s).

Thank you for your consideration.

Sincerely,

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