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Editor-in-Chief

Physical Review Letters

American Physical Society

1 Research Road

Ridge, NY 11961

USA

Subject: Submission of "Temporal Flow Theory: Quantum Measurement Implications for Space Travel"

Dear Editor-in-Chief,

I am pleased to submit my manuscript, "Temporal Flow Theory: Quantum Measurement Implications for Space Travel", for consideration as a Letter in Physical Review Letters. This work introduces a novel framework redefining time as a dynamic field ($W^\mu = \eta \nabla^\mu S_{\text{ent}}$) with scale-dependent coupling, unifying quantum mechanics, gravity, and cosmology. Its significance lies in resolving the quantum measurement problem with a physical collapse mechanism, impacting technologies critical for space travel—an area of broad interest to PRL's readership.

The manuscript (core length: ~3,700 words, within the 3,750-word limit) predicts measurable effects, such as enhanced qubit coherence ($\tau_{\text{qubit}} \approx 10^{-4} \text{ s}$) at 50 μm) and ultra-precise navigation ($\Delta\tau/\tau \approx 2.8 \times 10^{-10}$)), validated by simulations and testable with current experiments (e.g., interferometry, LHC). These innovations bridge foundational physics with practical applications, offering substantial advances over existing models (e.g., GRW, (Λ) CDM). The theory's interdisciplinary appeal—spanning quantum foundations, cosmology, and space technology—makes it ideal for PRL's diverse audience.

This submission has no prior PRL history but is accompanied by a publicly available simulation tool, "TempFlowSim," enhancing reproducibility. I suggest referees like John Preskill (quantum measurement), Sean Carroll (cosmology), and Carlo Rovelli (quantum gravity) for their expertise, with no exclusions. Below is the required justification paragraph:

Justification Paragraph (100 words):

The Temporal Flow Theory introduces a groundbreaking field (W^μ), unifying quantum measurement, gravity, and cosmology with profound implications for space travel. Its prediction of a physical collapse mechanism resolves non-locality and enhances qubit coherence ($\tau_{\text{qubit}} \approx 10^{-4} \text{ s}$)), offering ultra-precise navigation ($\Delta\tau/\tau \approx 2.8 \times 10^{-10}$)) and robust computing for interstellar missions. Impactful across physics, it appeals to a broad readership—from quantum theorists to astrophysicists—by addressing foundational issues and practical applications. Its innovation lies in linking time to entanglement entropy, validated by simulations and testable with current technology, warranting publication in Physical Review Letters.

Thank you for considering this submission. I welcome your feedback and am available to discuss further.

Sincerely,

Matthew W Payne

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Enclosures:

- Manuscript: "Temporal_Flow_Theory_Manuscript.pdf"
- Source Files: "temporal_flow_theory.tex", "references.bib"
- Figures: "figure_1a.pdf", "figure_1b.pdf"