

Ethics Statement

Publication Ethics

I hereby confirm that this manuscript:

1. Has not been published previously, either in whole or in part, in any language, except as an abstract, academic thesis, or electronic preprint.
2. Is not currently under consideration for publication elsewhere.
3. Contains original work that has not been previously published or submitted simultaneously to any other journal.
4. Has been prepared in accordance with the ethical guidelines of Nature Physics and Springer Nature.

Research Ethics

This research:

1. Is theoretical in nature and did not involve human subjects, animals, or biological materials.
2. Did not require specific ethical approval as it consists entirely of theoretical physics, mathematical analysis, and computer simulations.
3. All simulation code will be made publicly available upon publication to ensure full reproducibility.

Authorship

I confirm that:

1. I have made substantial contributions to the conception, design, analysis, and interpretation of the work.
2. I have drafted and revised the manuscript critically for important intellectual content.
3. I take full responsibility for the integrity of the entire work and approve the version to be published.

Data and Code Availability

All computational results presented in this manuscript can be reproduced using the simulation code that will be made publicly available in a GitHub repository upon publication.

Acknowledgments

All individuals who contributed to this work but do not meet the criteria for authorship have been acknowledged in the manuscript.

Date: April 18, 2025

Signed: Auric

Version: v38.0