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Quantum Spread Complexity in Neutrino Oscillations

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Neutrino flavor oscillation, a crucial phenomenon in particle physics, explores the interplay between flavor and mass eigenstates, revealing insights beyond the standard model. Probabilistic measures traditionally study these transitions, while the quantum features of neutrinos, such as entanglement, open avenues for quantum information tasks. Quantum complexity, an evolving field, finds application in understanding neutrino oscillations, particularly through quantum spread complexity, offering insights into charge-parity symmetry violations. Our results suggest that complexity favors the maximum violation of charge-parity, which is consistent with recent experimental data. This approach enhances our grasp of neutrino behavior, connecting quantum information theory with particle physics.

Alternate track

1. Beyond the Standard Model

I read the instructions above

Yes

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