INFLUENCE OF A KALB-RAMOND BLACK HOLE ON NEUTRINO BEHAVIOR

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Abstract

In this work, we investigate the consequences of Lorentz symmetry breaking induced by a black hole solution within Kalb-Ramond gravity on neutrino dynamics. The analysis is structured around three key phenomena: the energy output associated with neutrino-antineutrino annihilation, the impact of spacetime geometry on the oscillation phases of neutrinos, and the changes in flavor transition probabilities caused by gravitational lensing effects. To complement the theoretical framework, we also carry out a numerical evaluation of neutrino oscillation probabilities, comparing scenarios of normal and inverted mass orderings within a two-flavor approximation.