

Neutrino Oscillations in Strong Gravitational Fields

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Neutrinos do oscillate, which up to our best knowledge implies that they are massive particles. As such, neutrinos should interact with gravitational fields. As their masses are tiny, the gravitational fields must be extremely strong. In this paper we study the influence of black holes described by non-trivial topologies on the neutrino oscillations. The topologies include a black hole with global monopole, a black hole pierced with a cosmic string, and a black hole in dilaton gravity. We present analytical and numerical solutions of certain specific cases.