

Flavor ratios of extragalactical neutrinos and neutrino shortcuts in extra dimensions

The recent measurement of high energy extragalactic neutrinos by the IceCube Collaboration has opened a new window to probe non-standard neutrino properties. Among other effects, sterile neutrino altered dispersion relations (ADRs) due to shortcuts in an extra dimension can significantly affect astrophysical flavor ratios. We discuss an MSW-like resonant conversion arising from geodesics oscillating around the brane in an asymmetrically warped extra dimension. We demonstrate that the second case has the potential to suppress significantly the flux of specific flavors such as ν_μ or ν_τ at high energies.

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