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Dark matter assisted neutrino oscillation

Monday, 7 October 2019 16:00 (30 minutes)

We study neutrino oscillations in a medium of dark matter which generalizes the standard matter effect. A general formula is derived to describe the effect of various mediums and their mediators to neutrinos. Neutrinos and anti-neutrinos receive opposite contributions from the asymmetric distribution of (dark) matter and anti-matter, and thus it could appear in precision measurements of neutrino or anti-neutrino oscillations. Furthermore, neutrino oscillations can occur from the symmetric dark matter effect even for massless neutrinos.

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