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Sensitivity study of KM3NeT-ORCA to Sterile Neutrinos

The KM3NeT is a next generation neutrino telescope under construction in the Mediterranean sea. The primary goal of the low energy configuration, ORCA, is to measure oscillation parameters with atmospheric neutrinos, in particular the Neutrino Mass Ordering (NMO). In addition to this primary goal, ORCA will also be capable of constraining a number of non-standard physics scenarios such as sterile neutrinos. In this contribution, we will present ORCA's sensitivity to sterile neutrino parameters U_{e4}, $U_{\mu 4}$ and $U_{\tau 4}$ over a wide range of Δm^2_{41} ~ $10^{-5} - 10^2$ eV^2.

Mini-abstract

Searching for sterile neturinos with the upcoming KM3NeT-ORCA neutrino telescope

Experiment/Collaboration

KM3NeT

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