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Oscillation Physics with KM3NeT-ORCA

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The Kilometer Cube Neutrino Telescope (KM3NeT) is a next generation undersea neutrino telescope in the Mediterranean sea, currently under deployment. It's low energy configuration ORCA (Oscillations Research with Cosmics in the Abyss) will have a low neutrino energy detection threshold of 3 GeV. The effective mass of the fully completed detector is estimated to be around 5.8 Mega tonnes. The primary goal of ORCA is to determine the neutrino mass hierarchy with atmospheric neutrinos and make precise measurement of the atmospheric oscillation parameters. It will also be able to test the PMNS unitarity and constrain non-standard physics scenarios such as sterile neutrinos and Non-Standard Physics (NSI). In this talk the status and prospects for the oscillation measurements will be presented and potential future upgrades of ORCA will be discussed.

Collaboration name

KM3NeT Collaboration

Autore principale: THAKORE, Tarak (IFIC)

Relatore: THAKORE, Tarak (IFIC)

Classifica Sessioni: Neutrino

Classificazione della track: Neutrino Physics