



Contribution ID: 1240

Type: Parallel Talk

Atmospheric neutrino oscillation studies with KM3NeT/ORCA

Saturday, 9 July 2022 10:15 (15 minutes)

The KM3NeT collaboration is currently deploying two neutrino detectors at the bottom of the Mediterranean Sea: KM3NeT/ARCA, optimised for neutrino astronomy in the TeV to PeV range, and KM3NeT/ORCA, designed for GeV neutrino detection. The latter one is expected to be completed at the 2025 horizon with 115 string-like vertical Detection Units (DU) arranged in a cylindrical array. It will offer a competitive sensitivity to determine the Neutrino Mass Ordering (NMO) and atmospheric neutrino oscillation parameters.

An early configuration of the detector, consisting of only 6 DU's, was operated for 2 years during 2020 and 2021. Although the reconstruction performance of this setup is limited comparing to the expected performance of the full instrumented detector, it already allowed for the extraction of a high purity neutrino sample. In this contribution, we will present the measurement of neutrino oscillation parameters θ_{23} and Δm_{23}^2 , as well as first sensitivity to determine the neutrino mass ordering based on this data sample.

In-person participation

Yes

Primary author: Mr PESTEL, Valentin (Nikhef)**Presenter:** Mr PESTEL, Valentin (Nikhef)**Session Classification:** Neutrino Physics**Track Classification:** Neutrino Physics