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KM3NeT-ORCA and JUNO combined sensitivity to the neutrino mass ordering

The neutrino mass ordering (NMO) is one of the fundamental questions in neutrino physics. This can be unraveled by next-generation neutrino detectors such as JUNO and KM3NeT-ORCA. JUNO is a medium-baseline (53 km) reactor experiment which could be sensitive to the NMO by investigating the interference effects between fast oscillations in oscillated electron-antineutrino spectrum. KM3NeT-ORCA is the Mton-scale water Cherenkov detector under construction in the Mediterranean Sea abyss. It can determine the NMO by probing Earth matter effect on atmospheric neutrinos. When measuring Δm_{31}^2 with a wrong ordering assumption, the best fit values are different between the two experiments. This tension could help enhancing the sensitivity to NMO in a joint fit. In this poster, the possibility of NMO determination from a combined analysis of JUNO and KM3NeT-ORCA is presented.

Mini-abstract

Combined fit of JUNO and KM3NeT-ORCA can enhance the sensitivity to the neutrino mass ordering.

Experiment/Collaboration

KM3NeT

Primary authors: Dr KALOUSIS, Leonidas (IPHC); Mr CHAU, Nhan (AstroParticles and Cosmology laboratory)

Co-authors: Dr KOUCHNER, Antoine (University Paris 7 Diderot - Astroparticle and Cosmology); Dr BAUSAN, Eric (CNRS-IN2P3/Université de Strasbourg); Dr ATHAYDE MARCONDES DE ANDRÉ, João Pedro (IPHC); Dr DRACOS, Marcos (IPHC-IN2P3/CNRS); Dr VAN ELEWYCK, Veronique (APC, Université Paris Diderot)

Presenter: Mr CHAU, Nhan (AstroParticles and Cosmology laboratory)

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