

The status of the KM3NeT neutrino telescope

Friday 19 July 2024 10:45 (20 minutes)

KM3NeT is a deep-sea neutrino observatory currently under construction in the Mediterranean Sea. Its main goals are the search for sources of high energy cosmic neutrinos and the study of neutrino oscillation phenomena with atmospheric neutrinos.

KM3NeT comprises 3D arrays of multi-PMT optical modules optimised to detect the Cherenkov light emitted by charged particles resulting from neutrino interactions in the vicinity of the detectors. With its two sites: ARCA a 'sparse' km³-scale detector offshore from Sicily and ORCA a 'dense' 7 Mton detector offshore from the south of France, KM3NeT is sensitive to neutrino energies ranging from MeV to PeV.

In this talk the status of the KM3NeT detector is presented and the latest results obtained with partial detector configurations are reported. Results will include searches for diffuse, steady and transient cosmic sources, measurement of the atmospheric neutrino oscillation parameters, tau appearance, neutrino mass ordering, BSM effects.

Alternate track

I read the instructions above

Yes

Author: COYLE, Paschal Anthony (Centre National de la Recherche Scientifique (FR))

Presenter: COYLE, Paschal Anthony (Centre National de la Recherche Scientifique (FR))

Session Classification: Astro-particle Physics and Cosmology

Track Classification: 08. Astro-particle Physics and Cosmology