Contribution ID: **52**   Type: **Oral**

Measuring the Neutrino Mass Hierarchy with the KM3NeT/ORCA Detector

Monday, 2 July 2018 16:30 (30 minutes)

The ORCA detector (Oscillations Research with Cosmics in the Abyss) is an underwater Cherenkov neutrino telescope that constitutes the low energy branch of the KM3NeT project, a next generation neutrino oscillation experiment located in the Mediterranean. The primary goal of KM3NeT is to solve the question of neutrino mass ordering through the measurement of matter oscillation effects using atmospheric neutrinos. The ORCA detector has a design optimized for low (<100GeV) energies of neutrinos, with densely configured detection units, and is being deployed at the French KM3NeT site ~40 km offshore Toulon, at a depth of 2500 m. ORCA will use multi-PMT modules, called Digital Optical Modules (DOMs), to exploit the optical properties of deep seawater for accurate reconstruction of cascade and track neutrino event topologies. The current status of the ORCA detector and the current sensitivities for determining the neutrino mass hierarchy, as well as potential for constraints on other oscillation parameters, will be presented in this talk.

Primary author: NIELSEN, Christine (APC)

Presenter: NIELSEN, Christine (APC)

Session Classification: Parallel Session 2-6