



Contribution ID: 258

Type: **Talk**

Search for cosmic neutrino point sources and extended sources with 6-21 lines of KM3NeT/ARCA

Wednesday 23 July 2025 16:20 (15 minutes)

The identification of cosmic objects emitting high energy neutrinos provides new insights about the Universe and its active sources. The existence of cosmic neutrinos has been proven by the IceCube Neutrino Observatory, however the big question of where these neutrinos originate from remains largely unanswered. The KM3NeT detector for Astroparticle Research with Cosmics in the Abyss (ARCA) is currently being built in the Mediterranean Sea. It will have an instrumented volume of a cubic kilometre, and will excel at identifying cosmic neutrino sources due to its unprecedented angular resolution (< 0.1 degree for muon neutrinos with $E > 300$ TeV). KM3NeT has a view of the sky complementary to IceCube, and is sensitive to neutrinos across a wide range of energies. Currently more than 10% of the detector is installed in the deep sea. This contribution will present the results of point source and extended catalogue sources, as well as an all-sky scan looking for potential neutrino sources, with KM3NeT/ARCA data taken between May 2021 and September 2023 with an evolving detector geometry up to 21 lines.

Collaboration(s)

KM3NeT

Authors: HEIJBOER, aart (nikhef); Ms MULLER, Rasa Simone; PARISI, Vittorio (University of Genova); Dr KULIKOVSKIY, Vladimir (INFN Genova)

Presenter: PARISI, Vittorio (University of Genova)

Session Classification: NU

Track Classification: Neutrino Astronomy & Physics