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Extreme blazars: stacking analysis with KM3NeT/ARCA

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KM3NeT/ARCA is a large underwater Cherenkov neutrino detector, currently under construction at the bottom of the Mediterranean Sea. The detector geometry is optimised for the observation of TeV-PeV astrophysical neutrinos. Once completed, the detector will consist of 230 Detection Units (DUs). A Detection Unit is an 800-meter vertical line that holds 18 Digital Optical Modules, containing 31 photomultiplier tubes each.
This contribution presents a study of Extreme High-energy Synchrotron Peaked (EHSP) blazars. The energy of the EHSP synchrotron peak is the highest among blazars and these "extreme blazars"are particularly relevant for high-energy astrophysics since they may emit high-energy neutrinos in the energy range where Cherenkov detectors such as KM3NeT/ARCA are sensitive.
This study is a likelihood stacking analysis using KM3NeT/ARCA data collected in a partial detector configuration with 21 active DUs. The neutrino fluxes of selected extreme blazars are computed using LeHaMoC numerical modeling code and then compared with KM3NeT/ARCA observations.

Collaboration(s)

KM3NeT

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