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Looking for extreme blazars with KM3NeT/ARCA stacking analysis on behalf of the KM3NeT Collaboration

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The extreme high-energy synchrotron peaked (EHSP) blazars represent a subclass of these sources which emit in the very high-energy (VHE) γ-ray band. The energy of EHSPs synchrotron peak is the highest among the blazars, and usually exceeds 10^{17} Hz. These sources are often known as "extreme blazars"and are particularly relevant for high-energy astrophysics since they may emit high-energy neutrinos in the energy range where neutrino detectors are sensitive. A study of these interesting sources is carried out through a likelihood stacking analysis with the KM3NeT/ARCA neutrino telescope. The KM3NeT/ARCA neutrino telescope is a cubic kilometer volume Cherenkov detector, currently under construction, optimised for the observation of TeV-PeV astrophysical neutrinos. Once completed, the detector will consist of 230 Detection Units, each holding 18 digital Optical Modules.

In this contribution, a stacking likelihood analysis of selected extreme blazars from the 3HSP catalog is obtained for the KM3NeT/ARCA detector. The neutrino fluxes of some selected extreme blazars are computed using the AM3 open source modeling code and then compared with km3net ARCA expectation.

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