Contribution ID: **96**　　　　　　　　　　　　　　　　　　　Type: **not specified**

KM3NeT/ARCA expectations for starburst galaxies observation

Thursday, 8 September 2022 14:50 (20 minutes)

On behalf of the KM3NeT Collaboration

In this contribution, we present the expectations of the full detector KM3NeT/ARCA for particular Starburst Galaxies signals, both as a diffuse signal and as point-like excess. To describe the diffuse flux, we use a recent theoretical model, also developed by some of the authors of this contribution, which implements a "blending" of spectral indexes to describe the high energy spectral energy distribution. For the point-like search approach, we considered the most promising local starburst galaxies to be observed as point-like neutrino excesses: NGC 1068, the Small Magellanic Cloud and the Circinus Galaxy. For the diffuse analysis, we provide the 5-year differential sensitivity for two ARCA building blocks, considering both track and shower events, in the range of 100 GeV - 10 PeV. For the point like analysis, we provide the 6-year differential sensitivity for two ARCA building blocks, only considering track events in the range of 1 TeV - 10 PeV. We found that ARCA has the potential to constrain the selected phenomenological scenarios, showing the minimum of the sensitivity where the theoretical spectral energy distributions are expected to peak. This could provide evidence of the link between star-forming processes and hadronic emissions.

Summary

Primary author: IDRISSI IBNSALIH, Walid (Istituto Nazionale di Fisica Nucleare)

Co-authors: MIGLIOZZI, Pasquale (INFN Napoli); AMBROSONE, Antonio (Istituto Nazionale di Fisica Nucleare); MARINELLI, Antonio (Istituto Nazionale di Fisica Nucleare (INFN) sezione di Napoli); MIELE, Gennaro (University of Naples "Federico II", Istituto Nazionale di Fisica Nucleare (INFN) sezione di Napoli, Scuola Superiore Meridionale (SSM)); Mrs MUSONE, Maria Rosaria (INFN - Napoli)

Presenter: IDRISSI IBNSALIH, Walid (Istituto Nazionale di Fisica Nucleare)

Session Classification: Extra-Galactic sources