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Prospects of neutrino observations of the Central Molecular Zone and Cygnus cocoon with KM3NeT/ARCA

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In this contribution, a search for neutrino emission from the Central Molecular Zone (CMZ) and the Cygnus Cocoon is presented exploiting KM3NeT/ARCA capabilities. The CMZ extends for a few hundred parsecs around the Galactic center, containing the massive molecular clouds Sgr A, Sgr B, and Sgr C. The Cygnus Cocoon is a massive star-forming region of a few hundred parsecs in the constellation of Cygnus. It contains regions with high gas densities and a rich stellar population. The high energy emission from these regions is expected to be dominated by the interactions of cosmic-rays with the molecular gas, which translate into gamma-ray and neutrinos production. Here we present a search for neutrino emission from these two regions. We explored the sensitivities of the current KM3NeT/ARCA geometry as well as the case of the complete future detector.

Collaboration(s)

KM3NeT

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