Contribution ID: **635** Type: **Talk**

Search for Magnetic Monopoles with ten years of ANTARES data

Monday, July 12, 2021 6:20 PM (12 minutes)

The present study is an updated search for magnetic monopoles using data taken with the ANTARES neutrino telescope over a period of 10 years (January 2008 to December 2017). In accordance with some grand unification theories, magnetic monopoles could have been created during the phase of symmetry breaking in the early Universe, and accelerated by galactic magnetic fields. As a consequence of their high energy, they could cross the Earth and emit a significant signal in a Cherenkov-based telescope like ANTARES, for appropriate mass and velocity ranges. This analysis uses a run-by-run simulation strategy, as well as a new simulation of magnetic monopoles taking into account the Kasama, Yang and Goldhaber cross section. The results obtained for relativistic magnetic monopoles with velocity $v \geq 0.57c$ will be presented.

Keywords

Magnetic Monopole, Neutrinos Telescope, Antares

Collaboration

Antares

other Collaboration

KM3NeT

Subcategory

Experimental Results

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Session Classification: Discussion

Track Classification: Scientific Field: NU | Neutrinos & Muons