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Search for PeV gamma-ray sources with the GAMMA experiment

Abstract content

We present the current status of the search for sources and prospects for gamma-ray astronomy in the PeV energy domain using the extensive air shower detector array GAMMA, situated at 3200 m a.s.l. on Mt. Aragats, Armenia. The recent extension of the array with detectors at a distance of 100 m from the array center improves the reconstruction accuracy for high-energy showers. We examine the sensitivity of the GAMMA experiment for the detection of localized gamma-ray sources in the EAS data, taking into account sky observability from Mt. Aragats, the uncertainties in shower direction reconstruction, and the efficiency of selection criteria based on the GAMMA muon data. We discuss the gamma-ray fluxes which could be expected from the sources of Galactic cosmic rays, based on extrapolation of observations in the TeV energy domain, and taking into account the attenuation due to gamma-ray interactions with lower-energy Galactic photon fields. Current results of the search for localized sources in the GAMMA data are presented.

If this papers is presented for a collaboration, please specify the collaboration

GAMMA collaboration

Summary

Reference

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