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TeV Observations of the Galactic Plane with HAWC and Joint Analysis of GeV Data from Fermi

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A number of Galactic sources emit GeV-TeV gamma rays that are produced through leptonic and/or hadronic mechanisms. Spectral analysis in this energy range is crucial in order to understand the emission mechanisms. The HAWC Gamma-Ray Observatory, with a large field of view and location at 19° N latitude, is surveying the Galactic Plane from high Galactic longitudes down to near the Galactic Center. Data taken with partially-constructed HAWC array in 2013-2014 exhibit TeV gamma-ray emission along the Galactic Plane. A high-level analysis likelihood framework for HAWC, also presented at this meeting, has been developed concurrently with the Multi-Mission Maximum Likelihood (3ML) architecture to deconvolve the Galactic sources and to perform multi-instrument analysis. It has been tested on early HAWC data and the same method will be applied on HAWC data with the full array. I will present preliminary results on Galactic sources from TeV observations with HAWC and from joint analysis on Fermi and HAWC data in GeV-TeV energy range.

Collaboration

HAWC

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