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A data-driven evaluation of Fermi-LAT extrapolation schemes to the VHE regime.

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After 10 years of operations of the Large Area Telescope (LAT), a high-energy pair-creation telescope on-board the Fermi satellite, the Fermi Collaboration has produced two major catalogs: the 4FGL and the 3FHL. These catalogs represent the best sample of potential very high energy (VHE) emitters that may be studied by Imaging Atmospheric Cherenkov Telescopes (IACTs). Several methods are used to extrapolate the Fermi-LAT spectra to TeV energies, generally using simple analytical functions. The recent success of IACTs has motivated the creation of catalogs listing the discoveries of these experiments. Among these initiatives, gamma-cat excels as an open-access tool to archive high-level results in the VHE field, such as catalogs, spectra and light curves. By using these resources, we present a data-driven methodology to test the reliability of different VHE extrapolation schemes used in the literature and evaluate their accuracy reproducing real VHE observations.

Keywords

VHE, AGN, extrapolations, Fermi-LAT, spectra

Collaboration

other Collaboration

Subcategory

Experimental Methods & Instrumentation

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