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A Cosmic-ray Electron Spectrum with VERITAS

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Cosmic-ray electrons and positrons (CREs) at GeV-TeV energies are a unique probe of our local Galactic neighborhood. CREs lose energy rapidly via inverse Compton scattering and synchrotron processes while propagating in the Galaxy, effectively placing a maximal propagation distance for TeV electrons of order \sim 1 kpc. Within this window, production of CREs can come from a handful of known, nearby astrophysical sources capable of exciting CREs to that energy or from more exotic production mechanisms, like particle dark matter. HESS, and later MAGIC, have shown that ground-based imaging atmospheric Cherenkov telescopes have the capability to measure CREs into the TeV band. In this presentation we'll discuss the status of a VERITAS measurement of the electron plus positron cosmic ray spectrum.

Collaboration

VERITAS

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