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A Monte Carlo template-based analysis for very high definition imaging atmospheric Cherenkov telescopes as applied to the VERITAS telescope array

Tuesday 4 August 2015 16:00 (1 hour)

VERITAS is an imaging atmospheric Cherenkov telescope array that is sensitive to very-high energy gamma-rays from 85 GeV to 30 TeV. We present a high-performance shower-image analysis. The algorithm is based on the likelihood fitting of the charge amplitude in the camera pixels to an expected image template. The templates are generated by performing Monte-Carlo simulations of a large number of air showers for a given event parameter set, followed by ray-tracing of the telescope optics. A maximum likelihood fit is performed to find the best-fit shower parameters. A related reconstruction algorithm has already been shown to provide significant improvements over traditional reconstruction for both the CAT and H.E.S.S. experiments.

Collaboration

VERITAS

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225

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