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Angular resolution and pointing accuracy of the GRAPES-3 experiment obtained by Moon shadow observation

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A good angular is essential for detecting gamma ray sources at multi-TeV energies. The GRAPES-3 experiment, located in Ooty, Tamil Nadu (11.4° N, 76.7° E, 2200 m a.s.l.), is designed with a dense array of 400 scintillator detectors spread over 25000 m^2 to study gamma rays sources in the TeV-PeV energy range. By exploiting the shower front curvature, almost a factor of two improvement in the angular resolution of the array could be achieved as compared to the earlier analysis. This has been verified by observing shadow in the cosmic ray flux cast by the Moon using 3 years of the GRAPES-3 data. Further, it has allowed us to determine the pointing accuracy of the direction. The new angular resolution is comparable to other major air shower experiments located at twice the GRAPES-3 altitude.

Session

Astroparticle Physics and Cosmology

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