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Angular resolution of GRAPES-3 array obtained from the shadow of Moon and Sun in extensive air showers

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Abstract content

The GRAPES-3 experiment observes extensive air showers using a high-density array of scintillators and a large area tracking muon detector. The array consists of 300 scintillation detectors (each 1m^2 in area) and 16 modules of muon detectors having a total area of 560m^2 . Good angular resolution of the array is a key requirement for detection of point sources of gamma rays. For this purpose we have developed a method of time offset correction by using the air shower data to track its time variation for each detector. Since the angular size of Sun and Moon are small compared to the expected angular resolution of our array, we have used the deficit in shower rate caused by the shadow of these two objects to determine the angular resolution as a function of shower size. Here we report the results of our analysis on observation of the shadow of Moon and Sun.

If this paper is presented for a collaboration, please specify the collaboration

GRAPES-3

Summary

Reference

Proceedings of the 30th International Cosmic Ray Conference; Rogelio Caballero, Juan Carlos D'Olivo, Gustavo Medina-Tanco, Lukas Nellen, Federico A. Sánchez, José F. Valdés-Galicia (eds.); Universidad Nacional Autónoma de México, Mexico City, Mexico, 2008; Vol. 3 (OG part 2), pages 1515-1518

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