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Monte Carlo Simulation of the Milagro Gamma-ray Observatory

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Abstract content

The Milagro gamma-ray observatory is a water-Cherenkov detector capable of observing air showers produced by very high energy gamma-rays. The sensitivity and performance of the detector is determined by a detailed Monte Carlo simulation and verified through the observation of gamma-ray sources and the isotropic cosmic-ray background. Corsika is used for simulating the extensive air showers produced by either hadrons (background) and gamma rays (signal). A GEANT4 based application is used for simulating the response of the Milagro detector to the air shower particles reaching the ground. The GEANT4 simulation includes a detailed description of the optical properties of the detector and the response of the photomultiplier tubes. Details and results from the Milagro Monte Carlo simulation will be presented.

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

Milagro

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 1377-1380

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