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Influence of hadronic interaction models on the muon multiplicity distribution of air showers observed with the GRAPES-3 experiment at Ooty

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Abstract content

The GRAPES-3 experiment observes extensive air showers using a high-density array of scintillation detectors and a large area tracking muon detector. We have studied the relationship between the muon multiplicity distribution and shower size for the GRAPES-3 data taken during the period of 2000 - 2003. Monte Carlo simulations using CORSIKA code were performed to extract the spectra for various nuclear groups namely H, He, N, Al and Fe from these observations. We have used SIBYLL and QGSJET2 hadronic interaction models and compared our spectra with the direct measurements obtained from balloon and satellite borne experiments. We also discuss the influence of these interaction models on various observables. Such a study is important for a better understanding of hadronic interactions at very high energies.

If this papers 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. 4 (HE part 1), pages 691-694

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