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Hadronic Interaction Model EPOS and Air Shower Simulations: New Results on Muon Production.

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Abstract content

Since about one decade, air shower simulations based on the hadronic interaction models QGSJET and SIBYLL predict very similar results for the main observables. For instance, the mean depth of the shower maximum Xmax agrees within 5% between the different models and are in relative good agreement with the measurements. However the number of muons at ground differs substantially between these 2 models and the data. Recently a new hadronic interaction model EPOS has been introduced in air shower simulation programs. This model has originally been used to analyse hadron-hadron as well as heavy ion physics at RHIC and SPS energies, and it gives very interesting results in air shower simulations: we find for example a large increase in the number of muons at ground as compared to the former models. Results will be discussed in detail, in particular the role of the baryons and anti-baryons in the air shower development.

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

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 629-632

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