



Contribution ID : 345

Type : Oral

Testing the low energy hadronic models used in Aires, with CAPRICE98 results.

Thursday, 5 July 2007 10:54 (0:12)

Abstract content

Air shower simulation programs are used to reconstruct the energy in the UHECR surface detectors. This reconstruction is based on the lateral distribution function obtained in the experiment. It is also known that this function at core distance greater than 1 km strongly depends on the low energy hadronic models used in the simulation. There are discrepancies in the particle production due to the different models that are used. This discrepancy is not only at high (>100 GeV) but also at low energy. Almost all collider experiments show difficulties in the measurement of the diffractive cross section since they do not register particles emitted into the forward direction. A new version of the air shower simulation programs AIRES, with an improved treatment of the diffractive cross section in the low energy hadronic model was developed. To cross-check this model, we compare the results of the balloon born experiment CAPRICE98, on atmospheric fluxes of particles with this new version of AIRES.

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'Olivio, 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 589-592

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Session Classification : HE 1.6

Track Classification : HE.1.6