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. 2 (OG part 1), pages 583–584

30th International Cosmic Ray Conference



Gamma-hadron separation of parent particles of air showers above several 10 TeV energies using Tibet-III air-shower array

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Abstract: The recent advances in TeV gamma-ray astronomy are largely due to the ability to distinguish between extensive air showers generated by gamma rays and hadronic cosmic rays. In this paper, we report on a method to distinguish electromagnetic air showers from hadronic air showers in Tibet air-shower observation. An extensive Monte Carlo simulation has been carried out and the secondary particles are also propagated through the Tibet-III air shower array to study the detector response. Some preliminary results on the search for gamma-ray sources above several 10 TeV energies are discussed.