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Studies of Direct Cerenkov Emission with VERITAS

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Abstract content

Ground-based composition measurements of high-energy cosmic rays can be significantly improved by using the direct Cerenkov method. This technique targets the Cerenkov light produced by the primary particle prior to its production of an extensive air shower. With the appropriate time and angular resolution, the direct Cerenkov photons can be separated from those produced in the extensive air shower. By utilizing the 0.15deg angular and 2 nanosecond timing resolution of the very high energy gamma-ray telescope system, VERITAS, the charge and energy of cosmic rays at TeV energies can be identified on an event-by-event basis. Results from a preliminary search for direct Cerenkov events are discussed.

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

VERITAS

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. 2 (OG part 1), pages 417-420

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