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Energy spectrum of cosmic iron nuclei measured by H.E.S.S.

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Abstract content

A recently proposed novel technique for the detection of cosmic rays with arrays of Imaging Atmospheric Cherenkov Telescopes is applied to data from the High Energy Stereoscopic System (H.E.S.S.). The method relies on the ground based detection of Cherenkov light emitted from the primary particle prior to its first interaction in the atmosphere. The charge of the primary particle (Z) can be estimated from the intensity of this light, since it is proportional to Z**2. Using H.E.S.S. data, an energy spectrum for cosmic-ray iron nuclei in the energy range 13–200 TeV is derived. The reconstructed spectrum is consistent with previous direct measurements and is the most precise measurement so far in this energy range.

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

H.E.S.S. 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. 2 (OG part 1), pages 15-18

Primary author(s) : Mr. BUEHLER, Rolf (MPIK Heidelberg)

Presenter(s) : Mr. BUEHLER, Rolf (MPIK Heidelberg)

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