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Measurement of the cosmic ray spectrum above 10^{18} eV using data recorded with the fluorescence detectors and at least one detector of the surface array of the Auger Observatory

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Abstract content

Three years of data collected with the fluorescence detector in coincidence with at least one station of the surface detector array ('hybrid data') are used to measure the flux and energy spectrum of cosmic rays above about 10^{18} eV. The hybrid measurement extends the spectrum measured with the surface detector data alone towards lower energies, and provides a cross-check in the overlap region with an independent analysis method. The determination of the aperture of the fluorescence detector and of the live-time, which are key features of this measurement, is illustrated in detail. Our estimates of the corresponding systematic uncertainties are given.

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

The Pierre Auger 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 331-334

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