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Measurement of the Energy Spectrum of Cosmic Rays above 3 10¹⁷ eV at the Pierre Auger Observatory

Thursday 18 July 2013 17:15 (15 minutes)

We report the measurement of the flux of cosmic rays with unprecedented precision and statistics using data collected at the Pierre Auger Observatory until 31 December 2012. The fluorescence observation of the air-showers provide intrinsically a calorimetric energy measurement. Based on the hybrid nature of the experiment, the energy scale for the surface detector is obtained with minimal use of Monte Carlo simulations. The energy spectrum deduced with the more denser array of 750 m, which provides the extension of the energy range from 1.5 10^18 eV down to 3 10^17 eV will be emphasised. The spectral features are presented in detail and the systematic uncertainties are addressed. We also present the current enhancements of the Pierre Auger Observatory.

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