

Measurement of the energy spectrum of cosmic rays at the highest energies using the Pierre Auger Observatory

Abstract content

We present the analysis of cosmic rays measured with the Pierre Auger Observatory using several independent methods all of which rely on fluorescence measurements to establish the energy of the events. The spectrum obtained with showers below 60 degrees obtained for energies above 3 EeV with the surface detector has been extended to lower energies combining it to the spectrum obtained with fluorescence observations in which at least one station of the surface detector has been triggered. We also report on the independent spectrum obtained using showers with zenith angles from 62 to 80 deg measured with the surface detector and on the spectrum for energies above 0.3 EeV obtained with a small region of the array in which the distance between surface stations has been halved. The spectral features are presented in detail and the impact of systematic uncertainties on these features is addressed.

Summary

Primary author(s) : Ms. PARRA, Alejandra (Universidad de Santiago de Compostela)

Presenter(s) : Ms. PARRA, Alejandra (Universidad de Santiago de Compostela)