

Abstract Submitted
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The Cosmic Ray Spectrum Measured at the Pierre Auger Observatory ALAN COLEMAN, Univ of Delaware, PIERRE AUGER OBSERVATORY COLLABORATION — The Pierre Auger Observatory is the world's largest cosmic ray detector and has been taking data for over 16 years. In this time, an unprecedented amount of statistics has been collected which allows for high precision measurements of the most energetic particles ever observed. In this presentation, the measurement of the all-particle cosmic ray spectrum will be shown as measured by both the surface detector (SD) and fluorescence detector (FD). Auger's two nested SD arrays consist of hexagonal arrays of water Cherenkov detectors with 1500m and 750m spacing. The FD consists of four sets of six telescopes that overlook the SD, calorimetrically measures the electromagnetic content of $\gtrsim 100$ PeV air showers, and sets the energy scale for the observatory. This presentation will include five distinct measurements of the all particle spectrum, three from the SD and two from the FD, covering primary energies $16.5 \leq \lg(E/\text{eV}) \leq 20.5$. Additionally, a combined spectrum using these observations will be shown with a combined exposure of 80,000 $\text{km}^2 \text{ sr yr}$. The combined spectrum spans more than four order of magnitude in energy and clearly displays two distinct inflection points in the spectrum (the so-called second knee and ankle) as well as a suppression at the highest energies.

Alan Coleman
Univ of Delaware

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