Abstract Submitted
for the APR10 Meeting of
The American Physical Society

Measurement of the Flux of Ultra-High Energy Cosmic Rays at the Pierre Auger Observatory SEGEV BENZVI, University of Wisconsin - Madison, PIERRE AUGER COLLABORATION — The energy spectrum of cosmic rays above 10^{18} eV has been measured with unprecedented statistics at the Pierre Auger Observatory. From air shower measurements made using the fluorescence telescopes and the surface detector array at the Auger site, we report three measurements of the energy spectrum: using downgoing events observed with the surface array only; using nearly horizontal showers observed with the surface array; and using showers observed with the fluorescence telescopes and surface array in combination. These three techniques use partly independent data sets with different systematic uncertainties, providing useful checks of the spectrum measurement. The observed spectra agree within systematic uncertainties, and indicate a hardening of the spectral index near $10^{18.6}$ eV and a significant suppression of the flux above $10^{19.5}$ eV. We will describe the systematic uncertainties of the reported fluxes, and discuss the astrophysical implications of these measurements.

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Date submitted: 23 Oct 2009 Electronic form version 1.4