

Abstract Submitted
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Estimating Ultra-High Energy Cosmic Ray Data as seen from the JEM-EUSO Fluorescence Detector for the planned space based JEM-EUSO detector JEREMY FENN, LAWRENCE WIENCKE¹, Colorado Sch of Mines — Ultra-high energy cosmic rays (UHECRs) are subatomic particles with energies above 10^{18} eV. UHECRs are of interest because they are the highest energy particles known to exist. Their source(s), compositions, and the acceleration mechanisms to produce them with energies beyond 10^{20} eV remain unknown. The Pierre Auger Observatory, located in Argentina, is the world's largest UHECR observatory. It is one of the few a hybrid detectors in the world that combines surface (SD) and fluorescence (FD) detectors. The hybrid detection system is advantageous as it provides a more accurate reconstruction of the incoming cosmic ray's energy and trajectory as it travels through the atmosphere. However, even with the advantage of a hybrid detector, the Pierre Auger has limitations being a ground based observatory. The next generation in UHECR detection is the planned JEM-EUSO mission. The JEM-EUSO mission will consist of a fluorescence detector telescope attached to the International Space Station (ISS). The JEM-EUSO detector is expected to receive an exposure level to UHECRs many times that of the Pierre Auger Observatory by viewing a much larger volume of the atmosphere. In this presentation, I will discuss how data from specific UHECRs collected by the Pierre Auger Observatory is analyzed and altered to estimate what their signatures would look like from space at the planned JEM-EUSO detector.

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