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Sensitivity of JEM-EUSO to Ensemble Fluctuations in the Ultra-High Energy Cosmic Ray Flux THOMAS PAUL, University of Wisconsin-Milwaukee, MARKUS AHLERS, University of Wisconsin, LUIS ANCHORDOQUI, University of Wisconsin-Milwaukee, ANDREW TAYLOR, Dublin Institute for Advanced Studies, JEM-EUSO COLLABORATION — The energy spectrum of ultra-high energy cosmic rays (UHECR) exhibits a number of features which presumably reflect the mechanisms of cosmic acceleration, the distribution of acceleration sites, the elemental composition of the cosmic rays, and propagation effects. A coherent explanation of all UHECR measurements taken over some 50 years has so far proved to be elusive. For example, there is more than one hypothesis for the mechanism(s) responsible for the changes in spectral index observed above 10^{17} eV, including the very significant flux suppression at an energy near 4×10^{19} eV. Future large exposure observatories such as the Extreme Universe Space Observatory on the Japanese Experiment Module (JEM-EUSO) will allow high statistics observation of the region around this flux suppression. One feature which may become evident in this region is the so-called ensemble fluctuation, which constitutes fluctuation in the energy spectrum beyond expectations from Poisson statistics. This as-yet unobserved feature results from the discreetness of UHECR source distribution together with propagation effects and elemental composition, and may help to enhance our understanding of the complex of UHECR features. Here we evaluate the sensitivity of JEM-EUSO to this feature.

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