

Abstract Submitted
for the 4CF06 Meeting of
The American Physical Society

Monocular spectrum and the search for exotic events in the ultra high energy cosmic ray data of HiRes (The High Resolution Fly's Eye).
DOUGLAS RODRIGUEZ, University of Utah, HIGH RESOLUTION FLY'S EYE COLLABORATION — The High Resolution Fly's Eye (HiRes) experiment consists of two fluorescence detectors in search of the highest energy cosmic rays. These extremely energetic events can have 100 million times more energy than the highest energy achievable at man-made accelerators. The original Fly's Eye experiment observed one event with energy of 3.2×10^{20} eV. When such cosmic rays arrive at the Earth, they interact with the nitrogen and other gases of the upper atmosphere, generating a shower of secondary particles which in turn produce ultra-violet fluorescence light that can be viewed by our detectors. The data, collected between 5/1997 and 4/2006, has been analyzed in both monocular and stereo formats to study the energy spectrum above $10^{17.5}$ eV, incident particle composition, and source direction (anisotropy). I am analyzing the data from one HiRes site, HiRes-1, to produce a final monocular energy spectrum and to look for exotic events, particularly double showers. These are showers that could originate from one primary particle, but appear to the detectors as two separate coincident tracks. I will present this work as well as other uses for these analysis programs.

Douglas Rodriguez
University of Utah

Date submitted: 11 Sep 2006

Electronic form version 1.4