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**Cosmic Ray Composition Measurements by the HiRes Detector.** YULIA FEDOROVA, University of Utah, HIGH RESOLUTION FLY'S EYE (HIRES) COLLABORATION — Composition of the ultra high energy cosmic rays (UHECR) along with energy spectrum plays an important part in solving the mystery of the cosmic rays - their origin and acceleration mechanisms. Both, composition and energy spectrum, can be measured by observing extensive air showers (EAS) produced by high energy cosmic particles in the Earth's atmosphere. High Resolution Fly's Eye (HiRes) fluorescence detector is capable to measure the UV light emitted by EAS in stereo. The stereo observations significantly improve the resolution of such measurements and, hence, the resolution of the particle energy and shower maximum ( $X_{\max}$ ) reconstruction. The latter is usually serves as an indicator of the chemical composition of the incident cosmic ray particle. We present a study of the detector sensitivity to the CR characteristics (charge, mass, energy, arrival direction) based on the different hadronic interaction models and some real data analysis.

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