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HiRes and TA Spectrum Measurements

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HiRes was the first experiment to observe the GZK Cutoff. This was accomplished using the fluorescence technique with monocular reconstruction with a heavy reliance on Data/MC comparison techniques borrowed from particle physics. This result was later confirmed using stereo reconstruction and by the Pierre Auger Observatory. The HiRes result is consistent with the original motivation for the GZK Cutoff, protons interacting with the Cosmic Microwave Background Radiation to produce the delta resonance. Telescope Array has now also measured the ultra-high energy spectrum, showing remarkable agreement in detail with the HiRes measurements despite using significantly different observational methods, namely a hybrid measurement involving both surface detectors and fluorescence detectors. Both the use of a fluorescence energy scale and the reliance on Data/MC comparison techniques in determining the aperture link the TA and HiRes results.

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