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UHECR mass composition measurement at Telescope Array via stereoscopic observation THOMAS STROMAN, Univ of Utah, TELESCOPE ARRAY COLLABORATION — The masses of primary ultra-high-energy cosmic-ray (UHECR) nuclei cannot be measured directly on an individual basis, but constraints on the chemical composition can be inferred from the distributions of observable properties. The atmospheric slant depth at which a UHECR-induced extensive air shower reaches its maximum number of particles, $X_{\rm max}$, is particularly sensitive to the mass of the incident nucleus, occurring earlier in the shower's longitudinal development for heavier nuclei at a given energy. The Telescope Array in west-central Utah, the northern hemisphere's largest UHECR detector, is equipped for accurate $X_{\rm max}$ and energy measurements via stereoscopic fluorescence observation. Using data from seven years of operation, we will present $X_{\rm max}$ distributions at several energies $E > 10^{18.2}$ eV, and compare them to distributions predicted by detailed detector simulations under an assortment of assumed UHECR compositions and high-energy hadronic interaction models.

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