Abstract Submitted
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Bistatic radar detection of UHECRs at Telescope Array WILLIAM HANLON, University of Utah, TARA COLLABORATION, TELESCOPE ARRAY COLLABORATION — The Telescope Array radar (TARA) project will utilize a bistatic radar technique to detect radar echos from the ionization trails of ultra-high energy cosmic rays as they pass through the Earth's atmosphere. It is colocated with the Telescope Array, the largest cosmic ray observatory in the northern hemisphere, which will provide additional confirmation of the detection and properties of UHECRs via time coincidence. This method of observing cosmic rays has been unproven and is the largest and most ambitious attempt yet at UHECR detection utilizing an array of high gain yagi antennas broadcasting 8 MW of effective radiated power over the TA surface detector array. Recently TARA has been field testing a low power version of the experiment to gain expertise and study techniques to better utilize the radar method on a much larger scale. Soon TARA will begin high power operations and will be the first experiment to utilize this technique at such high power in conjunction with such a large cosmic ray detector. I will discuss the physics of UHECR detection via bistatic radar and the design and goals of the TARA project. I will also discuss recent tests of radar echo detection utilizing TA's electron light source which provides *in situ* small air showers used for TA calibration.

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