Contribution ID: **30** Type: **not specified**

The development of remote receiver stations for TARA

Tuesday 27 August 2013 15:00 (30 minutes)

The development remote receiver stations for TARA The Telescope Array RAdar (TARA) detector is based on a remote sensing technique known as bi-static radar that aims to achieve remote coverage over large portions of the Earth's surface in search of cosmic ray induced radio echoes. In conjunction with North America's largest cosmic ray observatory (The Telescope Array) in radio quiet western Utah, the radar project's pilot receiver and transmitter stations have been functional for just about two years, giving insight into the detect-ability of air shower radar echoes. Currently the receiver stations comprise an array of Log Periodic Dipole Antennas and among others an oscilloscope-based data acquisition system implemented for noise calibration. Our experiences thus far have given impetus for upgrades, including the deployment of solar and wind powered remote receiver stations. We discuss the development of these remote stations including the implementation of a down - conversion technique to detect the cosmic ray induced radio echoes.

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Session Classification: Ultra-high-energy messengers