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Anisotropy Search in Energy Distribution in the Northern Hemisphere Using the Telescope Array Surface Detector Data

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The Telescope Array (TA) experiment is located in the western desert of Utah, USA, and observes ultra high energy cosmic rays in the northern hemisphere. In the region of highest energies, the shape of cosmic ray energy spectrum may contain information on the source density distribution and chemical composition. In this study, using observed events with the Telescope Array surface detector, we search for directional differences in the shape of energy spectrum. Observed cosmic ray energy spectra are compared between two sky areas: one is the area near the super-galactic plane that has larger density of nearby objects, and other is the remainder. We report the result of those studies.

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