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Study of the microwave radiation from the electron beam at the Telescope Array site

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The Telescope Array experiment installed the electron accelerator in order to calibrate the fluorescence detector by shooting 40 MeV electrons into the atmosphere. This accelerator is also useful to investigate the radio detection techniques for the cosmic ray observation. Using this accelerator, four experimental groups have studied individual radio detection method at different frequency bands ranging from 50 MHz to 12 GHz. All of these experiments have observed the microwave radiation from the electron beam itself. We have studied the radiation by combining all the measured results and constructed a model of this phenomena. Details of the experiments, observation results and the comparisons with the model expectations will be presented.

Presentation type

poster

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