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U003-10 Room: Function Room A Time: May 28 12:00-12:15

Cosmic Research based on Antarctica

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We discuss observations of extrasolar meteors and cosmic ray sources as projects which can be realized with the PANSY radar. From the AMOR observation in New Zealand, it was suggested in 1996 that more than 1% of all radio meteors is of extrasolar origin. However, no independent observation has confirmed this suggestion. Meteor head echo observations which shall become possible with PANSY radar, we will be able to complete a southern sky survey of meteors with an accuracy comparable to optical measurements and fix the percentages of extrasolar meteors. Combining it with a northern sky survey of meteors which is currently under progress with the MU radar, we will obtain the whole sky coverage. In addition, we will be able to utilize the PANSY system for the detection of radar echoes from extensive air showers produced by ultra high energy cosmic rays (UHECR). While the traditional PAO ground observation of UHECRs has suggested that the Centaurus A radio galaxy in the southern sky is a UHECR source candidate, its statistical significance has not yet been established. The PANSY observation of UHECR echoes will help the future planning for the large-area radar measurments of UHECRs from the southern sky. We thank the following individuals for their collaboration: Kero Johan, Szasz Silla, Hideaki Miyamoto, Koji Nishimura, Masaki Nishimura, Hideto Yoshida, Hiroyuki Sagawa, Masami Fukushima, Zen' ichiro Kawasaki, Takashi Usui, and Noriryuki Yaguchi.

Keywords: radar observation, meteors, cosmic rays