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Current Status of Program of the Antarctic Syowa MST/IS Radar (PANSY)

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Since 2000, we have developed an MST/IS radar to be operational in the Antarctic and have made feasibility studies. After solving various significant problems such as treatment against strong winds, energy saving, weight reduction, and efficient construction method, we reached the final system design which is a VHF Doppler pulse radar with an active phased array consisting of 1045 Yagis. This project was authorized as a main observation plan for JARE (Japanese Antarctic Research Expedition) 52-57 in 2008, and finally funded by Japanese government in 2009. The radar construction started in late December, 2010. Here we will present hot results from this radar and discuss the uniqueness of the MST radar observation on the middle atmosphere research. The observation will continue for 13 years covering one solar cycle.

Keywords: Antarctic atmosphere, MST/IS radar, katabatic wind, ozone hole, gravity wave, polar mesospheric cloud