

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

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<http://www-pansy.nipr.ac.jp>

PANSY is a new plan to introduce the first MST (Mesosphere-Stratosphere-Troposphere) /IS (Incoherent Scatter) radar, which is a VHF monostatic pulse Doppler radar, in the Antarctic to Syowa Station as an important station observing the earth's environment with the aim to catch the climate change signals that the Antarctic atmosphere shows. This radar called the PANSY radar has a peak power of 1MW which allows us to observe the Antarctic atmosphere in the height region of 1-500 km. The interaction of the neutral atmosphere with the ionosphere and magnetosphere as well as the global-scale atmospheric circulation including the low and middle latitude regions are also targets of PANSY. Research Topics of PANSY are, 1. Dynamics and effects of atmospheric waves in the polar atmosphere, 2. Energy balance of global atmospheric circulation, 3. Transport and mixing processes of atmospheric minor constituents such as ozone and water vapor, 4. Physics of unique Antarctic atmospheric phenomena (PSCs, NLCs, aurorae), 5. Future prediction of ozone recovery, 6. Asymmetry of the Arctic and Antarctic atmosphere in terms of dynamical structure and phenomena, and 7. Effects of solar activity on the earth's climate.