

# Long-term meteor wind observations as by-products of routine measurements of PANSY radar at Syowa St. (69S), Antarctica

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PANSY radar at Syowa station (69S, 39E) has been conducting continuous mesosphere, stratosphere and troposphere observations as the only large aperture atmospheric radar in the Antarctic [Sato et al., 2014, JASTP]. These observation techniques are characterized by their three dimensional wind velocity measurement ability including vertical wind component with high time/height resolutions. The mesosphere observations, however, need ionized media in the mesosphere and are limited to day-light hours. To compensate this we developed an external interferometry system for reception, which can detect meteor echoes throughout a day in the height region of 70-95 km as purely by-products of the routine mesosphere measurements. A pioneering external meteor system attached to the MU radar, Japan, by Nakamura et al [1997, Radio Sci.] is a proto-type of the current system. The newly developed system, consisting of five Yagi antennas, has continuously been operating for more than two years since March 2021. The number of detected meteor echoes is comparable to or even more than that of commercial meteor radars. Inter-comparison with the routine mesosphere wind measurements and analyses of mean winds and atmospheric waves are to be made.

## References

- Sato et al., 2014, *J. Atmos. Sol.-Terr. Phys.*, 118, 2–15, doi:10.1016/j.jastp.2013.08.022.  
Nakamura et al., 1997, *Radio Sci.*, 32, 1203-1214.