

## The lower thermospheric winds derived from ESR observations.

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In order to understand the lower thermospheric dynamics in the polar region more deeply, we have analyzed wind data derived from EISCAT Svalbard radar (ESR) data obtained from September 1998 to November 2003. ESR located in Longyearbyen (78.1 deg N, 16.0 deg E) became possible to measure plasma parameters at the E-region heights in August 1998. We accumulated 61 days of wind data sets for studying of the lower thermospheric wind dynamics.

Researches of the lower thermospheric winds at latitudes of about 80 degrees north are rare. Van Eyken et al. [GRL, 27, 931-934, 2000] utilized 5 days of ESR data obtained in August 1999 to derive diurnal and semidiurnal tidal amplitudes and phase in the altitude range from 93 km to 120 km. They have found that the semidiurnal tidal amplitude of meridional component maximized at 105 km. In addition, they found evidence of quasi-2 day wave (with a period of 2.5 days) at 93 km. Wu et al. [JASTP, 65, 971-978, 2003] analyzed FPI wind data sets obtained Eureka (81.1 deg N) and Resolut (74.9 deg N) as well as EISCAT UHF radar (at Tromsø, 69.6 deg N) data, and suggested that non-migrating semidiurnal tide with zonal wave number of 1 exists at these high latitudes.

Based on 61 days (winter 20 days, summer 10 days, equinox 31 days) of wind data sets derived from ESR data, we have investigated seasonal variations of mean wind as well as tidal winds. We will report these results and show comparison with those observed at Tromsø (69.6 degrees north).