The characteristics of atmospheric tides and planetary waves observed by EISCAT Svalbard radar

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The neutral (meridional) wind variations from 93 km to 120 km height are analyzed by using the EISCAT Svalbard Radar(ESR Radar) data in August, 1998.

(1) The vertical structures of the phase and the amplitude of tidal (diurnal, semidiurnal, terdiurnal) components at 78.2 N were obtained. Their vertical wave lengths were estimated. (2)10-hours variation can be seen by Lomb-Scargle periodogram analysis. (3)The vertical structures of the phase and the amplitude of tidal components at 78.2 N were compared with those observed at 69.6 N. (4)The comparison between the observations and a model(GSWM) was made. (5)The effect of the convection electric field on the neutral wind variations was investigated.