# LOWER THERMOSPHERE WIND REGIME ACCORDING TO RADIOMETEOR MEASUREMENTS IN KAZAN

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Research in dynamic processess in the lower thermosphere has been carried out in Kazan using the meteor radar facilities of the Kazan State University under the MAP-GLOBMET international program.

This report presents experimental data on seasonal dependences of the wind for anomalous winter circulation periods, spring and autumn reconstructions and stable summer circulation from observations conducted in 1978-1984. Figures 1 and 2 show the prevailing wind parameters: zonal $A_{QEW}$ and meridional $A_{ONS}$ component amplitudes and $A_o$ and azimuth of the prevailing wind vector. Figures 3, 4, and 5 present the values of semidiurnal zonal $A_{2EW}$ and meridional $A_{2NS}$ tidal components, their correlation coefficient $\rho$ and zonal component amplitude maximum time $t_2$.

According to these observations, there are the following main regularities. The anomalous winter circulation period is characterized by frequent reversals of both zonal and meridional wind components, semidiurnal tidal amplitude disturbances and by increased random wind fluctuations. The summer period has a stable circulation with minimal turbulent motion. During the periods of spring and autumn reconstruction, transition from one to the other of the two main systems of circulation (summer and winter) is observed. In the meteor zone of the lower thermosphere a more pronounced zonal circulation is observed. The relation of prevailing wind zonal and meridional components amplitudes $U_o/V_o$ varies from about 7 to 75% in different years and seasons. The greatest interannual scatter of prevailing wind parameters is observed in winter, spring and autumn periods, interannual scatter being more pronounced for the zonal component.

In semidiurnal influx behavior there is observed the tendency of amplitude increase from summer to winter, common for all the considered years of observations when the values $A_{2EW}$, $A_{2NS}$ change from about 10 mps to 30 mps, correspondingly. The greatest differences of disturbing processes affecting the semidiurnal influx are observed during the spring and winter period and they are manifested in seasonal variation of the parameter $\rho$ and maximum time differences of semidiurnal influx zonal and meridional component.

Meteorological scale disturbances are observed in time variations of all wind parameters in meteor altitudes for all seasons, the seasonal wind parameters changes exceeding interannual scattering.

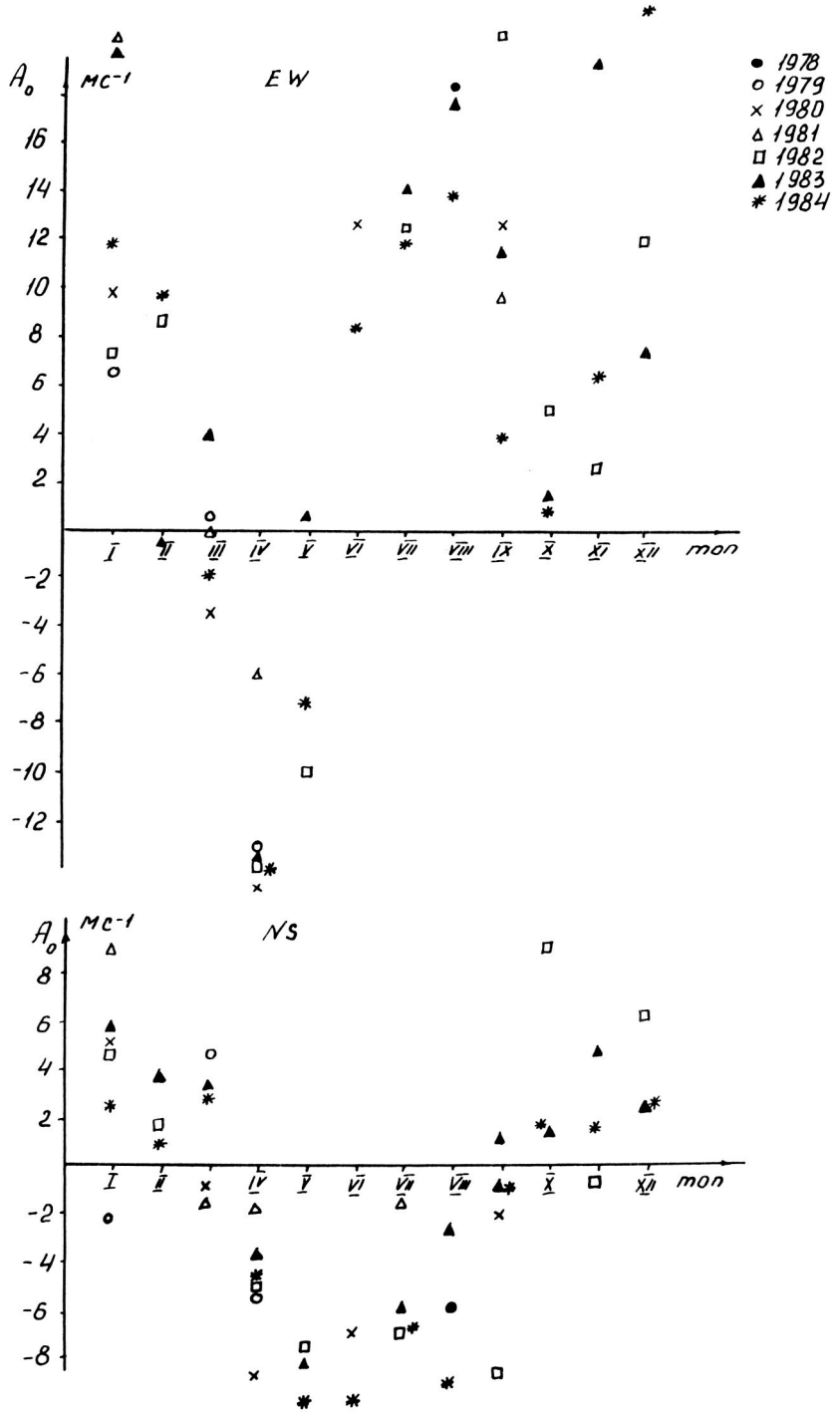


Fig. 1 Seasonal and interannual variations of the zonal $A_{QEW}$ and meridional $A_{OWNS}$ components of the prevailing wind.

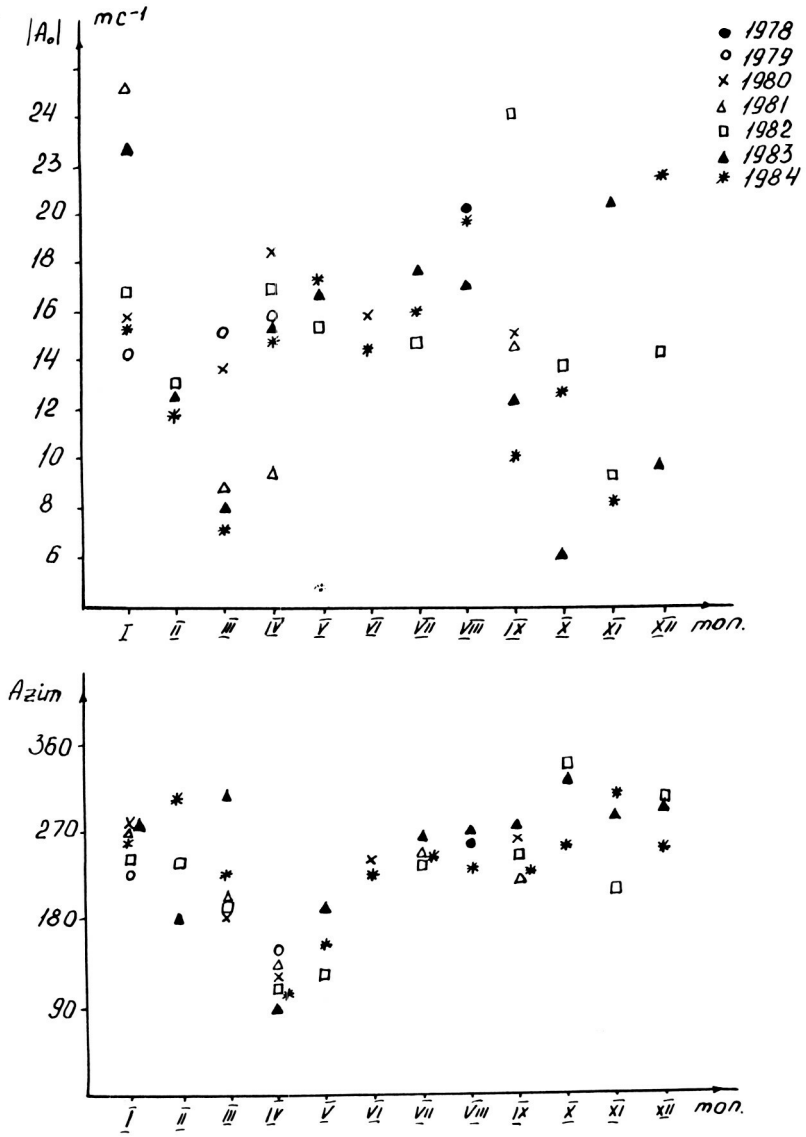


Fig. 2 Seasonal and interannual variations of the amplitude $A_o$ and azimuth of the prevailing wind vector.

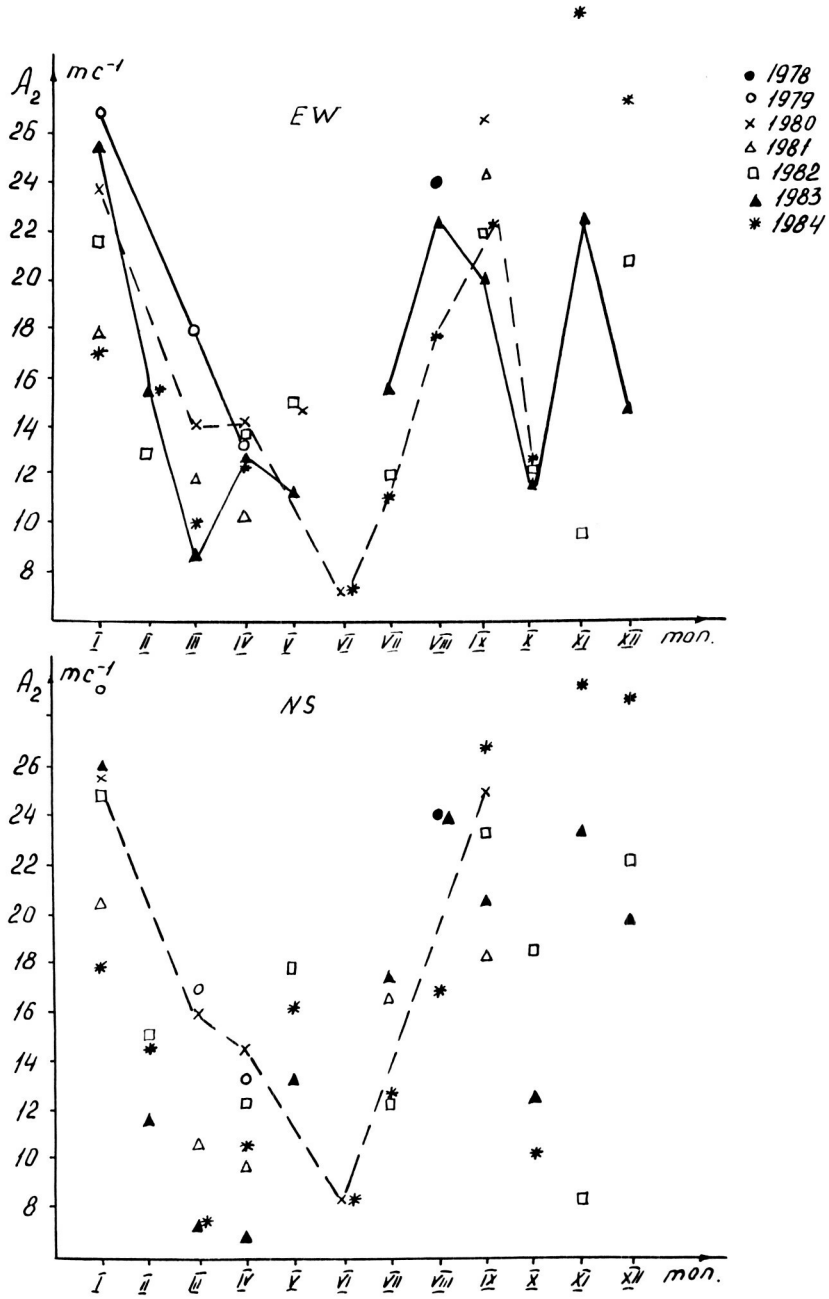


Fig. 3 Seasonal and interannual amplitude variations of the zonal $A_{2EW}$ and meridional $A_{2NS}$ components of the semidiurnal tide.

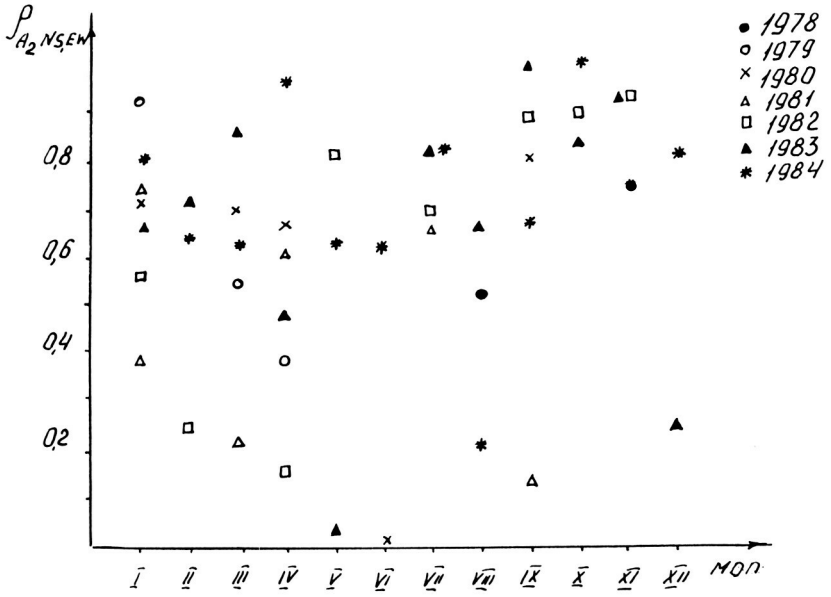


Fig. 4 Seasonal and interannual variations of the semidiurnal tidal zonal and meridional component correlation coefficient.

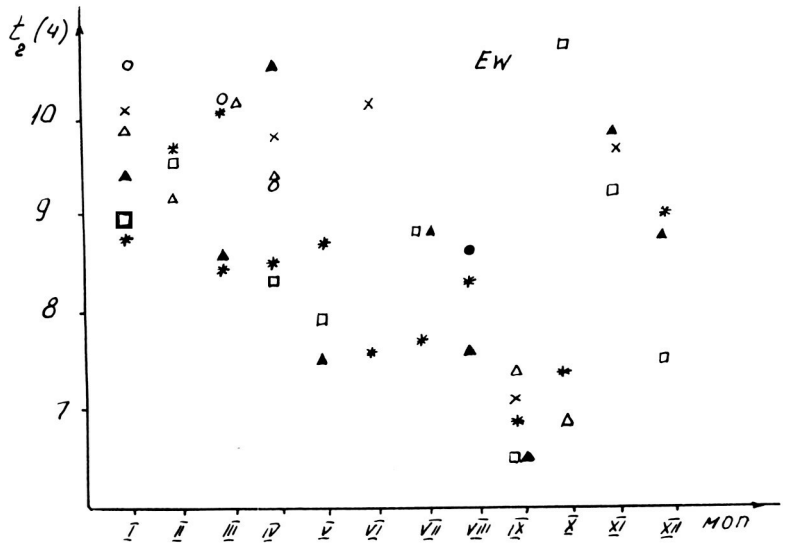


Fig. 5 Seasonal and interannual variations of the time of maximum amplitude of the zonal component of the semidiurnal tide.