**Local and regional ionospheric disturbances during intense meteorological events in the Kaliningrad region in 2014-2018**

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Response of the ionosphere on the intense meteorological events in the Kaliningrad region are investigated for the period of 2014–2018. Events with the wind speed reached 17 m/s and more were selected for the analysis. Hourly measurements of the critical frequency of the F2-layer (foF2) obtained from the vertical sounding, as well as measurements of the total electron content (TEC) from the own GNSS receiver were used. As a reference sources, the data of the meteorological station in Olsztyn and the International GNSS Service station in Lamkowko were taken into account. The parameter deviations were calculated as the relative perturbations from the background values estimated as the sliding median with the window of 13 days before and after the event. Days when Kp-index $\geq 3$ and Dst-index $< -20$ nT were excluded from consideration to eliminate the impact of geomagnetic activity.

It is shown that TEC perturbations with the magnitude more than 2 standard deviations (about 50% relative median values) were observed in 3 of 10 events that occurred at weak geomagnetic activity. In 4 cases TEC disturbances ranged from 1.5 to 2 standard deviations, and three events showed no significant changes in TEC. The strongest deviations were recorded at low atmospheric pressure. Disturbances of foF2 were usually less pronounced and estimated as 1.6–2.2 standard deviations. Both positive (enhancements in TEC and foF2 relative to the background values) and negative (reduction in the values) deviations were detected. The lifetime of disturbances ranged from 1.5 to 3 hours.

Examples are presented where TEC perturbations in the near-Equatorial region have been detected simultaneously with perturbations above Kaliningrad region or on the next day. It is assumed that during meteorological storms the processes of excitation of acoustic-gravitational waves (AGW) generation in the lower atmosphere are amplified. AGWs propagation into the upper atmosphere and their dissipation at height of about 180 km leads to the perturbation of the thermosphere on the spatio-temporal scales determined by the duration and spatial dimensions of the meteorologicaly disturbed area. Such large-scale perturbations of the thermosphere affect circulation and electrodynamic processes in the thermosphere and ionosphere.

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