

## The possibility of forecasting sporadic E layer appearance.

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The statistic concerning the accordance of the forecast of sporadic E layer appearance on the basis of the magnetic eta index is presented. The eta index is defined as the square root of a ratio of the energy of the external part of the vertical component to that of the horizontal components. The values of eta typical ranged between 0 and 0.1 sometimes exceeds 1 or even higher values which means that the changes of the vertical component of magnetic field is larger than the changes of the horizontal magnetic field components. In most cases when eta index indicate some magnetic disturbances other magnetic indices (i.e. Kp, Dst) inform about quiet conditions. The occurrence of eta variations in quiet days suggests that the source of these magnetic disturbances is in the ionosphere. Our previous results show the increase of eta value emerges 1-2 hours before the sporadic E layer appearance. The analysis was performed for 8 pairs of ionosondes and magnetic observatories in Europe. The smaller distance between the magnetic and ionospheric observatories the better correlation between the eta index and the sporadic E layer occurrence. The previous work was performed for 3 years of prolonged solar minimum. This work presents the statistics for years 2011-2013 for Warsaw ionosonde and Belsk Magnetic Observatory. Real time magnetic data from Belsk give the possibility for on-line calculation of magnetic eta index and having information about ionospheric drifts. The autocovariance method for forecasting of the changes of eta index and in this connection for forecasting of sporadic E layer appearance was implemented. The study of the results of forecasting the sporadic E layer appearance will be presented.