COMPARISON OF SIMULATION RESULTS OF THE IONOSPHERIC EFFECTS OF GEOMAGNETIC STORM SEQUENCE ON SEPTEMBER, 9-14, 2005 WITH EXPERIMENTAL DATA

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In the given work the ionospheric effects of sequence of geomagnetic storms on September, 9-14, 2005 are considered. We have carried out the numerical calculations of various ionospheric parameter behavior at the different mid- and low-latitude stations for the considered period of time with use of the Global Self-consistent Model of the Thermosphere, Ionosphere and Protonosphere (GSM TIP), developed in WD IZMIRAN. Under carrying out the calculations of the background values of the ionospheric parameters from 06:00 UT on September 9, 2005 till 24:00 UT on September 14, 2005 the change from day to day of solar activity level parameter F10.7 was considered only. Under carrying out the calculation of the disturbed values of the ionospheric parameters in this time period a potential difference through polar caps, particle precipitations and field aligned currents of the second region were set as function from Kp-index of geomagnetic activity. Thus the displacement of field aligned currents of the second region to the lower latitudes, the displacement of particle precipitation maximum into the morning sector and a time delay ~30 min of variations of particle precipitation and field aligned currents of the second region relatively to variations of the potential difference through polar caps was considered. The comparison of calculation results with the experimental data obtained at stations Yakutsk, Irkutsk, Millstone Hill and Arecibo is carried out.
The investigation is supported by the Grant of the Russian Foundation for Basic Research No.08-05-00274.

geomagnetic storm, ionosphere, numerical modeling

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