ABSORPTION OF HF RADIOWAVES IN HIGH-LATITUDE IONOSPHERE DURING GEOMAGNETIC DISTURBANCES

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The results of HF radio signal absorption observations carried out during geomagnetic disturbances of November, 2001 are considered. The observations were conducted simultaneously at radiophysical stations located in Yakutsk (lat = 62.0, long= 129.8) and Zhigansk (lat = 66.8, long = 123.4). The operative forecast of a solar activity extreme developments was carried out using the data of a near space radiation monitoring provided by network of ground stations of cosmic rays - neutron monitors (http://teor.ysn.ru/rswi).
The measurements during world magnetic storms showed that on November 6 and 24, 2001, the forecasting disturbances of short-wave radio communications took place. They were expressed in following:
- Sudden and total absorption of a signal on November 6, 2001 at radiolines of Syrdakh (about 30 km to a north from Yakutsk) - Yakutsk and Magadan -Yakutsk took place simultaneously at 11.06 LT, approximately in seven hours after disturbance predictor recording by the predicting system;
- The absorption of a signal on November 24, 2001 at radioline Yakutsk - Zhigansk began at 15.33 LT, and at radioline of Syrdakh - Yakutsk at 15.57 LT, i.e. the front of an ionosphere disturbance moved from North to South with the velocity about 220 m/s;
- It is established that before absorption of radio signal the intense Doppler shifts of frequency are observed showing the re-organisation of ionospheric communication channel.
During events on November 6 and 24, the geomagnetic stations registered the sharp negative bays in a horizontal component of a geomagnetic field that confirms the forecast given by the predicting system.

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