Russian National Ionospheric Network

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The task of deploying and operating the State Observing Ionospheric Network is assigned to the specially authorized federal executive authority of Russia in the field of hydrometeorology and related fields - the Federal Service for Hydrometeorology and Environmental Monitoring - Roshydromet. Fedorov Institute of Applied Geophysics (FIAG) among the various tasks assigned to the institute by Roshydromet is responsible for the real time Space Weather monitoring, including the monitoring of the ionosphere.

The state observational ionospheric network includes ionosondes of vertical radiosonde, ionospheres of oblique radiosonde, riometers, and network of high-orbit and low-orbital radiotomography. Institute also provise the monitoring of near space plasma parameters onboard the METEOR-M low orbit satellites constellation and geostationary satellites ELECTRO.

The network of ionosondes of vertical radiosounding consists of Russian ionosondes "Parus-A" installed at mid-latitude stations: Moscow, Electrougli, Kaliningrad, Novosibirsk, Salekhard, Podkamennaya Tunguska, Khabarovsk, Petropavlovsk-Kamchatsky and Rostov. Canadian ionosondes "CADI" installed at high-latitude stations: Lovozero, Salekhard, Amderma, Dixon, Tiksi, Pevek. In addition, the network includes a Tomion ionospheric sounder specialized in scientific research, created by the Tomsk University, as well as the Augur ionosonde, which is still functioning, installed at the Electrougli station near Moscow.

It should be noted that except the State Network there exist the network of ionosondes maintained by academic and educational institutions, such as IZMIRAN, Institute of Solar-Terrestrial Physics, Kazan University and others. This network has different models of ionosondes, mainly Digisondes, but also their own production, and chirp ionosondes for oblique sounding.

The data of operational observations of FIAG are received by the Institute using the specialized network of geophysical data transmission of Roshydromet.

The data of operational ionospheric observations are assimilated by the program for monitoring and forecasting the ionospheric situation named SIMP which gives possibility to build real-time maps of the ionospheric parameters and provide the radio wave propagation forecast.