

The Project of Monitoring the Ionosphere over Russian Federation by means of Digital FMCW Ionosondes Network

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Abstract

For monitoring the current ionospheric conditions over Russian Federation area in quasi real-time we offer to use modern digital FMCW vertical incidence ionospheric stations capable to receive oblique incidence signals during vertical sounding session.

For determination of ionospheric stations locations (Fig. 1) the spatial correlation criterion was used, which is measure how much deviations from regular variation (defined by model or median) at one point of space are differed from other. Measure function of spatial correlation is radius of spatial correlation which determined as range where spatial correlation function goes down to 0.7.

Newness of such ionospheric network consists in combining capabilities of vertical incidence and oblique incidence ionosondes. It becomes possible because of operative technique for reconstruction ionospheric parameters at path midpoint and appearance of modern digital multichannel receivers which were examined by few continuous experimental works in Russian Federation.

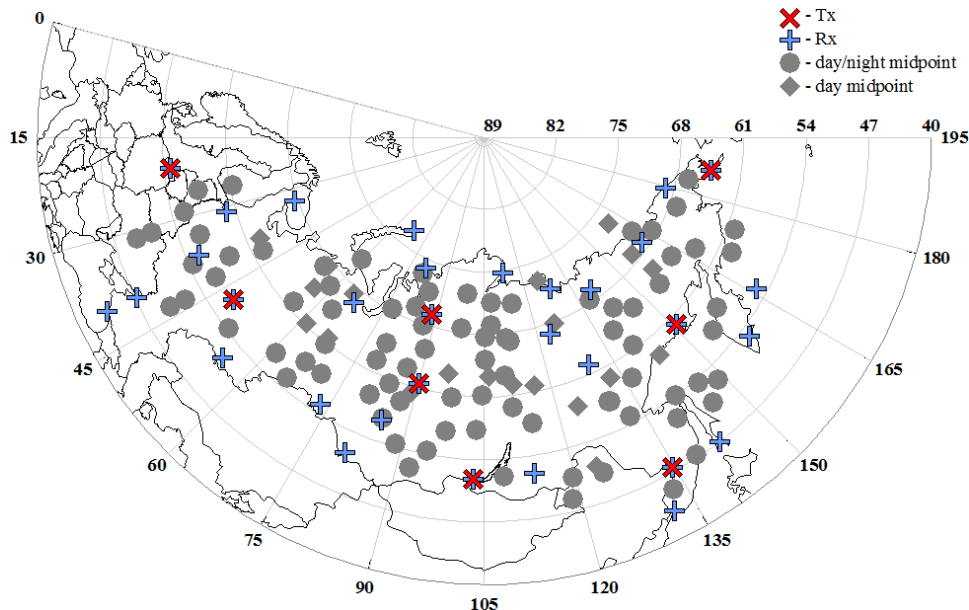


Figure 1. Geographic distribution of ionosondes and path midpoints (project).