



The comparison of electronic density profiles derived by incoherent scatter radar and ionosonde data.

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The Institute of ionosphere radiophisic observatory located near Kharkiv, Ukraine (geographic coordinates: 49.6N, 36.3E). It consists of incoherent scatter radar and ionosonde. The radar operates with 100-m zenith parabolic antenna at 158 MHz with peak transmitted power of ~2.0 MW. The pulse ionosonde operates with transmitted power of 30 KW and has used for peak electron density calibration. The equipment and measurement technique improvement by authors allows obtaining electron density profiles with 10- 20-km resolution in range ~100–400 km and reliable ionograms. The ionograms have been manually scaled and then inverted to retrieve the electron density profiles. The unobservable parts were calculated by IRI2007 model. For comparative analysis we used IS radar and ionosonde data corresponded to the quiet geomagnetic conditions for 3 seasons of 2008-2009 year. Additionally we used data provided by Pruhonice ionosonde, that located at same latitude with Kharkiv ISR. The comparison indicates that usually ionosonde profiles are in a good agreement with IS radar's profiles below the F2 layer peak especially when absent unobservable parts and bottom border of ionosphere clearly expressed on ionograms.