Modelling the ionosphere Alfven resonator on basis of the IRI model and observed ionosphere parameters

N.V. Semenova, A.G. Yahnin, A.A. Ostapenko, B.Z. Khudukon, R.Y. Yurik

Polar Geophysical Institute, Apatity/Murmansk, Russia

The resonance structure in spectra of the electromagnetic noise in the frequency range of 0.1-4 Hz is believed to be an observable signature of the ionospheric Alfven resonator. To model this spectral resonance structure (SRS) one can use ionosphere models or/and observed ionospheric parameters. We compared observations of the SRS with predictions of the IRI-95 model and found that use of the standard ionosphere model may lead to significant disagreement with observations. Better resemblance of calculated parameters and SRS observations is achieved if to use the IRI model adopted to the ionosonde observations of the maximal electron density in the F-region. A correlation is also found between the diurnal behavior of the observed SRS frequency scale and the upper ionosphere dynamics reconstructed on the basis of the ionospheric tomography technique.
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