

Comparison between the IRI topside plasma distribution model and observations

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In view of the fact that IRI (International Reference Ionosphere) model has been used as a de-facto standard of the ionosphere, we examined its validity at the topside ionosphere.

The thirty five years of the monthly median values of NmF2 obtained from the low to mid latitude ionosonde observations in Japan are compared with the IRI model.

It is found that in average the model predictions agree well with the observations within about 30% errors.

On the other hand, the IRI predictions of the upper topside plasma densities around 1000 km altitude become consistently higher than the satellite observations from lower to higher latitudes during high solar activity. Need for appropriate improvement is emphasized.

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