



Low latitudes topside in NeQuick

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The NeQuick electron density model of the ionosphere is designed for trans-ionospheric propagation applications. The model topside has been revised on the basis of ISIS-2 topside sounder profiles, producing a new formulation of its empirical shape parameter. Comparisons between experimental slant TEC data and values modeled using both versions of NeQuick topside showed that in general we have obtained a distinct improvement. However, during some months of the year and at low latitudes, the new topside formulation doesn't produce improvements on the slant TEC estimates. We discuss the likely reasons for this behaviour including assessment of merits and shortcomings of the ISIS-2 data in low latitudes. The topside sounder on Intercosmos 19 satellite extensively sounded the equatorial region during a period of high solar activity, which was less covered by ISIS-2. This paper presents comparisons of NeQuick and topside sounders profiles at low latitudes using Intercosmos 19 satellite data and we discuss possibilities of further improvement if the low latitudes behaviour of NeQuick.