



A new version of the NeQuick ionosphere electron density model

B. Nava, P. Coïsson and S.M. Radicella

The Abdus Salam International Centre for Theoretical Physics, Italy
(bnava@ictp.it / Phone: +39-0402240340)

NeQuick is a three dimensional and time dependent ionospheric electron density model developed at the Aeronomy and Radiopropagation Laboratory of the Abdus Salam International Centre for Theoretical Physics (ICTP) - Trieste, Italy and at the Institute for Geophysics, Astrophysics and Meteorology of the University of Graz, Austria. It is a quick-run model particularly tailored for trans-ionospheric applications that allows to calculate the electron concentration at any given location in the ionosphere and thus the Total Electron Content (TEC) along any ground-to-satellite ray-path by means of numerical integration. Taking advantage of the increasing amount of available data, the model formulation is continuously updated to improve NeQuick capabilities to provide representations of the ionosphere at global scales. Recently, major changes have been introduced in the model topside formulation and important modifications have also been introduced in the bottomside description. In addition, specific revisions have been applied to the computer package associated to NeQuick in order to improve its computational efficiency. It has therefore been considered appropriate to finalize all the model developments in a new version of the NeQuick. In the present work the main features of NeQuick 2 are illustrated and some results related to validation tests are reported.