

TS 16457: International Reference Ionosphere and Extensions to the Plasmasphere

D. Bilitza (1), T. Gulyaeva (2,3), B. Reinisch (4)

(1) Raytheon IIS, GSFC, Greenbelt, Maryland, USA, (2) IZMIRAN, Moscow Region, Russia, (3) Space Research Center, Warsaw, Poland, (4) University of Massachusetts, Center for Atmospheric Research, Lowell, USA,

The International Standardization Organization project, ISO Technical Specification TS-16457, provides guidelines for specifying the global distribution of ionospheric parameters and their extension into the plasmasphere. The model recommended for this purpose is the International Reference Ionosphere (IRI). IRI is an international project sponsored by the Committee on Space Research (COSPAR) and the International Union of Radio Science (URSI) and it has become the de facto standard for ionospheric parameters. For given solar activity, location, time, and date, IRI describes the monthly averages of electron density, electron temperature, ion temperature, and the percentage of O^+ , H^+ , He^+ , N^+ , NO^+ , O_2^+ , and Cluster ions in the altitude range from 50 km to 1500 km. In addition IRI provides the electron content by numerically integrating over the electron density height profile within the user-provided integral boundaries. IRI is a climatological model describing monthly average conditions. The major data sources for building the IRI model are the worldwide network of ionosondes, the powerful incoherent scatter radars, the topside sounders and in situ instruments flown on several satellites and rockets. This talk will report about recent activities within the IRI Working Group and the resulting improvements of the IRI model with special emphasis on extensions to the plasmasphere. We will discuss results from the 2005 IRI Workshop in Tortosa, Spain and present the newest version of the IRI model