



USER

Username

Password

Remember me

Login

FAST TRACK

- ▶ Vol
56,
Fast
Track
1,
2013
- ▶ Vol
57,
Fast
Track
2,
2014
- ▶ Vol
58,
Fast

ARTICLE TOOLS



Indexing
metadata



How to
cite item



Email
this article
(Login
required)



Email
the author
(Login
required)

ABOUT THE AUTHORS

P. Coisson
The Abdus
Salam
International
Centre for
Theoretical

Physics
(ICTP),
Trieste,
Italy

*S. M.
Radicella*
The Abdus
Salam
International
Centre for
Theoretical
Physics
(ICTP),
Trieste,
Italy

KEYWORDS

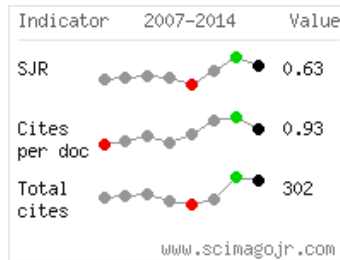
Earthquake
GPS
Historical
seismology
Ionosphere
Irpinia
earthquake
Italy Mt.
Etna
Seismic
hazard
Seismic
hazard
assessment
UN/IDNDR

earthquake
earthquakes
historical
earthquakes
historical
seismology
ionosphere
magnetic
anomalies
paleoseismology
radon
seismic
hazard
seismicity
seismology

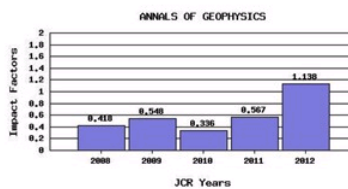
Powered
by OJS,
engineered
and
maintained
by
CINECA.

SCIMAGO
JOURNAL
&
COUNTRY

RANK



5 YEARS IMPACT FACTOR



NOTIFICATIONS

- ▶ View
- ▶ Subscribe

Ionospheric topside models compared with experimental electron density profiles

P. Coïsson, S. M. Radicella

Abstract

Recently an increasing number of topside electron density profiles has been made available to the scientific community on the Internet. These data are important for ionospheric modeling purposes, since the experimental information on the electron density above the ionosphere maximum of ionization is very scarce. The present work compares NeQuick and IRI models with the topside electron density profiles available in the databases of the ISIS2, IK19 and Cosmos 1809 satellites. Experimental electron content from the F2 peak up to satellite height and electron densities at fixed heights above the peak have been compared under a wide range of different conditions. The analysis performed points out the behavior of the models and the improvements needed to be assessed to have a better reproduction of the experimental results. NeQuick topside is a modified Epstein layer, with thickness parameter determined by an empirical relation. It appears that its performance is strongly affected by this parameter, indicating the need for improvements of its formulation. IRI topside is based on Booker's approach to consider two parts with constant height gradients. It appears that this formulation leads to an overestimation of the electron density in the upper part of the profiles, and overestimation of TEC.

Keywords

topside ionosphere; electron density models; topside soundings

Full Text - Views: 830

[PDF](#)

Identifiers

- DOI: [10.4401/ag-3214](https://doi.org/10.4401/ag-3214)



This work is licensed under a [Creative Commons Attribution 3.0 License](#).

Published by INGV, Istituto Nazionale di Geofisica e Vulcanologia -

ISSN: 2037-416X