

**Volume 13
Number 3
March
1993**

Advances in Space Research

ISSN 0273-1177

ADVANCES IN GLOBAL/REGIONAL DESCRIPTIONS OF IONOSPHERIC PARAMETERS

Edited by **K. Rawer**
 W. R. Piggott
 A. K. Paul



Pergamon Press

CONTENTS

Section 1. Fundamentals

International Reference Ionosphere – Past, Present, and Future:	
I. Electron Density	3
<i>D. Bilitza, K. Rawer, L. Bossy and T. Gulyaeva</i>	
International Reference Ionosphere – Past, Present, and Future:	
II. Plasma Temperatures, Ion Composition and Ion Drift	15
<i>D. Bilitza, K. Rawer, L. Bossy and T. Gulyaeva</i>	
Indices of Ionospheric Response to Solar-Cycle Epoch	25
<i>P. A. Bradley</i>	
Indices of Geomagnetic Variations and Ionospheric Disturbances	29
<i>T. L. Gulyaeva</i>	
Generation of Electron Density Models with Continuous Gradients from Discrete Data	33
<i>A. K. Paul</i>	
Analysis of Electron Density Profiles in the Vicinity of foF2	39
<i>L. Bossy</i>	

Section 2. Regional Mapping

Regional Ionospheric Mapping	45
<i>B. W. Reinisch, X. Huang and G. S. Sales</i>	
Some Aspects of COST 238 (Prime) Studies Directed Towards Improved Regional Maps of foF2 and M(3000)F2 over Europe	49
<i>S. M. Harrison and M. I. Dick</i>	
Behaviour of foF2 over European Mid-Latitudes (Figures 1–3 in Appendix)	53
<i>S. S. Kouris, P. Dominici and B. Zolesi</i>	
Comparison of IRI with the Ionosphere over China	57
<i>K. Dai, K. Quan, F. Luo and R. Liu</i>	

Section 3. Climatology

Climate Change in the Ionosphere Parameters Dependent on Solar and Geomagnetic Activity (Tables 1–3 in Appendix B)	63
<i>T. L. Gulyaeva and R. A. Gulyaev</i>	

Updating the IRI Ionospheric Model for Effects of Substorms <i>P. V. Kishcha, V. M. Shashunkina and E. E. Goncharova</i>	67
On the Dependence of Monthly Median foF2 on Solar Activity Indices <i>A. V. Mikhailov</i>	71
On the Relationship Between Ionospheric Characteristics and Solar Indices <i>N. Ortiz de Adler, R. G. Ezquer and J. R. Manzano</i>	75
Section 4. Plasma Temperatures and Composition	
Describing the High-Energy Tail of the Ionospheric Electron Population <i>K. Rawer</i>	81
Comparison of Ion Composition Data with Empirical Models (Comment) (Tables and Figures in Appendix C) <i>W. Köhnlein</i>	85
Section 5. Lower Ionosphere	
Conclusions Obtained from an Absorption Measurement Campaign in Spain <i>H.-U. Widdel</i>	89
An Empirical Model of the Non-Auroral D-Region <i>M. Friedrich and K. M. Torkar</i>	97
Modelling the Undisturbed High-Latitude E Region <i>S. Kirkwood</i>	101
Twilight and Night-Time Representations of foE for the IRI <i>P. A. Bradley</i>	105
Section 6. Appendices	
Appendix A	117
Appendix B	121
Appendix C	125
Author Index	133