



## TABLE OF CONTENTS

### *(Power Line Radiation and Its Coupling to the Ionosphere and Magnetosphere)*

R. G. STRUŽAK / Preface	5
F. L. H. M. STUMPERS / Introductory Remarks	7
H. G. BOOKER / A Simplified Theory of ELF Propagation in the Earth-Ionosphere Transmission Line	9
H. KIKUCHI / Overview of Power-Line Radiation and Its Coupling to the Ionosphere and Magnetosphere	33
A. PILATOWICZ / Radio Noise Level Due to Electric Power Lines and Its Relation to Line Design Parameters	43
A. UMBERT, J. FONTAINE, and J. P. PLUMEY / A Computing Model and Its Experimental Testing for an Evaluation of Electromagnetic Interferences Created by Interfering Circuits on Transmission or High-Voltage Lines above a Dissipative Ground	49
H. KIKUCHI / Power Line Transmission and Radiation	59
V. V. KAPITONOV / Assessment of Radio Interference from Power Lines Taking into Account Their Fluctuations in Time and Space (Abstract)	81
C. POLK / Natural and Man-Made Noise in the Earth-Ionosphere Cavity at Extremely Low Frequencies (Schumann Resonances and Man-Made 'Inter- ference')	83
A. B. BEHROOZI-TOOSI and H. G. BOOKER / Application of a Simplified Theory of ELF Propagation to a Simplified Worldwide Model of the Ionosphere	91
C. G. PARK, R. A. HELLIWELL, and F. LEFEUVRE / Ground Observations of Power Line Radiation Coupled to the Ionosphere and Magnetosphere	131
A. R. L. TATNALL, J. P. MATTHEWS, K. BULLOUGH, and T. R. KAISER / Power-Line Harmonic Radiation and the Electron Slot	139
K. BULLOUGH / Satellite Observations of Power Line Harmonic Radiation	175
R. PIRJOLA / Induction in Power Transmission Lines during Geomagnetic Disturbances	185
W. M. BOERNER, J. B. COLE, W. R. GODDARD, M. Z. TARNAWECKY, L. SHAFAI, and D. H. HALL / Impacts of Solar and Auroral Storms on Power Line Systems	195
H. KIKUCHI / Editor's Comments and Acknowledgements	207