

1. Record Nr.	UNINA9910144587203321
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Titolo	Radio wave propagation in the marine boundary layer [[electronic resource] /] / Alexander Kukushkin
Pubbl/distr/stampa	Weinheim, : Wiley-VCH [Chichester, : John Wiley], c2004
ISBN	1-280-51984-3 9786610519842 3-527-60381-6 3-527-60455-3
Descrizione fisica	1 online resource (207 p.)
Disciplina	621.38411
Soggetti	Radio wave propagation - Mathematical models Radio wave propagation - Computer simulation Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Radio Wave Propagation in the Marine Boundary Layer; Preface; Contents; 1 Atmospheric Boundary Layer and Basics of the Propagation Mechanisms; 1.1 Standard Model of the Troposphere; 1.2 Non-standard Mechanisms of Propagation; 1.2.1 Evaporation Duct; 1.2.2 Elevated M-inversion; 1.3 Random Component of Dielectric Permittivity; 1.3.1 Locally Uniform Fluctuations; References; 2 Parabolic Approximation to the Wave Equation; 2.1 Analytical Methods in the Problems of Wave Propagation in a Stratified and Random Medium 2.2 Parabolic Approximation to a Wave Equation in a Stratified Troposphere Filled with Turbulent Fluctuations of the Refractive Index2. 3 Green Function for a Parabolic Equation in a Stratified Medium; 2.4 Feynman Path Integrals in the Problems of Wave Propagation in Random Media; 2.5 Numerical Methods of Parabolic Equations; 2.6 Basics of Focks Theory; 2.7 Focks Theory of the Evaporation Duct; References; 3 Wave Field Fluctuations in Random Media over a Boundary Interface; 3.1 Reflection Formulas for the Wave Field in a Random Medium over an Ideally Reflective Boundary

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4.2.5 Linear-Logarithmic Profile at Heights Close to the Sea Surface4.3 Spectrum of Normal Waves in an Evaporation Duct; 4.4 Coherence Function in a Random and Non-uniform Atmosphere; 4.4.1 Approximate Extraction of the Eigenwave of the Discrete Spectrum in the Presence of an Evaporation Duct; 4.4.2 Equations for the Coherence Function; 4.5 Excitation of Waves in a Continuous Spectrum in a Statistically Inhomogeneous Evaporation Duct; 4.6 Evaporation Duct with Two Trapped Modes; References; 5 Impact of Elevated M-inversions on the UHF/EHF Field Propagation beyond the Horizon
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6.3 Scattering of a Diffracted Field on the Turbulent Fluctuations in the Refractive Index

Sommario/riassunto

Based on his many years of professional experience at leading companies in communications technology, the author describes an analytical solution for wave propagation over the sea surface in an atmospheric boundary layer. His approach allows the detailed analysis of combined effects of diffraction, refraction and scattering in random media. While specific applications covered are targeted at radio wave propagation over the sea surface, a similar approach is applicable to many problems in underwater acoustics, seismology, solid matter physics and astrophysics.
