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Sommario/riassunto

Internationally recognized authority on Differential Forms, Ismo V. Lindell, presents the tools for analyzing electromagnetic problems with special attention on electromagnetic media. The tools are applicable in basic studies of metamaterials and metasurfaces. This book deals with electromagnetic equations in terms of differential forms and exterior calculus (multivectors, multiforms and dyadics), allowing a coordinate-free way of doing analytic work. Also, applying four-dimensional formalism equations and expressions can be handled in a more compact form than through the conventional three-dimensional formalism. The content focuses on electromagnetic media by defining medium classes in several different ways and analyzing wave propagation in them. This book also deals with generation of boundary surfaces in terms of special medium interfaces. The introductory material on various types of dyadics is extended to include an appendix of operational rules ready for application. . Presents the tools for analyzing electromagnetic problems with special attention on electromagnetic media . Includes solutions to end of chapter problems within the appendix . Written by an internationally recognized expert on Differential Forms Multiforms, Dyadics and Electromagnetic Media is mainly focused on applying the formalism to the analysis of electromagnetic media as inspired by the ongoing engineering interest in constructing novel metamaterials and metaboundaries. Ismo V. Lindell is a Professor Emeritus in the Department of Radio Science and Engineering, in the School of Electrical Engineering at the Aalto University, Finland. Dr. Lindell has received many honors in the course

of his career, including his recognition as an IEEE Fellow in 1990 for his contributions to electromagnetic theory and for the development of education in electromagnetics in Finland. Dr. Lindell has authored or co-authored 3 books in English, authored or co-authored 10 books in Finnish, and published several hundred articles in professional journals, conference proceedings, and contributed chapters to other books.
