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Electromagnetic Fields And Waves

ELECTROMAGNETIC
FIELDS AND WAVES

Second Edition   Paul Lorrain and Dale Corson
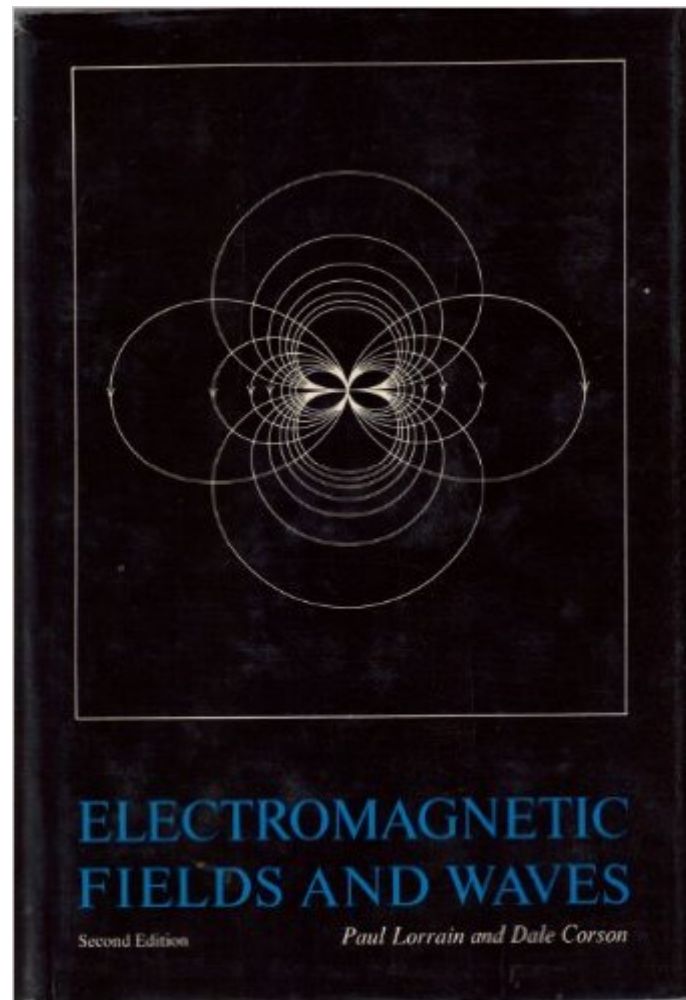
Synopsis

Book by Paul Lorrain, Dale Corson

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Customer Reviews

This book is intended primarily for students of Physics or Electrical Engineering at the junior or senior levels, although some schools will prefer to use it with first-yeargraduate students. The book should also be useful for scientists and engineers who wish to review the subject.The aim of this book is to give the reader a working knowledge of the basic concepts of electromagnetism. Indeed, as Alfred North Whitehead stated, half a centuryago, "Education is the acquisition of the art of the utilization of knowledge." This explains the relatively large number of examples and problems. It also explains whywe have covered fewer subjects more thoroughly. For instance, Laplace's equation is solved in rectangular and in spherical coordinates, but not in cylindricalcoordinates.CONTENTSA chapter on vectors (Chapter 1), a discussion of Legendre's differential equation (Section 4.5), an appendix on the technique that involves replacing cos wt by exp jwt,and an appendix on wave propagation.After the introductory chapter on vectors, Chapters 2, 3, and 4 describe electrostatic fields, both in a vacuum and in dielectrics. All of Chapter 4 is devoted to thesolution of Laplace's and of Poisson's equations.Chapter 5 is a short exposition of the basic concepts of special relativity, with little reference to electric charges. It requires nothing more, in the way of mathematics,than elementary differential calculus and the vector analysis of Chapter 1. Chapter 6 contains a demonstration of Maxwell's equations that is based on Coulomb's lawand on the Lorentz transformation and which is valid only for the case where the charges move at constant

velocities.

The Wave Watcher's Companion: From Ocean Waves to Light Waves via Shock Waves, Stadium Waves, andAll the Rest of Life's Undulations Electromagnetic Fields and Waves Electromagnetic Fields in Biology and Medicine Interactions Between Electromagnetic Fields and Cells (Applications of Communications Theory) Theory and Computation of Electromagnetic Fields The Possible Biological Effects of Low-Frequency Electromagnetic Fields (Iee Pab Report, No 10) Waves and Fields in Optoelectronics (Prentice-Hall series in solid state physical electronics) Fields Virology (Knipe, Fields Virology)-2 Volume Set by Knipe, David M. Published by Lippincott Williams & Wilkins 6th (sixth), 2-volume set edition (2013) Hardcover Fields Virology (Knipe, Fields Virology) Nonmetalliferous Stratabound Ore Fields (Evolution of Ore Fields Series) Electromagnetic Soundings (Methods in Geochemistry and Geophysics) Radio-Frequency and ELF Electromagnetic Energies: A Handbook for Health Professionals (Industrial Health & Safety) Electromagnetic Noise and Quantum Optical Measurements (Advanced Texts in Physics) Principles of Optics: Electromagnetic Theory of Propagation, Interference and Diffraction of Light Electromagnetic Compatibility Engineering Electromagnetic Composites Handbook, Second Edition PEMF - The Fifth Element of Health: Learn Why Pulsed Electromagnetic Field (PEMF) Therapy Supercharges Your Health Like Nothing Else! Waves of Protest: Social Movements Since the Sixties (People, Passions, and Power: Social Movements, Interest Organizations, and the P) Physics for Scientists and Engineers, Vol. 1, 6th: Mechanics, Oscillations and Waves, Thermodynamics, Engineering Electromagnetics and Waves (2nd Edition)