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| Nota di contenuto | I Electrostatics -- 1 Introduction and Fundamental Concepts -- 2 Green's Theorems -- 3 Orthogonal Functions and Multipole Expansion: Mathematical Supplement -- 4 Elementary Considerations on Function Theory: Mathematical Supplement -- II Macroscopic Electrostatics -- 5 The Field Equations for Space Filled with Matter -- 6 Simple Dielectrics and the Susceptibility -- 7 Electrostatic Energy and Forces in a Dielectric -- 8 Foundations of Magnetostatics -- 9 The Vector Potential -- 10 Magnetic Moment -- 11 The Magnetic Field in Matter -- IV Electrodynamics -- 12 Faraday's Law of Induction -- 13 Maxwell's Equations -- 14 Quasi-Stationary Currents and Current Circuits -- 15 Electromagnetic Waves in Vacuum -- 16 Electromagnetic Waves in Matter -- 17 Index of Reflection and Refraction -- 18 Wave Guides and Resonant Cavities -- 19 Light Waves -- 20 Moving Charges in Vacuum -- 21 The Hertzian Dipole -- 22 Covariant Formulation of Electrodynamics -- 23 Relativistic-Covariant Lagrangian Formalism -- 24 Systems of Units in Electrodynamics: Supplement -- 25 About the History of Electrodynamics. |
| Sommario/riassunto | More than a generation of German-speaking students around the world have worked their way to an understanding and appreciation of the power and beauty of modern theoretical physics-with mathematics, the most fundamental of sciences-using Walter Greiner's textbooks as their guide. The idea of developing a coherent, complete presentation of an entire field of science in a series of closely related textbooks is not a |

new one. Many older physicians remember with real pleasure their sense of adventure and discovery as they worked their ways through the classic series by Sommerfeld, by Planck, and by Landau and Lifshitz .. From the students' viewpoint, there are a great many obvious advantages to be gained through the use of consistent notation, logical ordering of topics, and coherence of presentation; beyond this, the complete coverage of the science provides a unique opportunity for the author to convey his personal enthusiasm and love for his subject. These volumes on classical physics, finally available in English, complement Greiner's texts on quantum physics, most of which have been available to English-speaking audiences for some time. The complete set of books will thus provide a coherent view of physics that includes, in classical physics, thermodynamics and statistical mechanics, classical dynamics, electromagnetism, and general relativity; and in quantum physics, quantum mechanics, symmetries, relativistic quantum mechanics, quantum electro-and chromodynamics, and the gauge theory of weak interactions.
