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J. Dirac Algebra and Trace Identities
K. Example of a Cross Section Calculation;
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Sommario/riassunto

Volume 1 of this revised and updated edition provides an accessible and practical introduction to the first gauge theory included in the Standard Model of particle physics: quantum electrodynamics (QED). The book includes self-contained presentations of electromagnetism as a gauge theory as well as relativistic quantum mechanics. It provides a unique elementary introduction to quantum field theory, establishing the essentials of the formal and conceptual framework upon which the subsequent development of the three gauge theories is based. The text also describes tree-level calculations of physical processes in QED and introduces ideas of renormalization in the context of one-loop radiative corrections for QED.