1. Record Nr. UNINA9910454313603321

Autore	Haug Eberhard
Titolo	The elementary process of Bremsstrahlung [[electronic resource] /] / Eberhard Haug, Werner Nakel
Pubbl/distr/stampa	River Edge, NJ, : World Scientific, c2004
ISBN	1-281-93547-6 9786611935474 981-279-500-6
Descrizione fisica	1 online resource (272 p.)
Collana	World Scientific lecture notes in physics ; ; v. 73
Altri autori (Persone)	NakelWerner
Disciplina	539.7222
Soggetti	Bremsstrahlung 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 (p. 249-255) and index.
Nota di contenuto	Contents ; Preface ; Chapter 1. Introduction ; 1.1 General introduction ; 1.2 Short historical note ; 1.3 Notations and definitions ; Chapter 2. Classical and semiclassical considerations on the bremsstrahlung process ; 2.1 Electron-nucleus bremsstrahlung ; 2.1.1 Screening effects 2.1.2 Bremsstrahlung linear polarization 2.1.3 Bremsstrahlung from transversely polarized electrons ; 2.2 Electron-electron bremsstrahlung ; 2.3 Weizsacker-Williams method of virtual quanta ; Chapter 3. Theory of the elementary process of electron-nucleus bremsstrahlung 3.1 Introduction 3.2 Bremsstrahlung cross section ; 3.3 Born approximation (Bethe-Heitler formula) ; 3.3.1 Atomic screening ; 3.3.2 Nuclear recoil effects ; 3.3.3 Effects of nuclear structure ; 3.4 Approximations with the Sommerfeld-Maue wave function 3.4.1 Sommerfeld-Maue wave function 3.4.2 Spin formalism ; 3.4.3 Cross section ; 3.4.4 Nonrelativistic approximation ; 3.4.5

Sommario/riassunto

This book deals with the theory and experiment of the elementary process of bremsstrahlung, where photons are detected in coincidence with decelerated outgoing electrons. Such experiments allow for a more stringent check of the theoretical work. The main emphasis is laid on electron-atom bremsstrahlung and electron-electron bremsstrahlung, but further bremsstrahlung processes are also dealt with. In the theoretical parts, triply differential cross sections are derived in various approximations, including electron spin and photon-polarization. In the experimental sections, electron-photon coin