Record Nr. UNINA9910783724503321 Autore Cohen-Tannoudji Claude <1933-> **Titolo** Atoms in electromagnetic fields [[electronic resource] /] / C. Cohen-Tannoudji Hackensack, NJ.: World Scientific, c2004 Pubbl/distr/stampa **ISBN** 1-281-88088-4 9786611880880 981-256-785-2 Edizione [2nd ed.] Descrizione fisica 1 online resource (770 p.) World Scientific series on atomic, molecular, and optical physics;; vol. Collana 539.7 Disciplina Soggetti Electromagnetic fields Photonuclear reactions **Atoms** 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. Nota di contenuto General Introduction; Contents; Section 1 Atoms in Weak Broadband Quasiresonant Light Fields Light Shifts - Linear Superpositions of Atomic Sublevels; Section 2 Atoms in Strong Radiofrequency Fields The Dressed Atom Approach in the Radiofrequency Domain; Section 3 Atoms in Intense Resonant Laser Beams The Dressed Atom Approach in the Optical Domain; Section 4 Photon Correlations and Quantum Jumps The Radiative Cascade of the Dressed Atom; Section 5 Atoms in High Frequency Fields or in the Vacuum Field Simple Physical Pictures for Radiative Corrections; Section 6 Atomic Motion in Laser Light Section 7 Sisyphus Cooling and Subrecoil CoolingSection 8 Levy Statistics and Laser Cooling: Section 9 Bose-Einstein Condensation: Section 10 A Few Review Papers Sommario/riassunto This invaluable book presents papers written during the last 40 years by Claude Cohen-Tannoudji and his collaborators on various physical effects which can be observed on atoms interacting with electromagnetic fields. It consists of a personal selection of review papers, lectures given at schools, as well as original experimental and

theoretical papers. Emphasis is placed on physical mechanisms and on

general approaches (such as the dressed atom approach) having a wide range of applications. Various topics are discussed, such as atoms in intense laser fields, photon correlations, quantum jumps