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| 1. Record Nr. | UNINA9910139754203321 |
| Titolo | Modern Challenges in Quantum Optics [[electronic resource]] : Selected Papers of the First International Meeting in Quantum Optics Held in Santiago, Chile, 13–16 August 2000 // edited by Miguel Orszag, Juan C. Retamal |
| Pubbl/distr/stampa | Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2001 |
| ISBN | 3-540-45409-8 |
| Edizione | [1st ed. 2001.] |
| Descrizione fisica | 1 online resource (XXIII, 408 p.) |
| Collana | Lecture Notes in Physics, , 0075-8450 ; ; 575 |
| Disciplina | 535 |
| Soggetti | Optics Electrodynamics Elementary particles (Physics) Quantum field theory Quantum optics Classical Electrodynamics Elementary Particles, Quantum Field Theory Quantum Optics |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Note generali | Bibliographic Level Mode of Issuance: Monograph |
| Nota di bibliografia | Includes bibliographical references at the end of each chapters. |
| Nota di contenuto | Trapped Ions and Cavity QED -- Generation of Fock States in the One-Atom Maser -- Coherent Manipulation of Two Trapped Ions with Bichromatic Light -- Quantum Nondemolition Measurement and Quantum State Manipulation in Two Dimensional Trapped Ion -- Phonon-Photon Translation with a Trapped Ion in a Cavity -- Quantum Interference, Entanglement, Decoherence and Quantum Computing -- Decoherence, Pointer Engineering and Quantum State Protection -- High Efficiency in Detection of Photonic Qubits -- Macroscopic Entanglement and Relative Phase -- Decoherence Effects of Motion Induced Radiation -- Control of Cold Atomic Collisions by Multiparticle Entanglement and a Modified Vacuum in Cavity QED -- Decoherence Evolution of a Harmonic Oscillator -- Non-linear Optics, Matter Waves -- Atomic Squeezing and Entanglement from Bose-Einstein |

Condensates -- Atomic Coherence Effects in Doppler-Broadened Three-Level Systems with Standing-Wave Drive -- Frequency Up-Conversion to the Vacuum Ultra-Violet in Coherently Prepared Media -- Optical Lattice Dynamics and Scattering Processes Resulting from Dipole-Dipole Interaction -- Quantum Optics and Applications -- Time Delay and Tunneling -- Giant Intensity-Intensity Correlations and Quantum Interference in a Driven Three-Level Atom -- A Cavity QED Test of Quantum Mechanics -- The Method of Quantum Jumps and Quantum White Noise -- Quantum Orbits in Intense-Laser Atom Physics -- Micromaser Dynamics Beyond the Rotating-Wave Approximation -- What Is a Quantized Mode of a Leaky Cavity? -- The Quantum Jumps Approach for Infinitely Many States -- Short Contributions -- Coherent Population Trapping and Resonance Fluorescence in a Closed Four Level System -- Dynamics of Bose-Einstein Condensation for Negative Scattering Length -- Quantum Gates with a Selective Interaction -- Measuring Entanglement Through the Wigner Function -- Reflection of a Slow Atom by a Cavity.

Sommario/riassunto

Quantum Optics is a rapidly progressing field well suited to probe the many fundamental issues raised by the subtleties of quantum physics. This book consists of a collection of reviews and papers that highlight the most important challenges faced in this area of research, including topics such as cavity QED, quantum entanglement, decoherence, matter waves and nonlinear optics. It will be a source of reference for all those who wish to familiarize themselves with the latest developments in the field.
