

1. Record Nr.	UNISA996466802703316
Titolo	Fundamentals of Laser Interactions II [[electronic resource] ] : Proceedings of the Fourth Meeting on Laser Phenomena Held at the Bundessportheim in Obergurgl, Austria, 26 February – 4 March 1989 // edited by Fritz Ehlotzky
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 1989
ISBN	3-540-48123-0
Edizione	[1st ed. 1989.]
Descrizione fisica	1 online resource (XI, 317 p. 19 illus.)
Collana	Lecture Notes in Physics, , 0075-8450 ; ; 339
Disciplina	621.36
Soggetti	Lasers Photonics Quantum optics Quantum computers Spintronics Quantum physics Atoms Physics Optics, Lasers, Photonics, Optical Devices Quantum Optics Quantum Information Technology, Spintronics Quantum Physics Atomic, Molecular, Optical and Plasma Physics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Resonance multiphoton ionization under strong fields -- On the Problem of the "New" structure in multiphoton ionization introduced by short-pulse high intensity lasers -- Resonant multiphoton ionization of xenon and atomic hydrogen in intense sub-ps-laser pulses -- Multiphoton detachment from negative ions -- Multiphoton processes in intense laser fields -- Harmonic generation in rare gases at high laser intensity -- Ionization of atoms by an intense Co2 laser --

Studies of strong-field effects in multiphoton subpicosecond excited plasmas: Soft X-ray fluorescence and propagation -- Theoretical aspects of multiphoton ionization and harmonic generation -- Eigenchannel r-matrix calculation of photoionisation processes in strontium -- Resonant multiphoton excitation of autoionizing rydberg states and planetary atoms -- Electron Correlations in Time and Space -- Correlations in multiply excited atoms -- Strong field coherency effects in the processes of photoionization from rydberg levels -- Observation of electronic wave packets with short laser pulses -- Many photon absorption in a near-classical regime -- Localization properties of rydberg atoms in the presence of noisy microwave fields -- Diamagnetism of the Hydrogen Atom in the Quasi-Landau-Regime -- Atomic interactions in superintense, high-frequency laser fields -- Photoionization and dissociation of the triatomic hydrogen molecule -- Multiphoton ionisation of xenon with tunable subpicosecond laser pulses -- Role of counter-rotating wave dynamics in near-threshold photoionisation of atomic hydrogen -- Laser-assisted electron-ion recombination and high-frequency generation -- Multiphoton ionization of hydrogen induced by two strong laser fields -- Energy spectrum of photoelectrons produced by picosecond laser induced surface multiphoton photoeffect -- Hydrogen atom in a strong radiation field: Nonperturbative analytic solutions -- Laser excitation of stark-induced resonances -- Two-photon ionisation of rare-gas atoms: An application of the relativistic time-dependent dirac-fock theory -- Diagrammatic perturbation theory for a two-level system in an intense light pulse -- Microwave ionization of alkali rydberg atoms -- Autoionization of large- $l$  rydberg states -- Fractal-like structures and the strongly kicked H-atom --  $(e,2e)$  Collisions in the presence of a laser field -- Atomic deformation and AC-Stark shifts of H under extreme radiation conditions -- Collisional treatment of multiphoton dissociation of small molecules in strong laser fields -- Autoionization of rydberg states in H<sub>2</sub> induced by a doubly excited state -- Autoionization and fragmentation of Na<sub>2</sub> studied by femtosecond laser pulses.

---

### Sommario/riassunto

At this Oberurgl seminar, theoreticians and experimentalists discussed recent developments in laser interactions. This volume contains the texts of invited lectures and abstracts of contributed papers. The main topics discussed are: \* multiphoton ionization \* above-threshold ionization \* collisions in strong fields \* atoms in intense fields \* chaos in radiative interactions \* electron correlations in multiphoton processes \* Rydberg atoms in external fields \* other laser interactions. Thus a broad and up-to-date account of laser interactions is given which will be of interest to scientists, engineers and graduate students.

---