

1. Record Nr.	UNINA9910954187003321
Titolo	Photonic, electronic and atomic collisions : proceedings of the XXIV International Conference, Rosario, Argentina, 20-26 July 2005 / / editors, Pablo D. Fainstein ... [et al.]
Pubbl/distr/stampa	Singapore ; ; Hackensack, NJ, : World Scientific, c2006
ISBN	1-281-91204-2 9786611912048 981-277-244-8
Edizione	[1st ed.]
Descrizione fisica	1 online resource (704 p.)
Altri autori (Persone)	FainsteinPablo D
Disciplina	539.7/57
Soggetti	Collisions (Nuclear physics) Particles (Nuclear physics) Photons
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 and name index.
Nota di contenuto	Intro -- CONTENTS -- PLENARY -- Electron Collisions - Past Present and Future -- Collisions of Slow Highly Charged Ions with Surfaces -- Atomic Collisions Studied with "Reaction Microscopes -- Rydberg Atoms: A Microscale Laboratory for Studying Electron-Molecule Interactions -- COLLISIONS INVOLVING PHOTONS -- Quantum Control of Photochemical Reaction Dynamics and Molecular Functions -- Manipulating and Viewing Rydberg Wavepackets -- Angle-Resolved Photoelectrons as a Probe of Strong-Field Interactions -- Ultracold Rydberg Atoms in a Structured Environment -- Synchrotron-Radiation-Based Recoil Ion Momentum Spectroscopy of Laser Cooled and Trapped Cesium Atoms -- Reconstruction of Attosecond Pulse Trains -- Selective Excitation of Metastable Atomic States by Femto- and Attosecond Laser Pulses -- Accurate Calculations of Triple Differential Cross Sections for Double Photoionization of the Hydrogen Molecule -- Double and Triple Photoionization of Li and Be -- Few/Many Body Dynamics in Strong Laser Fields -- Rescattering-Induced Effects for Electron-Atom Scattering in the Presence of a Circularly Polarized Laser Field -- Multidimensional Photoelectron Spectroscopy -- Few Photon

and Strongly Driven Transitions in the XUV and Beyond -- Ionization Dynamics of Atomic Clusters in Intense Laser Pulses -- On the Second Order Autocorrelation of an XUV Attosecond Pulse Train -- Evidence for Rescattering in Molecular Dissociation -- Photoionizing Ions Using Synchrotron Radiation -- Photo Double Ionization of Fixed in Space Deuterium Molecules -- Coherence and Intramolecular Scattering in Molecular Photoionization -- Experimental Observation of Interatomic Coulombic Decay in Neon Dimers -- Ionization by Short UV Laser Pulses: Secondary ATI Peaks of the Electron Spectrum. Molecular Frame Photoemission in Photoionization of H₂ and D₂: The Role of Dissociation on Autoionization of the Q₁ and Q₂ Doubly Excited States -- 3P Photoemission of 3D Transition Metals - Atoms, Molecules and Clusters -- COLLISIONS INVOLVING ELECTRONS -- Spin-Resolved Collisions of Electrons with Atoms and Molecules -- Calculation of Ionization and Excitation Processes Using the Convergent Close-Coupling Method -- The B-Spline R-Matrix Method for Electron and Photon Collisions with Atoms and Ions -- Absolute Angle-Differential Cross Sections for Excitation of Neon Atoms by Electrons of Energy 16.6-19.2 eV -- Studies of QED and Nuclear Size Effects with Highly Charged Ions in an EBIT -- Recombination of Astrophysically Relevant Ions: Be-like C, N, and O -- Dissociation and Excitation of Molecules and Molecular Ions by Electron Impact -- State-Selective X-Ray Study of the Radiative Recombination of U₉₂⁺ Ions with Cooling Electrons -- Electron Collisions with Trapped Metastable Helium -- Non-Dipole Effects in Electron and Photon Impact Ionization -- Electron Driven Processes in Atmospheric Behaviour -- Calculation of Excitation and Ionization for Electron-Molecule Collisions at Intermediate Energies -- Absolute Total Cross Sections for Electron-CH₄ Scattering at Intermediate Energies -- Electron-CO₂ Scattering in a Cluster Environment -- Isomer Effect in Electron Collisions with Small Hydrocarbons -- Low Energy Electron Interactions with Bio-Molecules -- Narrow Resonances in Dissociative Electron Attachment and Vibrational Excitation in H₂ -- (E,2E) Experiments with Randomly Oriented and Fixed-in-Space Hydrogen Molecules -- Initial and Final State Correlation Effects in (E,3E) Processes -- An (e,y2e) Experiment for Simultaneous Ionization-Excitation of Helium to the He⁺(2P)2P States by Electron Impact -- COLLISIONS INVOLVING EXOTIC PARTICLES.

Antihydrogen in the Laboratory -- Atomic Collisions Involving Positrons -- Ionization and Positronium Formation in Noble Gases -- Study of Inner-Shell Ionization by Low-Energy Positron Impact -- Positron-Atom Bound States and Interactions -- Extraction of Ultra-Slow Antiproton Beams for Single Collision Experiments -- Positronium Formation from Valence and Inner Shells in Noble Gas Atoms -- Molecular Effects in Neutrino Mass Measurements -- COLLISIONS INVOLVING HEAVY PROJECTILES -- Probing the Solar Wind with Cometary X-Ray and Far-Ultraviolet Emission -- Production of O₂⁺ + Neutrals from the Collision of C₃⁺ with Water -- Vector Correlation of Fragment Ions Produced by Collision of Ar₁₁⁺ with Dimethyldisulfide -- Slow Multiply Charged Ion-Molecule Collision Dynamics Studied Through a Multi-Coincidence Technique -- Recent Developments in Proton-Transfer-Reaction Mass Spectrometry -- Interferences in Electron Emission from H₂ Induced by Fast Ions -- Atomic Realization of the Young Single Electron Interference Process in Individual Autoionization Collisions -- Multiple Ionization Processes Related to Irradiation of Biological Tissue -- Atom-Diatom Collisions at Cold and Ultra-Cold Temperatures -- Interactions of Ions with Hydrogen Atoms -- Analysis of All Structures in the Elastic and Charge Transfer Cross Sections for Proton-Hydrogen

Collisions in the Range of 10^{-10} - 10^2 eV -- Ab-initio Ion-Atom
 Collision Calculations for Many-Electron Systems -- Fully Differential
 Studies on Single Ionization of Helium by Slow Proton Impact -- Dipole
 Polarization Effects on Highly-Charged-Ion-Atom Electron Capture --
 Proton- Antiproton- and Photon-He Collisions in the Context of Ultra
 Fast Processes -- Impact Parameter Dependent Charge Exchange
 Studies with Channeled Heavy Ions -- Crystal Assisted Atomic Physics
 Experiments Using Heavy Ions.

COLLISIONS INVOLVING CLUSTERS AND SURFACES -- Structure and
 Dynamics of Van der Waals Complexes: From Triatomic to Medium Size
 Clusters -- Evaporation, Fission and Multifragmentation Processes of
 Multicharged C₆₀ Ions Versus Excitation Energies -- Fragmentation of
 Collisionally Excited Fullerenes -- Lifetimes of C₂⁻ 60 and C₂⁻ 70
 Dianions in a Storage Ring -- Clusters and Clusters of Clusters in
 Collisions -- Fragmentation of Small Carbon Clusters -- Collective
 Excitations in Collisions of Photons and Electrons with Metal Clusters
 and Fullerenes -- Dynamics of H₂ Chemisorption on Metal Surfaces --
 Interaction of Slow Multiply Charged Ions with Insulator Surfaces --
 Electron Emission During Grazing Impact of Atoms on Metal Surfaces --
 Inner-Shell Collective Effects for Protons Backscattered from the Al
 (110) Surface -- Guiding of Highly Charged Ions by SiO₂ Nano-
 Capillaries -- Low-Energy Electron Impact on Hydrogenated
 Polycrystalline Diamond and Condensed Molecules -- Low Energy Spin-
 Polarized Electron-Pair (e,2e)-in-Reflection from Various Surfaces --
 List of Contributors.

Sommario/riassunto

This volume contains contributions covering a wide range of subjects in the area of photonic, electronic and atomic collisions. These include the collisions of heavy particles and electrons with atoms, molecules and clusters; the coherent control of reaction dynamics using lasers and electromagnetic fields with molecules, clusters and liquids; recent experimental progress in the synthesis of antihydrogen; the interaction of solar winds with cometary atmospheres, and the physical interpretation of reactions in biological systems. Contents: Angle-Resolved Photoelectrons as a Probe of Strong-Field Interactions "(M Vrakking)"Double and Triple Photoionization of Li and Be "(J Colgan et al.)"Multidimensional Photoelectron Spectroscopy "(P Lablanquie et al.)"Photoionizing Ions Using Synchrotron Radiation "(R Phaneuf)"Spin-Resolved Collisions of Electrons with Atoms and Molecules "(G F Hanne)"Electron Collisions with Trapped, Metastable Helium "(L J Uhlmann et al.)"Electron Driven Processes in Atmospheric Behavior "(L Campbell et al.)"Atomic Collisions Involving Positrons "(H R J Walters & C Starret)"Molecular Effects in Neutrino Mass Measurements "(N Doss et al.)"Atom-Diatom Collisions at Cold and Ultra-Cold Temperatures "(F D Colavecchia et al.)"Crystal Assisted Atomic Physics Experiments Using Heavy Ions "(K Komaki)"Fragmentation of Collisionally Excited Fullerenes "(M Alcamì et al.)"Fragmentation of Small Carbon Clusters "(M Chabot et al.)"and other papers Readership: Researchers and post-graduate students in atomic, molecular and optical physics.