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Nota di contenuto	Looking Through Simple Atoms and Molecules at Fundamental Physics -- Looking Through Simple Atoms and Molecules at Fundamental Physics -- Precision Measurements and Fundamental Constants -- The Muon g—: Status and Perspectives -- Guide for Atomic and Particle Physicists to CODATA's Recommended Values of the Fundamental Physical Constants -- Proton Structure and Hydrogen Energy Levels -- Precise Radii of Light Nuclei from Electron Scattering -- Nucleon Form Factor Measurements in Mainz: Past and Future -- Proton Structure Corrections to Hydrogen Hyperfine Splitting -- Atoms with Few Electrons -- Precision Laser Spectroscopy of Li+ and Neutral Lithium -- Halo Nuclei in Laser Light -- Exotic Atoms and Heavy Ions -- Quantum Electrodynamics in Extreme Fields: Precision Spectroscopy of High-Z H-like Systems -- Pionic Hydrogen -- Precision Spectroscopy of Antiprotonic Helium Atoms and Ions – Weighing the Antiproton -- Simple Molecules -- Precision Spectroscopy of Molecular Hydrogen Ions: Towards Frequency Metrology of Particle Masses -- Nuclear Magnetic Dipole Moments from NMR Spectra – Quantum Chemistry and Experiment -- The Negative Ion of Positronium: Decay Rate Measurements and Prospects for Future Experiments -- Savely G. Karshenboim: Guide for Atomic and Particle Physicists to CODATA's Recommended Values of the Fundamental Physical Constants.

Sommario/riassunto

This is the third in a series of topical-review volumes about the precision physics of simple atoms all published in LNP. The simplicity of atoms allows one to use them as a tool to explore effects beyond atomic physics ranging from fundamental constants and fundamental symmetries to particle and nuclear properties. This volume, like its predecessors, presents multidisciplinary treatments of important areas and new developments within precision physics. It concentrates on new topics and those not treated in the previous volumes. For example, on the proton structure and its effects on the energy levels, on simple molecules, on atoms somewhat more complicated than hydrogen (such as lithium), on exotic atoms and atoms with exotic nuclei. The book includes a foreword by Nobel Prize Laureate Theodor Hänsch.
