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Sommario/riassunto	This book covers the main ideas, methods, and recent developments of quantum-limit optical spectroscopy and applications to quantum information, resolution spectroscopy, measurements beyond quantum limits, measurement of decoherence, and entanglement. Quantum-limit spectroscopy lies at the frontier of current experimental and theoretical techniques, and is one of the areas of atomic spectroscopy where the quantization of the field is essential to predict and interpret the existing experimental results. Currently, there is an increasing interest in quantum and precision spectroscopy both theoretically and experimentally, due to significant progress in trapping and cooling of single atoms and ions. This progress allows one to explore in the most

intimate detail the ways in which light interacts with atoms and to measure spectral properties and quantum effects with high precision. Moreover, it allows one to perform subtle tests of quantum mechanics on the single atom and single photon scale which were hardly even imaginable as ``thought experiments'' a few years ago. .