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Nota di contenuto	Introduction -- Cavityenhanced highorder harmonic generation for attosecond metrology -- Nextgeneration enhancement cavities for attosecond metrology – an outlook.
Sommario/riassunto	This book introduces readers to the development of a new generation of high pulse-repetition frequency instruments for multi-dimensional attosecond-resolution photoelectron spectroscopy (attosecond PES). It investigates the power scaling of femtosecond enhancement cavities for efficient intracavity high-harmonics generation (HHG). Further, it derives and verifies advanced resonator designs that feature large illuminated spots on all mirrors, which mitigate both intensity- and thermally-induced enhancement limitations. The dynamics of a high-finesse, passive resonator in the presence of a highly nonlinear optical process such as HHG are quantitatively investigated, both theoretically and experimentally. These investigations are instrumental in achieving the holistic optimization of the XUV source reported on here, which for the first time reached intracavity HHG conversion efficiencies comparable to those achieved in single-pass setups with a similar gas

target. Coupling out the XUV beam from the enhancement cavity by purely geometric means, employing both the fundamental and higher-order transverse Gaussian modes, is studied. This offers the advantages of robustness, low distortion to the participating pulses, and photon-energy scalability. Last but not least, the author provides a range of proof-of-principle attosecond angle-resolved PES experiments. The book gives an outlook on the possible future development of cavity-enhanced HHG and an extensive discussion on the generation of isolated XUV attosecond pulses via intracavity wavefront rotation.