

Abstract Submitted
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The Phasemeter¹ A.M. SAYLER, T. RATHJE, M. MÖLLER, D. ADOLPH, W. MÜLLER, D. HOFF, G.G. PAULUS, Institut für Optik und Quantenelektronik and Helmholtz Institut Jena, Max-Wien-Platz 1, 07743 Jena, Germany, INSTITUT FÜR OPTIK UND QUANTENELEKTRONIK AND HELMHOLTZ INSTITUT TEAM — Intense few-cycle (4-8fs) laser pulses at 790 nm are now being used in a wide variety of applications, including the production of attosecond extreme-ultraviolet (XUV) pulses. Since these experiments are sensitive to the electric field of the laser light, the characterization and control of the waveform is critical for the understanding and manipulation of these interactions. We expand the usage of a stereographic laser-induced above-threshold ionization measurement of Xe (CEPM), i.e. the same technique optimized to provides precise, real-time, every-single-shot carrier-envelope phase and pulse length measurements of ultrashort laser pulses. This technique was restricted to sub-8fs laser pulses, however, by combining the CEPM with polarization gating; the acceptance region has been extended to a pulse length of 12fs. Together with real-time circuit, the CEPM also allows for improved the carrier-envelope phase stabilization of few-cycle laser pulse systems by 25%.

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