

Abstract Submitted
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What can the measurement of the transverse velocity of atoms tell us about strong-field interactions with atoms? ROBERT SANG, Centre for Quantum Dynamics, Griffith University, IGOR IVANOV, Centre for Relativistic Laser Science, Institute for Basic Science, ANATOLI KHEIFETS, Australian National University, JAME CALVERT, XIAOSHAN WANG, HAN XU, ADAM PALMER, DAVE KIELPINSKI, IGOR LITVINIYUK, Centre for Quantum Dynamics, Griffith University — In this paper we present a theoretical and experimental investigation of the ionization of atoms through the interaction of light in the strong-field regime. We show that the measurement of the transverse electron momentum distribution of ionised atoms as a function of the ellipticity of the ionizing light in the over-the-barrier and the tunnelling regime evolve in qualitatively different ways and in the case of the use of linearly polarized light demonstrates that the strong-field approximation is not valid.

Robert Sang
Griffith Univ

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