Abstract Submitted
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Numerical basis-state method for strong-field excitation and ionization[1] ANDREW SPOTT, JILA, University of Colorado at Boulder, USA, SHAOHAO CHEN, Department of Physics and Astronomy, Louisiana State University, Baton Rouge, LA, ANDREAS BECKER, AGNIESZKA JARON-BECKER, JILA, University of Colorado at Boulder, USA — Numerical basis state methods offer some advantages over their analytical counterparts in calculations of binding energy and geometries of large molecular systems, primarily with respect to computational efficiency. Toward this end, we have developed a finite-space, single active electron numerical energy basis state method for performing ab-initio TDSE calculations of the interaction of atoms, including spin-orbit coupling, with intense ultrashort laser pulses. Results for the hydrogen atom [1] and other atoms regarding recently reported phenomena such as the dependence of excitation and ionization probabilities on the carrier-envelope phase will be presented.

[1] Chen, S. et al Phys.Rev.A 86, 013410 (2012).

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