

Abstract Submitted  
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**Triggering coherent electronic hole motion with strong-field pulses** STEFAN PABST, CFEL, DESY and ITAMP, Harvard-Smithsonian CFA, HANS-JAKOB WÖRNER, Laboratorium für Physikalische Chemie, ETH Zürich — We report about a very effective way to create coherent hole wave packets in atoms and molecules. In xenon, we demonstrate how strong-field pulses can trigger coherent spin-orbit hole motion in the valence  $5p$  shell via tunnel ionization. The degree of coherence between the ionic states  $5p_{1/2}^{-1}$  and  $5p_{3/2}^{-1}$  can be controlled by the pulse duration and driving wavelength.

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