

Abstract Submitted
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Non-sequential multiple ionization: signature of single-recollision pathway¹ PHAY HO, Argonne National Laboratory, Argonne, IL 60439, USA., JOSEPH EBERLY, University of Rochester, Rochester, NY 14627, USA. — We present the result of inclusive classical calculations of non-sequential multiple ionization (NSMI) in 780nm laser pulses with intensities above 10^{14} W/cm². Using a large ensemble of four-electron trajectories, we obtain the end-of-pulse momentum distributions of ions for the processes of double, triple and quadruple ionization. These calculated distributions agree very well with the observed momentum distributions of Ne²⁺, Ne³⁺ and Ne⁴⁺. Our analysis shows that a double-peak structure in the end-of-pulse momentum distribution of multiply charged ions can be regarded as the signature of NSMI via a single recollision.

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