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Abstract for an Invited Paper for the DAMOP05 Meeting of the American Physical Society

Dynamics of Multiple Ionization in Strong Laser Fields

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We will review recent experiments on multiple ionization of atoms by femtosecond laser pulses in the $10^{14} - 10^{15} W/cm^2$ regime. The dynamics of the multiple ionization process via rescattering is unravelled on a subfemtosecond time scale. This is achieved by imaging the momenta of electrons and ions in coincidence using the COLTRIMS technique.