

Abstract Submitted
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Time-resolving intra-atomic two-electron collision dynamics

AGAPI EMMANOULIDOU, University College London and University of Massachusetts at Amherst — We present a completely new idea of how to time-resolve the dynamics of two electrons as they escape to the continuum [1]. Our study is a theoretical one in the framework of classical and semiclassical physics. However, it is at the same time a numerical experiment taking into account realistic laser pulses. To our knowledge, this is the first time an attosecond streak camera for two electrons is formulated. The current state of the art is the attosecond streak camera with one continuum electron. As Free Electron Lasers develop our two electron streak camera will be extended to a variety of processes concerned with deep core electron dynamics. In addition, we expect that our two-electron streak camera will be applied to time-resolve many electron dynamics in atomic and molecular systems, problems which are at the forefront of Attosecond Science.

[1] A. Emmanouilidou, A. Staudte, P. Corkum (March 2010, submitted)

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