

Abstract Submitted  
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**Angular interferences of sequentially ionized double-continuum wave packets**<sup>1</sup> XIAO WANG, FRANCIS ROBICHEAUX, Purdue University — When two electrons are sequentially ionized from an atom, if the second electron is much faster than the first electron, post-collision interaction (PCI) appears and plays an important role. In this presentation, two specific scenarios are discussed: a below-threshold photoexcitation followed by an Auger decay, and sequential ionizations of double wave packets. After the post-collision interactions between the two electron, the correlated distributions of final energy and relative angle between the two electrons are studied. Interference patterns are found with respect to the relative angle between the two ionized electrons. Fully quantum calculations based on time-dependent Schrödinger equations and classical trajectory Monte Carlo methods were used to study properties of these interference patterns. Furthermore, we also studied effects from the laser pulses that used to ionize or excite the electrons, including frequency, frequency chirping, and time width. The discoveries on the interference patterns in two-electron atoms can be generalized to other systems containing sequentially ionized electrons with different energies.

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