

DAMOP07-2007-000236

Abstract for an Invited Paper
for the DAMOP07 Meeting of
the American Physical Society

Developments in the Coherent Control of Collisional Processes¹

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Experimental and theoretical studies of the Coherent Control of unimolecular processes has seen spectacular growth over the last two decades. By contrast, Coherent Control of collisional processes remains a significant challenge. We describe: (1) the entanglement requirement for fixed energy scattering that makes controlled collisional experiments difficult, (2) demonstrate a viable theoretical proposal for control of collision induced ionization, and (3) introduce a time dependent approach that provides a new direction that bypasses entanglement requirements for collisional control. Applications to attosecond scenarios are computationally examined and shown to provide excellent control in the particular cases examined.

¹Support from NSERC and PRO is gratefully acknowledged