Abstract Submitted
for the DAMOP14 Meeting of
The American Physical Society

Theoretical analysis of the double photoionization of the helium dimer[1] HONGCHENG NI, ANDREAS BECKER, Univ of Colorado - Boulder — We study the scattering effects in the double photoionization process of the helium dimer by numerically solving the time-dependent Schrödinger equation. To this end, we use a planar two-active-electron model and abridged Hamiltonians to distinguish the contributions from different interactions to the photoelectron angular distributions. We are able to identify the role of the Coulomb interactions between the electrons as well as between the electrons and the nuclei on the emission of the primary as well as the knock-off electron in the double ionization process. Furthermore, the role of the initial state (singlet versus triplet) will be discussed.

[1]Supported by NSF (grant numbers PHY-0854918 and PHY-1125844)

Hongcheng Ni
Univ of Colorado - Boulder

Date submitted: 31 Jan 2014 Electronic form version 1.4