

Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

**DC Sliced Ion Imaging Study of Photodissociation Dynamics:
Comparison between Conditions of Simulations and Experiments** COLIN
J. WALLACE, WEI WEI, SIMON W. NORTH, Texas A&M – College Station —
Vector correlations between parent molecule transition dipole moments, photofrag-
ment velocity angular momentum vectors, can provide valuable information about
excited states symmetry, non-adiabatic dynamics and the forces and torques operat-
ing during fragmentation. Accurate molecular descriptions of photo-induced chemi-
cal reactions require detailed experimental results which measure vector properties.
Sliced velocity mapped ion imaging is a powerful method to measure the vector cor-
relations in the products of photo-initiated reactions. Simulations of different DC
sliced imaging conditions using Simion 8.1 program have performed to assist in the
interpretation of experimental data. We have also recently re-assembled and mod-
ified a ion imaging apparatus and collected ion images of several photodissociation
systems. Comparisons between these simulations and our experimental images will
be presented. We are optimistic that our newly developed mathematical methods of
extracting vector correlation information from sliced imaging anisotropy, will permit
detailed study of a variety of benchmark dynamical systems.

Colin Wallace
Texas A&M – College Station

Date submitted: 14 Nov 2014

Electronic form version 1.4