

Abstract Submitted
for the DAMOP06 Meeting of
The American Physical Society

Photo-associo-dissociative Ionization in a Rb MOT MARC TRACHY, MUDESSAR SHAH, J.R. MacDonald Laboratory, Kansas State University, Manhattan, KS 66506, RICHARD BREDY, Laboratoire de Spectrometrie ionique et Moléculaire (LASIMOURM CNRS) 5579 Université Claude Bernard Lyon1, 69622 Villeurbanne, France, HOW CAMP¹, GIORGI VESHAPIDZE, J.R. MacDonald Laboratory, Kansas State University, Manhattan, KS 66506, MING-TIE HUANG, Physics Department, Saginaw Valley State University, University Center, MI, BRETT DEPAOLA, J.R. MacDonald Laboratory, Kansas State University, Manhattan, KS 66506 — A process, called photo-associo-dissociative ionization (PADI), that is related to both photo-association and Penning ionization is presented. As in photo-association, two colliding atoms are excited together as a quasi-molecule. Unlike photo-association, the final photon in the process then excites the molecule to a dissociative curve above the ionization threshold. Experimental measurements of PADI reaction rates, relative to other cold collision rates, are given and dissociation energy distributions are shown.

¹Present Address: Science & Technology Division, Institute for Defense Analyses, 4850 Mark Center Drive, Alexandria, VA 22311-1882

Marc Trachy
J.R. MacDonald Laboratory, Kansas State University, Manhattan, KS 66506

Date submitted: 08 Mar 2006

Electronic form version 1.4