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Theoretical and experimental study of electron impact ionization (e,2e) of the R-Carvone molecule for an intermediate incident electron energy[1] ESAM ALI, Missouri Univ of Sci Tech, DARRYL JONES, School of Chemical and Physical Sciences, Flinders University, GPO Box 2100, Adelaide SA 5001, Australia, JAMES COLGAN, CHUANGANG NING, Theoretical Division, Los Alamos National Laboratory, Los Alamos, New Mexico 87545, USA, ODDUR INGLFSSON, Science Institute and Department of Chemistry, University of Iceland, Dunhagi 3, 107 Reykjavik, Iceland, MICHAEL BRUNGER , School of Chemical and Physical Sciences, Flinders University, GPO Box 2100, Adelaide SA 5001, Australia, DON MADISON, Missouri Univ of Sci Tech — We will present preliminary results from a combined theoretical and experimental study of electron impact single ionization of the R-Carvone molecule. The study was performed for a 250 eV incident electron energy, an ejected electron energy of 20 eV, and for three fixed scattered electron angles (5^o, 10^o, and 15^o) in asymmetric coplanar geometry. Experimental data were measured for the three unresolved outermost orbitals - the highest, next highest, and next-next highest occupied molecular orbitals (HOMO, NHOMO, and HOMO-2). The generation of fully differential cross sections for this large molecule is extremely challenging for both experimental measurements and theoretical calculations. Theoretical M3DW (molecular 3-body distorted wave) results are summed over the three unresolved states to enable the comparison with the experimental data.

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