

Abstract Submitted  
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**Low energy (e,2e) studies from CH<sub>4</sub>: Results from symmetric coplanar experiments and M3DW theory**<sup>1</sup> HAARI CH, Missouri S and T, KATE NIXON, ANDREW MURRAY, University of Manchester, CHUANGANG NING, Tsinghua University, DON MADISON, Missouri S and T — Low energy experimental and theoretical triply differential cross sections (TDCS) will be presented for electron impact ionization of Methane (CH<sub>4</sub>) for both the highest occupied molecular orbital (HOMO) and next highest occupied molecular orbital (NHOMO). The HOMO is a predominantly p-type orbital which is labeled 1t<sub>2</sub> and the NHOMO is a predominantly s-type orbital labeled 2a<sub>1</sub>. Coplanar symmetric (symmetric both in final state electron energies and observation angles) will be presented for final state electron energies ranging from (1.4 eV, 1.5 eV) to (20 eV, 20 eV). The experimental results are in reasonably good qualitative agreement with theoretical M3DW (molecular 3-body distorted wave) calculations. The molecular results will be compared with the ionization of the 2s and 2p shells of neon which is the isoelectronic atom.

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