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Importance of projectile-target interactions in the triple differential cross sections for Low energy (e,2e) ionization of aligned H_2 ESAM ALI, DON MADISON, Missouri Univ of Sci & Tech, X. REN, A. DORN, Max-Plank-Institute for Nuclear Physics, CHUANGANG NING, Tsinghua University, Beijing, China — Experimental and theoretical Triple Differential Cross Sections (TDCS) are presented for electron impact ionization-excitation of the $2s\sigma_g$state of H_2 in the perpendicular plane. The excited $2s\sigma_g$ state immediately dissociates and the alignment of the molecule is determined by detecting one of the fragments. Results are presented for three different alignments in the xy-plane (scattering plane is xz) - alignment along y-axis, x-axis, and 45° between the x- and y-axes for incident electron energies of 4, 10, and 25 eV and different scattered electron angles of 20° and 30° in the perpendicular plane. Theoretical M4DW (molecular 4-body distorted wave) results are compared to experimental data, and overall we found reasonably good agreement between experiment and theory. The Results show that (e,2e) cross sections for excitation-ionization depend strongly on the orientation of the H_2 molecule.

Esam Ali
Missouri Univ of Sci & Tech

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