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Electron Impact Induced Break-Up of Aligned H_2: Molecular Frame (e, 2e) Studies ALEXANDER DORN, XUEGUANG REN, THOMAS PFLUEGER, ARNE SENFTLEBEN, JOACHIM ULLRICH, Max Planck Institute for Nuclear Physics, Heidelberg, Germany, SHENYUE XU, Institute of Modern Physics, Chinese Academy of Sciences, Lanzhou, China, JAMES COLGAN, Los Alamos National Laboratory, MITCH PINDZOLA, Auburn University — In electron impact ionization details of the collision dynamics should depend on the alignment of the target molecule with respect to the incoming projectile. Here we present experimental and theoretical results for ionization of molecular hydrogen (H_2) by slow (54 eV) electron impact. Experimentally, the alignment of the H_2 molecule is determined by the post-collisional dissociation of the molecular ion. Therefore, fully differential cross sections for fixed in space molecular axis can be presented which indeed show strong alignment dependence. In comparison with non-perturbative time dependent close coupling calculations (TDCC) these results give detailed insight into the multi-centre ionization dynamics.

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