

Abstract Submitted
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Differential cross sections for single ionization of H₂ by 75keV proton impact¹ UTTAM CHOWDHURY, MICHAEL SCHULZ, DON MADISON, Missouri S and T — We have calculated Triply differential cross sections (TDCS) and doubly differential cross sections (DDCS) for single ionization of by 75 KeV proton impact using the molecular 3 body distorted wave Eikonal initial state (M3DW-EIS) approach. Previously published measured DDCS (differential in the projectile scattering angle and integrated over the ejected electron angles) found pronounced structures at relatively large angles which were interpreted as an interference resulting from the two-centered potential of the molecule. Theory treating H₂ as atomic H multiplied by a molecular interference factor only predict the observed structure when assumptions are made about the molecular orientation. Here we apply the M3DW-EIS method, which does not rely on such an ad hoc approach, but rather treats the interference from first principles and we find the same structure without assuming any preferential orientations.

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