

Abstract Submitted
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Production of Excited Atomic Hydrogen and Deuterium from HD Photodissociation J.R. MACHACEK, University of Nebraska-Lincoln, J.D. BOZEK, SLAC, J.E. FURST, University of Newcastle-Ourimbah, T.J. GAY, University of Nebraska-Lincoln, H. GOULD, A.L.D. KILCOYNE, LBNL, K.W. MCLAUGHLIN, Loras College — We have measured the production of Ly α , H α , and H β fluorescence from atomic H and D for the photodissociation of HD by linearly-polarized photons with energies between 20 and 66 eV. In this energy range, excited photofragments result primarily from the production of doubly-excited molecular species which promptly autoionize or dissociate into two neutrals. Theoretical calculations are not yet available for HD, but comparison between the relative cross sections for H₂, D₂ and HD targets and the available theory for H₂ and D₂ [1] allow for an estimate of the relative strength of each dissociation channel in this energy range. [1] J. D. Bozek *et al.*, *J. Phys. B* **39**, 4871 (2006). Support provided by the NSF (Grant PHY-0653379), DOE (LBNL/ALS) and ANSTO (Access to Major Research Facilities Programme).

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