

Abstract Submitted
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Production of Excited Atomic Hydrogen from Methane J.R. MACHACEK, University of Nebraska-Lincoln, V.M. ANDRIANARIJAONA, Pacific Union College, J.E. FURST, University of Newcastle-Ourimbah, T.J. GAY, University of Nebraska-Lincoln, A.L.D. KILCOYNE, LBNL, A.L. LANDERS, Auburn University, K.W. MCLAUGHLIN, Loras College — We have measured the production of Ly α and H α fluorescence from atomic H for the photodissociation of CH $_4$ by linearly-polarized photons with energies between 20 and 65 eV. Comparison between our Ly α relative cross section and that previously reported [1] show different peak height ratios. This also occurs in the H α cross section when compared to previous data [2]. We do not observe as significant a drop in either cross section above 35 eV. Our measurements were taken with pressures two orders of magnitude lower than those used in ref. [1]. We present comparisons between data sets and a discussion of possible systematic effects. [1] H. Fukuzawa *et al.*, J. Phys. B. **38**, 565 (2005). [2] M. Kato *et al.*, J. Phys. B. **35**, 4383 (2002). Support provided by the NSF (Grant PHY-0653379), DOE (LBNL/ALS) and ANSTO (Access to Major Research Facilities Programme).

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