

Abstract Submitted
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Photoelectron angular distribution measurements from p -electron photodetachment of Lu^- A.M. COVINGTON, Physics Department, University of Nevada, Reno, S.S. DUVVURI, E.D. EMMONS, R.G. KRAUS, J.S. THOMPSON, Physics Department, University of Nevada, Reno, V.T. DAVIS — The spectral dependence of the angular distributions of photoelectrons produced by the single-photon photodetachment process $h\nu + \text{Lu}^- ([\text{Xe}]4f^{14}6s^25d6p^1D_2) \rightarrow \text{Lu} ([\text{Xe}]4f^{14}6s^25d^2D_{3/2}) + e^-$, have been measured at discrete photon wavelengths ranging from 457.9 to 532 nm (2.71- 2.33 eV) using a crossed laser-ion beam apparatus. An intense 10 keV Lu^- beam was crossed at 90° with a linearly polarized, continuous photon beam in order to produce photoelectrons. Photoelectron yields were measured as a function of the orientation of the laser polarization vector with respect to the momentum vector of the collected photoelectrons. The photoelectron angular distributions were used to determine asymmetry parameters. The spectral variation of the asymmetry parameter is shown to be consistent with the photodetachment of a p -electron using the model of Hanstorp *etal* [Phys. Rev. A **40**, 670 (1989)], and acts to verify the Lu^- ground state configuration predicted by Elliaiv *etal* [Phys. Rev. A, **52**, 291 (1995)].

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