

Abstract Submitted  
for the DAMOP07 Meeting of  
The American Physical Society

**Photoionization spectroscopy of even-parity autoionizing Rydberg states of argon atoms**<sup>1</sup> J.D. WRIGHT, T.J. MORGAN, Physics Department, Wesleyan University, Q. GU, L. LI, J.L. KNEE, Chemistry Department, Wesleyan University — We use the J=0 and J=2 metastable states of argon created in a plasma discharge to perform photoionization spectroscopy of even-parity autoionizing Rydberg states of the argon atom between the first and second ionization limits. Fitting the data to a linear combination of Fano-type peaks allows us to extract the widths and q-parameters of the resonances. Finally, we compare the experimental profile of p-type multiplets to the results of recent theoretical calculations [1]. Agreement is good.

[1] I. D. Petrov, V. L. Sukhorukov, T. Peters, O. Zehnder, H. J. Worner, F. Merkt, H. Hotop, JPB 39 p. 3159 (2006)

<sup>1</sup>Work supported by the National Science Foundation.

J. David Wright  
Physics Department, Wesleyan University

Date submitted: 05 Feb 2007

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