

Abstract Submitted  
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High-Resolution Measurements of Microwave Ionization of Stretched Hydrogen Atoms. J. E. BAYFIELD, S.-Y. LUIE and L. C. PEROTTI, Department of Physics & Astronomy, University of Pittsburgh, Pittsburgh, PA. The ionization probability  $P$  of hydrogen atoms with parabolic quantum numbers  $n_0, 0, 0$  has been measured as a function of microwave field  $F$  and microwave frequency within the range 12.4-18.0 GHz, in 0.1 GHz steps. Values of  $P$  for fixed scaled fields  $F_0 = n_0^4 F = 0.02, 0.03, 0.04, 0.05, 0.06$  have been extracted from the data, for  $n_0 = 65, 69, 72$ . A number of well-delineated regions of frequency are found to exhibit relative stability against ionization. The results are compared with the predictions of a one dimensional classical model. The data extend into low-field regimes of purely quantum ionization. Larger fluctuations are observed than those predicted classically.

Prefer Standard Session

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James E. Bayfield  
100 Allen Hall  
University of Pittsburgh  
Pittsburgh, PA 15260