

LIFETIME ANALYSIS OF A DISSOCIATIVE STATE: OPTICAL-OPTICAL DOUBLE RESONANCE SPECTROSCOPY OF THE  $v=3$  LEVEL OF THE  $A^1P$  STATE OF BH

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The  $A^1\Pi$  state of BH is characterized by its barrier to dissociation. We have observed new structure in the  $v=3, J=4-7$  region near the top of the barrier by means of constant energy scans over intermediate states in double resonant transitions locked on single  $B^1\Sigma - X^1\Sigma$  transitions. Linewidths provide new information on the barrier height and tunneling lifetimes.