COMPLETE VIBRATIONAL CHARACTERIZATION OF THE B $^1\Sigma^+$ STATE THROUGH DOUBLE RESONANCE SPECTROSCOPY.

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We have performed new experiments that characterize the outer well of the double minimum B1S+ electronic state of BH in terms of its rotational vibrational level structure. Rovibrational states of BH B $^1\Sigma^+$ are observed as ionization detected absorption features in double resonance scans via the v=3 level of the A $^1\Pi$ state. Experimental observations conform with high level ab initio calculations that determine the position and energy of the internal barrier. This work represents the first observation of the vibrational level structure of the outer well.