ROTATIONALLY RESOLVED ELECTRONIC SPECTRA OF 7-AZAINDOLE AND ITS ARGON COMPLEX: GEOMETRY AND TRANSITION MOMENT ORIENTATION.[a]

CHEOLHWA KANG, JOHN T. YI and DAVID W. PRATT, *Department of Chemistry, University of Pittsburgh, Pittsburgh, PA 15260*.

Rotationally resolved fluorescence excitation spectra of the S_1 (^1L_b) $\leftarrow$ S_0 origin bands of 7-azaindole and its Argon complex have been recorded and analyzed. The derived rotational parameters give information about the geometries of the two molecules in both electronic states. The Argon atom moves when the UV photon is absorbed because there are significant differences in the S_0 and S_1 intermolecular potential energy surfaces. A large rotation of $S_1 \leftarrow S_0$ electronic transition moment of 7-azaindole relative to that of indole gives further information about this solvent reorganization.

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