BENZONITRILE AND ITS WATER COMPLEX: THE $S_1 \leftarrow S_0$ SPECTRUM AT ROTATIONAL RESOLUTION. [a]

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The high resolution $S_1 \leftarrow S_0$ electronic spectrum of benzonitrile-water has been recorded in a molecular beam. The spectrum is split into two subbands with a 3:1 intensity ratio separated by 53 MHz. Analysis of this splitting leads to values of the barrier height in both electronic states. The barrier and the position of the water molecule will be used to discuss the bonding between the two subunits. Analysis of other benzonitrile complexes and of the change in the benzonitrile dipole moment upon excitation will be used to further characterize the structure of the complexes in both electronic states.

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