HIGH RESOLUTION SPECTRUM OF THE 1,2-DIMETHOXYBENZENE/D_2O COMPLEX [a]

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The rotationally resolved $S_1 \leftarrow S_0$ electronic spectrum of the 1,2-dimethoxybenzene/D_2O complex has been analyzed. The D_2O complex appears 126 cm^{-1} to the blue of the bare molecule origin. The complex spectrum exhibits two subbands separated by 45 MHz. These spectra have an intensity ratio of 2 to 1, with the stronger band shifted to lower frequency. Possible motions of the water molecule that are suggested by these data will be discussed.

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