NEAR INFRARED SPECTROSCOPY OF DEUTERIO-BROMOMETHYLENE

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The $\tilde{A}^1A^e (0,1,0) \leftarrow \tilde{X}^1A' (0,0,0)$ electronic band system of DCBr has been measured in the region $11720 \text{cm}^{-1}$ to $11780 \text{cm}^{-1}$. Spectra were recorded using a transient absorption frequency modulation Ti:Sapphire spectrometer incorporating a multipass Herriott-type cell for increased sensitivity. The $(K = 0 \leftarrow K = 1)$ and $(K = 1 \leftarrow K = 0)$ sub-bands of both isotopomers, DC$^{81}$Br and DC$^{79}$Br, have been assigned and spectroscopic parameters determined. Transitions involving levels from higher $K$ states are visible but their assignments are complicated by a variety of perturbations (vibronic, spin-orbit, coriolis, fermi resonance) involving the two singlet states and a background triplet state.

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