NEAR INFRARED SPECTROSCOPY OF DEUTERO-BROMOMETHYLENE

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The $\tilde{A}^1A''$ (0,1,0) $\leftarrow$ $\tilde{X}^1A'$ (0,0,0) electronic band system of DCBr has been measured in the region $11\,720\,\mathrm{cm}^{-1}$ to $11\,780\,\mathrm{cm}^{-1}$. Spectra were recorded using a transient absorption frequency modulation Ti:Sapphire spectrometer[a] incorporating a multipass Herriott-type cell for increased sensitivity.[b] 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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