FAR-INFRARED LASER MAGNETIC RESONANCE SPECTROSCOPIC STUDY OF THE $\nu_2$ BENDING FUNDAMENTAL OF THE CCN RADICAL IN ITS $\tilde{X}^2\Pi_r$ STATE

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Vibration-rotation transitions between the (010) $\mu^2\Sigma^-$ - (000) $\tilde{X}^2\Pi_r$ vibronic states, were recorded using far-infrared laser magnetic resonance (FIR-LMR) spectroscopic techniques. These transitions occur near 200 $cm^{-1}$ for the (010) $\mu^2\Sigma^-$ - (000) $\tilde{X}^2\Pi_{1/2}$ transition and 160 $cm^{-1}$ for the (010) $\mu^2\Sigma^-$ - (000) $\tilde{X}^2\Pi_{3/2}$ transition. This is the first direct measurement of the $\nu_2$ band of CCN and in conjunction with a fit of optical data, similar to the one found in the paper by Kohguchi et al.,[a] has resulted in an accurate determination of the bending vibration frequency and the Renner parameter. The data were fit using an $N^2$ effective Hamiltonian modified to include the Renner-Teller effect.

[a]H. Kohguchi, Y. Ohshima, Y. Endo, J. Chem. Phys. **106**, 5429 (1997).