FAR-INFRARED LASER MAGNETIC RESONANCE SPECTROSCOPIC STUDY OF THE ν_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 $\mathrm{cm}^{-1}$for the (010) $\mu^2\Sigma^-$ - (000) $\tilde{X}^2\Pi_{1/2}$ transition and 160 $\mathrm{cm}^{-1}$for the (010) $\mu^2\Sigma^-$ - (000) $\tilde{X}^2\Pi_{3/2}$ transition. This is the first direct measurement of the ν_2 band of CCN and with the inclusion of optical data, similar to the one found in the paper by Kohguchi et al.,[a], microwave data from Ohshima and Endo[b], and spin-orbit data[c] a least squares fit has resulted in an accurate determination of molecular parameters for the ground and the (010) $\mu^2\Sigma^-$ states. 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).
[b]Y. Ohshima and Y. Endo, *J.Molec.Spectros.* **172**, 225-232 (1995).
[c]Calculated from data reported in M. Kakimoto and T. Kasuya, *J.Molec.Spectros.* **94**, 380-392 (1982) and K. Kawaguchi, T. Suzuki, S. Saito, and E. Hirota, *J.Molec.Spectros.* **106**, 320-329 (1984).