

## ZEEMAN TUNING RATES IN THE $\nu_3$ BAND OF $\text{NO}_2$

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Zeeman spectra of the  $\nu_3$  fundamental (at  $\sim 1620 \text{ cm}^{-1}$ ) of nitrogen dioxide ( $^{14}\text{NO}_2$ ) have been recorded with magnetic fields of  $\sim 500$  Gauss using a FTS (at the Kitt Peak National Observatory), as well as a tunable diode laser. At low magnetic fields the Zeeman effect is small compared to the spin-rotation interaction, and the Zeeman tuning rates are expected to be linear with magnetic field. Measured tuning rates of the Q-branch ( $K_A = 2 - 9$ ,  $N = 2 - 16$ )  $\sigma$  transitions are compared to those expected for  $^2\Sigma$  transitions in low magnetic fields,  $\sim 2\mu_0 gB/(2N+1)$ . These measurements are required in the data analysis of an ultra-sensitive (pptv) *in situ* detector based on magnetic-rotation spectroscopy.