HIGH-RESOLUTION FOURIER-TRANFORM SPECTRA OF THE NO_2 A–X ELCTRONIC BANDS AROUND 1 μm

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The strong vibronic interactions between the A and X electronic states lead to a complex structure of the NO_2 spectrum in the visible and near-IR. The long-wavelength tail of the spectrum is very weak due to small Franck-Condon factors. In 1965, *Douglas and Huber*[a] recorded the first low-resolution spectra of the NO_2 bands in the near infrared. In 1975, *Brand et al.*[b] showed that "hot" bands are important in this region.

In the past, many high-resolution spectra of NO_2 were recorded, however no rotationally resolved spectra of this important region were reported up to now. We present high-resolution spectra of the first vibronic bands of NO_2 starting around 9740 cm^{-1}, and discuss vibrational assignments. The dense rotational structure is very difficult to assign, although accurate lower-state energies are available from high-resolution infrared spectra[c].

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[b] J. C. D. Brand, W. H. Chan, and J. L. Hardwick, *J. Mol. Spectrosc.* **56**, 309 (1975)

[c] A. Perrin, C. Camy-Peyret, and J. M. Flaud, *J. Quant. Spectrosc. Rad. Transfer* **48**, 645 (1992)