SIMULATION OF THE 22μ INFRARED HOT BANDS OF NITRIC ACID FROM THE ANALYSES OF ROTATIONAL SPECTRA

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Resent results of millimeter and submillimeter wave rotational spectroscopy of the $\nu_5/2\nu_9$ states of nitric acid[a] are used to simulate the complex structure of the $2\nu_9 - \nu_9$ and $\nu_5 - \nu_9$ hot bands near 22μ. The comparison data were obtained with a high resolution Bruker FTIR at various pressures and a temperature of 297 K. The combination of the quality and resolution of the infrared data and the complexity of the spectra of these interacting states represents a stringent test for the simulation. It is shown that the agreement is very good and that this approach is generally advantageous.

[a]D. T. Petkie, T. M. Goyette, P. Helminger, H. M. Pickett, and F. C. De Lucia, J. Mol. Spectrosc. 208, 121-135 (2001).