

THE HIGH RESOLUTION FTIR SPECTRUM OF THE ν_3 FUNDAMENTAL OF THE CIS CONFORMER OF METHYL NITRITE

LISA M. GOSS , *Department of Chemistry, Idaho State University, Campus Box 8023, Pocatello ID, 83209;*
THOMAS A. BLAKE, *Pacific Northwest National Laboratory, P. O. Box 999, Mail Stop K8-88, Richland, WA 99352.*

Methyl nitrite (CH_3ONO) contains a mixture of cis and trans rotational isomers. As in the ν_8 and ν_9 vibrations of the cis form, the ν_3 vibration is not too congested, consistent with the high barrier to rotation of the methyl group in the cis form. The ν_3 , with an origin at $1620. \text{ cm}^{-1}$, has been assigned by previous workers to the N=O stretch of the cis conformer and hot bands are also present in this region. In this study, a spectrum taken at 0.0015 cm^{-1} resolution on the PNNL IFS120/HR in a 20 cm cell was used to assign more than 300 A-type transitions of the cis ν_3 between 1600 and 1650 cm^{-1} and a set of excited state constants was determined.