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

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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. 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.