FOURIER TRANSFORM INFRARED SPECTRA OF FORMALDOXIME: THE ν_7, ν_9, ν_{11}, ν_{12}, AND $2\nu_{12}$, BANDS

G. DUXBURY[a], G. RITCHIE, *Department of Physics and Applied Physics, Strathclyde University, Glasgow G4 0NG,Scotland,UK*; R. A. BANNAI, *Department of Physics, University of Bahrain, PO. Box: 32038, Bahrain*; S. KLEE, *Physikalisch-Chemisches Institute der Justus-Liebig Universität, D-6300 Giessen, Germany.*

A first full rotational analysis of high resolution gas phase spectra of the lowest frequency fundamental bands, ν_9 and ν_{12}, of formaldoxime, CH_2NOH, has been completed. In addition the weak ν_7 fundamental has been analysed at medium resolution, and the complex structure of the bands in the ν_{11} and $2\nu_{12}$ region has been revealed. It is shown that the complexity of the spectrum of the latter region is due to Coriolis interaction between the overtone $2\nu_{12}$ and the fundamental band ν_{11}. The region covered in this analysis is from 8-30 μm. Since the molecule has Cs symmetry, in principle all the bands of A' symmetry are AB hybrids. Although the ν_4, ν_5, ν_6, and ν_8 fundamental bands described previously are predominantly A type, the ν_7 band is found to be almost a pure B-type band. The ν_{11} and ν_{12} bands are C-type bands . The band origins (cm^{-1}) are ν_7 1157.282 ν_9 530.01785 ν_{11} 772.78, ν_{12} 397.68499 and $2\nu_{12}$ 778.517.

[a]visiting fellow at JILA