ROTATION-VIBRATIONAL ANALYSIS OF THE BANDS OF FORMALDEHYDE FALLING IN THE 3900 TO 5300 CM^{-1} REGION

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Spectral lines of formaldehyde have been observed in urban atmospheres as well as over forest fires. In the spectrum of the overtone region of CH_2O between 3900 to 5100 cm^{-1}, there are a myriad of interacting bands linked by both anharmonic and Coriolis resonances. An initial study of some of the bands in this region has been made by Tipton *et al.*[a] We have greatly extended their study and successfully treated most of the interactions. At this point the lines of about seven bands have been assigned and fit, in addition, numerous lines arising from dark states have been identified. The standard deviations of the fittings are about 0.004 cm^{-1} about four times the experimental uncertainty.

[a] T. Tipton, C. L. Choe, and R. Hubbard, *J. Molec. Spectrosc.* **114,** 239–256 (1985)