HIGH RESOLUTION ANALYSIS OF THE ν_6, ν_7, ν_8 AND ν_9 BANDS OF $H^{15}NO_3$

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The analysis of the ν_6, ν_7, ν_8 and ν_9 bands of $H^{15}NO_3$ located at 646.9641, 578.4719, 743.6166 and 458.2917cm^{-1} respectively has been carried out in the 400-800cm^{-1} region using high resolution Fourier transform spectra recorded at Ottawa. Using the ground state energy levels calculated from the v=0 rotational constants of $H^{15}NO_3$ [a], it was possible to assign the A-type ν_6 and ν_7 bands and the C-type ν_8 and ν_9 bands of $H^{15}NO_3$ up to high J and K_a rotational quantum numbers. The v_6=1, v_7=1, v_8=1 and v_9=1 experimental energy levels were then introduced in a least squares fit calculation and precise upper state Hamiltonian constants (band centers and rotational constants) were determined allowing one to reproduce the infrared data to within the experimental uncertainty.

[a] A.P.Cox, M.C.Ellis, C.J.Attfield and A.C.Ferris, J. of Mol. Struct. 320, 91 (1994)