

# HIGH RESOLUTION ANALYSIS OF THE $\nu_1$ AND $\nu_3$ BANDS OF THE $^{17}\text{O}^{17}\text{O}^{16}\text{O}$ AND $^{17}\text{O}^{16}\text{O}^{17}\text{O}$ ISOTOPIIC SPECIES OF OZONE IN THE 10 $\mu\text{m}$ REGION

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Using  $0.002\text{cm}^{-1}$  Fourier transform absorption spectra of  $^{17}\text{O}$ -enriched sample of ozone, an extensive analysis of the  $\nu_3$  band together with a partial identification of the  $\nu_1$  band of the  $^{17}\text{O}^{17}\text{O}^{16}\text{O}$  and  $^{17}\text{O}^{16}\text{O}^{17}\text{O}$  isotopic species of ozone has been performed in the 10  $\mu\text{m}$  region. The experimental rotational levels of the (001) and (100) vibrational states could be reproduced using an Hamiltonian matrix which takes into account the expected rovibrational resonances. As for the other  $\text{C}_s$ -type ozone isotopomers<sup>a</sup>, the (001) rotational levels of  $^{17}\text{O}^{17}\text{O}^{16}\text{O}$  are involved in both Coriolis and Fermi type resonances with the levels from the (100) vibrational state. On the other hand, for the  $^{17}\text{O}^{16}\text{O}^{17}\text{O}$   $\text{C}_{2v}$ -type isotopomer, only C-type Coriolis resonances have to be considered. Using an Hamiltonian matrix which takes into account these resonances for the (001)-(100) off-diagonal blocks, and an A-type Watson operator for the diagonal blocks, precise vibrational energies and rotational and coupling constants are deduced.

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<sup>a</sup>J.-M.Flaud and R.Bacis, *Spectrochimica Acta*, **A54**, 3 (1998)