NEW RESULTS ON THE LOWEST LYING ELECTRONICALLY EXCITED STATES $^3A_2$ AND $^3B_2$ OF OZONE

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The three low lying excited triplet states $^3A_2$, $^3B_2$ and $^3B_1$ may have an impact on the observed anomalies of ozone concerning recombination kinetics, heavy isotope enrichment, photochemistry and atmospheric chemistry. Transitions to two of them - $^3A_2$ and $^3B_2$ - have been measured by Intracavity Laser Absorption Spectroscopy (ICLAS). In the former case single resolved rovibrational lines belonging to the (000) and (010) vibrational levels could be assigned, whereas in the latter case only broad absorption features are observed. The analysis has been performed by using an Hamiltonian explicitly taking into account spin-rotation and spin-spin coupling. The ozone molecule seems to follow a case (B) coupling behaviour. In the case of $^3B_2$ band contour simulations using the same formalism have been compared with the measured band contour of the considerably broadened spectrum. From this approach average life times in the order of 1-10 ps have been estimated. The obtained molecular parameters are in good agreement with predictions from ab initio calculations.