THE STRUCTURE OF CO_2-N_2O DETERMINED BY FOURIER TRANSFORM MICROWAVE SPECTROSCOPY OF THE $^{15}N^{14}NO$-CONTAINING ISOTOPOMER

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In both the infrared [a] and previous microwave [b] studies of the van der Waals molecule $CO_2 - N_2O$, it was impossible to resolve experimentally the structural ambiguity concerning the orientation of the N_2O subunit in this approximately slipped parallel complex. Isotopic substitution of the outer nitrogen in the N_2O results in a microwave spectrum that is consistent with a structure in which the terminal oxygen of the N_2O is closer to the central carbon of the CO_2. Substitution coordinates derived from Kraitchman's equations support this conclusion. This experimentally determined structure is in agreement with the conclusion reached on the basis of *ab initio* results used in conjunction with the earlier infrared work.[a]

[a] C. Dutton, A. Sazonov, and R. A. Beaudet, *J. Phys. Chem.* **100,** 17772 (1996).
[b] H. O. Leung, *J. Chem. Phys.* **108,** xxxx (1998).