

THE STRUCTURE OF CO₂-N₂O DETERMINED BY FOURIER TRANSFORM MICROWAVE SPECTROSCOPY OF THE ¹⁵N¹⁴NO-CONTAINING ISOTOPOMER

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In both the infrared ^a and previous microwave ^b studies of the van der Waals molecule CO₂ – N₂O, it was impossible to resolve experimentally the structural ambiguity concerning the orientation of the N₂O subunit in this approximately slipped parallel complex. Isotopic substitution of the outer nitrogen in the N₂O results in a microwave spectrum that is consistent with a structure in which the terminal oxygen of the N₂O is closer to the central carbon of the CO₂. 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

^aC. Dutton, A. Sazonov, and R. A. Beaudet, *J. Phys. Chem.* **100**, 17772 (1996).

^bH. O. Leung, *J. Chem. Phys.* **108**, xxxx (1998).