INFRARED SPECTRUM OF THE $(CO_2)_2$-N_2O TRIMER MEASURED IN N_2O ν_1 AND ν_3 REGIONS.

J. NOROOZ OLIAEE, N. MOAZZEN-AHMADI, *Department of Physics and Astronomy, University of Calgary, 2500 University Dr., N.W., Calgary, Alberta T2N 1N4, Canada*; A.R.W. McKELLAR, *National Research Council of Canada, Ottawa, Ontario, K1A 0R6, Canada*.

Infrared spectra of the $(CO_2)_2$-N_2O trimer are observed by exciting the ν_1 and ν_3 fundamental stretching vibrations of the N_2O moiety (around 1285 cm^{-1} and 2224 cm^{-1} respectively). Spectra are recorded using a pulsed supersonic jet apparatus with a tunable diode laser probe. Ground state parameters were previously determined from a microwave study.[a] Analysis of the infrared spectra reveals information on the vibrational shifts upon complex formation as well as molecular parameters for the excited states. Our cluster calculation program yields a minimum energy structure very similar to that from the Orient program[a] but in slightly better agreement with the experimental structure. Our cluster calculations indicate a close resemblance of the two lowest energy isomers to those of $(CO_2)_2$-OCS.

[a] R. A. Peebles, S. A. Peebles, and R. L. Kuczkowski *Mol. Phys.* **96**, 1355 (1999).