THE MICROWAVE ROTATIONAL SPECTRUM OF THE Ne-N_2O VAN DER WAALS COMPLEX

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Rotational spectra of six isotopomers of the van der Waals dimer Ne-N_2O were measured in the frequency range from 5 to 18 GHz using a pulsed beam cavity Fourier transform spectrometer. The spectra indicate that the complex is a prolate near symmetric rotor with a T-shaped structure. The Ne atom is on average closer to the O atom than to the terminal N atom. Both a- and b-type transitions were measured. The nuclear quadrupole hyperfine pattern due to two ^{14}N nuclei were resolved. Rotational and centrifugal distortion constants were determined, as well as the nuclear quadrupole coupling constants $\chi_{aa}(1)$, $\chi_{bb}(1)$, $\chi_{aa}(2)$, $\chi_{bb}(2)$. Effective values for the distance from the center of mass of the N_2O subunit to the Ne atom, and for the angle between this distance and the N_2O axis were obtained.