INFRARED DIODE LASER SPECTROSCOPY OF N_2O CLUSTERS IN THE N-O STRETCHING REGION

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The high resolution infrared spectrum of the polar N_2O dimer has been observed in the region of N-O stretching fundamental using a tunable diode laser to probe a pulsed supersonic slit jet. An a/b type hybrid band has been assigned and fitted to a planar asymmetric top with slipped parallel structure. The vibrational origin is measured to be 1290.2 cm^{-1} showing a blue shift of 5.3 cm^{-1} from the monomer band origin and 10.5 cm^{-1} from the band origin of the non-polar isomer. The band for the non-polar isomer has also been remeasured and analysed in improved detail. In addition, two trimer bands of N_2O, located at 1276.56 cm^{-1} and 1285.78 cm^{-1}, have been observed and assigned with a/c and a-type transitions, respectively.