SPECTROSCOPIC STUDY OF THE MIXED RARE GAS - MOLECULE TRIMER NeArHCl

YUNJIE XU, GEOFFREY ARMSTRONG, and WOLFGANG JÄGER, *Department of Chemistry, University of Alberta, Edmonton, AB, Canada, T6G 2G2*.

Rotational spectra of various isotopomers of the NeArHCl trimer, including those with $H^{35}Cl$, $H^{37}Cl$, $D^{35}Cl$, $D^{37}Cl$, ^{20}Ne, and ^{22}Ne were studied with a pulsed jet cavity Fourier transform microwave spectrometer. Both a- and b-type transitions could be measured in the frequency range from 3.8 to 17 GHz. Nuclear hyperfine structures due to ^{35}Cl, ^{37}Cl, and D were observed and analyzed. The resulting spectroscopic constants were used to derive effective structural parameters.
The possibility to gain insight into non-additive contributions to the interaction energy through comparison with NeHCl, ArHCl, and Ar_2HCl is discussed.