SPECTROSCOPIC STUDY OF THE MIXED RARE GAS - MOLECULE TRIMER NeArHCl

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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.