

THE BROADBAND ROTATIONAL SPECTRUM AND GEOMETRY OF $\text{N}_2 \cdots \text{ICF}_3$

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The rotational spectra of two isotopologues of $\text{N}_2 \cdots \text{ICF}_3$ have been measured between 7 and 18.5 GHz by chirped-pulse Fourier transform microwave spectroscopy. The rotational constant, B_0 , the centrifugal distortion constants, D_J and D_{JK} , and the nuclear quadrupole coupling constant of ^{127}I are precisely determined for isotopologues containing $^{14}\text{N}_2$ and $^{15}\text{N}_2$ respectively. The complex is a symmetric top and contains a linear arrangement of C, I, N(1) and N(2) atoms. The length of the halogen bond between N(1) and I will be presented. Experiments which exploit a Balle-Flygare FTMW spectrometer are currently in progress to determine the nuclear quadrupole coupling constants of the ^{14}N nuclei.