

## VIBRATIONAL SPECTRA OF CHLOROFORM, FREON-11 AND SELECTED ISOTOPOMERS IN THE TERAHERTZ REGION

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The fundamental bands of the CCl<sub>3</sub> asymmetric deformation modes of selected isotopomers of chloroform (CHCl<sub>3</sub>) and freon-11 (CFCl<sub>3</sub>) have been measured between 7 and 8 THz in a static cell at ambient temperature using a laser-based source of tunable radiation in the terahertz region (0.1-10 THz) of the electromagnetic spectrum. Simulation of the rotational contour of the  $\nu_6$  fundamental transition of <sup>12</sup>CH<sup>35</sup>Cl<sub>3</sub> confirmed previously suggested values for  $C_6$  and  $C_6\zeta_6$ .<sup>b</sup> The fundamental frequencies were derived with a precision of 2 GHz for all compounds except CF<sup>35</sup>Cl<sub>3</sub>, where the precision amounted to 3 GHz. The frequencies are in agreement with values calculated *ab initio*. Extension of the experimental setup to enable measurement of THz spectra of molecules in supersonic jet expansions and partially resolve their rotational structure is in progress.

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