

**High resolution analysis and quantum dynamics of fluoroform <sup>12,13</sup>CHF<sub>3</sub>**

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The spectroscopy of <sup>12</sup>CHF<sub>3</sub> has been the basis for the study of time independent and time dependent quantum dynamics for a long time [1-9]. There have also been substantial efforts concerning the *ab initio* potential hypersurface ([10, 11] and references cited therein). We present a survey of our recent analyses ranging from the Terahertz (Far infrared) spectral range to about 3000 cm<sup>-1</sup>, with particular emphasis on the pure rotational (FIR) spectra measured at the infrared beamline of the Swiss synchrotron Light Source (SLS),  $\nu_3$  fundamental (700 cm<sup>-1</sup> range), the  $\nu_2$ ,  $\nu_5$ ,  $\nu_3+\nu_6$  polyad (1200 cm<sup>-1</sup> range), the  $\nu_4/2\nu_3$  dyad (1400 cm<sup>-1</sup>), the  $2\nu_4$  (*A*<sub>1</sub> and *E*) dyad and results on the <sup>13</sup>CHF<sub>3</sub> isotopomer including the  $\nu_1$  fundamental. The implications for the study of intramolecular vibrational energy redistribution (IVR) will be outlined with particular emphasis on <sup>13</sup>C isotope effects.

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