

## ANTI-HYDROGEN BONDING INTERACTION IN TETRAFLUOROMETHANE-WATER

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The rotational spectrum of the tetrafluoromethane-water ( $\text{CF}_4\text{-W}$ ) complex has been assigned in a supersonic expansion through millimeter wave absorption spectroscopy. In order to reach the best experimental conditions mixtures with rather high concentrations of  $\text{CF}_4$  (up to 20-30 per cent) in Ar at a pressure of 50 kPa were flown at room temperature and expanded to about 1 Pa through a pulsed nozzle with a 0.35 mm diameter. All measured isotopomers ( $\text{CF}_4\text{-H}_2\text{O}$ ,  $\text{CF}_4\text{-H}_2^{18}\text{O}$ ,  $\text{CF}_4\text{-D}_2\text{O}$ ,  $\text{CF}_4\text{-DOH}$ ) display symmetric top (prolate) spectra, because of the nearly free rotation of the water subunit with respect to  $\text{CF}_4$ . The first two isotopomers are split into two component lines due to an internal rotation of water along its  $\text{C}_2v$  axis. The water is linked to  $\text{CF}_4$  by a C-F—O, anti hydrogen bond, interaction (see below).

