MICROWAVE SPECTRUM AND MOLECULAR STRUCTURE OF 2,3,3,3-TETRAFLUOROPROPENE–HYDROGEN CHLORIDE

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Our systematic study of the structures of heterodimers of haloethylenes with protic acids has provided a wealth of information, along with a few surprises, regarding the sometimes cooperative and sometimes competing effects of electrostatic, steric, and dispersion forces that contribute to the binding of these species. We seek to apply this knowledge to larger systems with a wider variety of possible interactions and binding sites via the addition of a trifluoromethyl moiety to the olefin to form halopropenes. The microwave spectrum of the complex formed between 2,3,3,3-tetrafluoropropene, which can be considered a trifluoromethyl analogue of vinyl fluoride, and hydrogen chloride is obtained and analyzed to determine the molecular structure of this species.