MICROWAVE SPECTROSCOPY OF BUTAN-2-OL - CONFORMATIONS, COMPLEXES AND CLUSTERS.

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The first rotationally-resolved spectrum of a van der Waals complex formed between two chiral molecules will be presented. The complex is a hetero-chiral dimer of butan-2-ol and the spectrum was observed by Fourier Transform Microwave Spectroscopy in a supersonic expansion.[a] The results of the ab initio calculations used to identify the dimer will also be presented.

The microwave spectrum of a complex formed between a butan-2-ol molecule and an argon atom will also be discussed, including a limited amount of structural analysis.[b]This too will be accompanied by an ab initio study. Finally, mention will be made of the detection of six of the nine possible conformational isomers of the butan-2-ol molecule in expansions of argon and helium.[c]

There are still a large number of unassigned lines in the spectrum of butan-2-ol, some of which must be due to the homo-chiral dimer. Work to assign them is ongoing, any new results will be presented.

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[a] A. K. King and B. J. Howard *Chem. Phys. Lett.* **348**(343), 2001.

[b] A. K. King and B. J. Howard *J. Mol. Spectrosc.*, Submitted for publication.

[c] A. K. King and B. J. Howard *J. Mol. Spectrosc.* **201/1**(38), 2001.