

## STRUCTURES OF MICROSOLVATED CAMPHOR FROM BROADBAND ROTATIONAL SPECTROSCOPY

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Using broadband rotational spectroscopy, we will present our results on the microsolvation of camphor ( $\text{C}_{10}\text{H}_{16}\text{O}$ ) complexed with up to three water molecules.<sup>a</sup> Unambiguous assignment was achieved by performing multi  $\text{H}_2^{18}\text{O}$  isotopic substitution of clustered water molecules. The observation of all possible mono- and multi- $\text{H}_2^{18}\text{O}$  insertions in the cluster structure yielded accurate structural information that is not otherwise achievable with single-substitution experiments. The observed clusters exhibit water chains starting with a strong hydrogen bond to the carbonyl group and terminated by a mainly van der Waals (dispersive) contact to one of the available sites at the monomer moiety. The effect of hydrogen bond cooperativity is noticeable, and will be also discussed.

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