

## How is water structured?

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The properties of liquid water are difficult to predict. They are particularly unpredictable under real conditions where the water contains solutes and interacts with solid and gaseous surfaces. It is useful to have models that can explain existing physical properties and aid the understanding of new observations concerning aqueous solutions and systems. Such models should, preferably be conceptually simple, widely and easily applicable, and fit comfortably with current knowledge. Eight years ago, I published a simple model for water [1] that fitted well with the data available at the time and allowed straightforward insight into many puzzling aqueous phenomena. Initially this talk will describe how later work has influenced the appreciation of this and other water models and how well these models fit with recent developments concerning the structure of liquid water and its solutions.

This modeling approach will then be taken further to show how it may aid the understanding of aqueous interfaces and the very small gas cavities in water (nanobubbles) that are surprisingly found at certain surfaces and in the bulk phase of some aqueous solutions. Finally, the possible large scale structuring in liquid water is discussed.

1. Chaplin, M. F., (2000) A proposal for the structuring of water. *Biophys. Chemist.*, **83** (3), 211-221.