

The spatial organization of the giant clusters of distilled and deionized natural water

© Yury I. Sucharev,^{*+} Oksana M. Krutikova, Michail B. Azarov, and Tatiana I. Prolubnikova

Department of Colloidal and Coherent Chemistry. Chelyabinsk State University. Br. Kashirins St., 129.

Chelyabinsk, 454000. Russia. Phone: +7 (351) 799-70-63. E-mail: yuri_sucharev@mail.ru

^{*}Supervising author; ⁺Corresponding author

Keywords: *gigantic heterophase water clusters, bidistillate, deionized water, chaotic attractor, strange nonchaotic attractor, Ratchet potential, structure of clusters, Poincaré section, the separatrix web, caustics, Whitney acoustic, Whitney singularity theory, cluster size of water, stochastic, spiral-shaped conformations, edges of regression, nonlinear resonance, cluster.*

Abstract

It is interesting that the free, unbound associates of water molecules are present in the water only in very small quantities. In general, water, as researchers have shown is the aggregate of random associates and "Water Crystals", where the number of molecules associated by hydrogen bonds can be hundreds or even thousands of units.

These water units may have very different shapes, both spatial and two-dimensional (in the form of ring structures). The basis of the geometry of these structures is tetrahedron. It is the form the distributed positive and negative charges have in the molecule of water. In grouping, the tetrahedrons of H₂O molecules form a variety of spatial and planar structures. And among this variety of structures in the nature, the basic one, apparently (the hypothesis not exactly proved yet), is the only one hexagonal (hex) structure, in which six water molecules (tetrahedrons) are combined into a ring. To study the structure of these formed polymers of water was quite difficult since water is a mixture of different polymers, which are in quasi-equilibrium with each other. Colliding with each other, the polymers transfer one into another, decompose and re-form.