

# RESOLV: VORTRAGSANKÜNDIGUNG

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## "Variety of water states in heterogeneous materials"

Abstract:

Water is the universal solvent in nature. Does this imply, however, that its interaction with its environment is also a universal feature? While this question maybe too fundamental to be answered by one method only, we present evidence that in the broadening of dielectric spectra of water one can define universal features of dipolar interactions with different types of matrixes. If in aqueous solutions the starting point of water state considered as a bulk one, which interacts with the solute only partially, the state of water adsorbed in heterogeneous materials is determined by various hydration centers of inhomogeneous material (the matrix) and is significantly different from the bulk. In both cases, the dielectric spectrum of water is symmetrical and can be described by Col-Cole (CC) function. A new phenomenological approach has been recently presented that clarifies a physical mechanism of the dipole-matrix interaction in complex systems underlying the CC behavior [1]. This phenomenological consideration has been applied to water adsorbed in porous glasses and then was extended to analyses of dynamic and structural behavior of water in nonionic and ionic aqueous solutions [2,3,4]. We'll present the similar relaxation processes and the analyses in terms of CC dispersion that observed in clays, hydrated powders of proteins and water/glycerol mixtures.

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- [4] A. Puzenko, E. Levy, A. Caduff, M. S. Talary and Yu. Feldman, J. Chem. Phys. (2012) **137**, 194502-8.

Alle Interessenten sind zur Teilnahme am Vortrag herzlich eingeladen.