1. Record Nr. UNINA9910797482203321

Titolo	Water : fundamentals as the basis for understanding the environment and promoting technology / / edited by P. G. Debenedetti and M. A. Ricci and F. Bruni
Pubbl/distr/stampa	Amsterdam, Netherlands : , : IOS Press, , 2015 ©2015
ISBN	1-61499-507-9
Descrizione fisica	1 online resource (263 p.)
Collana	International School of Physics 'Enrico Fermi' ; ; v.187
Disciplina	546.22
Soggetti	Water Water - Analysis
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	""Title page""; ""Contents""; ""Preface""; ""Course group shot""; ""Experimental tests of the liquid-liquid phase transition hypothesis""; ""Water and its relatives: The stable, supercooled and particularly the stretched regimes""; ""Introduction""; ""Liquid domains and stable states""; ""Hydrogen bonds and anomalies of water""; ""High pressure""; ""Properties of supercooled water and solutions""; ""The second-critical-point hypothesis and the problem of its location""; ""Validity of the second-critical-point hypothesis""; ""Is water unique? Brothers and cousins"" ""Stretched water: negative-pressure investigations""""""Hard data in the negative-pressure domain""; ""A modified van der Waals model for stretched liquids""; ""Concluding commentary""; ""Atmospheric water""; ""Introduction""; ""General structure of the Earth's atmosphere""; ""Condensed phases of water in the atmosphere""; ""Pure water phases""; ""Introduction to aerosol particles""; ""Phase transitions of water""; ""Cooling processes leading to supersaturation""; ""Gas-to-liquid transition: liquid-water droplets from water vapor"" ""Liquid-to-ice transition: ice crystals from supercooled water droplets""""""Homogeneous ice nucleation in pure water""; ""Heterogeneous ice nucleation in pure water""; ""Implications: the Wegener-Bergeron-Findeisen process""; ""Ice nucleation in haze

particles""; ""Homogeneous ice nucleation""; ""Heterogeneous ice nucleation (immersion freezing)""; ""Kinetic state diagram of atmospheric humidity""; ""X-ray spectroscopy, scattering and simulation studies of instantaneous structures in water""; ""The inhomogeneous structure hypothesis""; ""Two local distinct structures""; ""X-ray spectroscopy""
""Connecting XAS/XRS and XES""""Peak shifts with temperature""; ""Comparing effects of temperature with adding salts""; ""Consistency with vibrational spectroscopy""; ""The nature of the distorted species; understanding XAS/XRS""; ""The pre-edge""; ""The main edge""; ""Interpretation of XAS/XRS: Newns-Anderson model""; ""The inherent structure in MD simulations""; ""Density fluctuations""; ""Normal and anomalous contributions to kappa_T""; ""Compressibility in MD models""; ""Density inhomogeneities and Small-Angle X-ray Scattering""; ""Small-Angle X-ray Scattering (SAXS)""
""Qualitative understanding of SAXS data""""The relation between correlation length and spatial extent""; ""Anticorrelation between tetrahedrality and density""; ""Wide-angle scattering and pair-correlation functions g_OO(r)""; ""Correlations at intermediate range (6-15 angstrom)""; ""Temperature dependence of intermediate-range correlations""; ""The first O-O peak""; ""The HDL local structure""; ""Concluding remarks""; ""Spectroscopy and modeling of aqueous interfaces""; ""SHG as a surface probe""; ""Langmuir models for interfacial adsorption""; ""The 1:1 exchange model""
""The effects of water exchange in the exchange model""