

X-ray scattering on supercooled water and amorphous ice

Friday 15 November 2024 09:00 (20 minutes)

“Unravelling the fundamental properties of water and water’s phase diagram is highly relevant for our understanding of water in our environment. Moreover, amorphous ice was predicted to occur under summer mesospheric conditions, prior to crystallising into hexagonal ice. Since the discovery of two distinct amorphous states of ice with different density (high- and low-density amorphous ice, HDA and LDA) it has been discussed whether and how this phenomenon of polyamorphism at high pressures is connected to the occurrence of two distinct liquid phases (HDL and LDL). An important question in this context is if and how these different states of water are related to the anomalous bulk properties of water.

Our studies give insight to the structural and dynamical properties of different amorphous ices, their glass transition and subsequent crystallization. In my talk I will present recent X-ray experiments on supercooled water derived from amorphous ices, including XFEL based experiments as well as X-ray photon correlation spectroscopy.”

Significance

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Session Classification: Liquids and liquid interfaces