Structural Relationships between Amorphous Ices at High Pressure

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The various forms of amorphous ice provide the principal experimental tests of the proposal that supercooled liquid water undergoes a first order liquid-liquid transition at pressure [1]. Up to now most experimental studies of these amorphous ices have been performed at ambient pressure on quench recovered samples and results have proved inconclusive and in any case do not probe the pressure range of the proposed transition. We present in-situ neutron diffraction studies of the various forms of amorphous ice which provide for the first time and accurate view of the relationships between the phases.

[1] Poole H., Sciortino F., Essmann U., Stanley H.E., *Nature,* 1992, **360**, 324-328.

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