

Neutron scattering at high pressure

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Neutron scattering, high pressure, crystallography

In this talk I will review the state of the art of neutron scattering under high pressure. Major progress in high pressure techniques and neutron instrumentation during the past decade now allows detailed crystallographic studies on a wide variety of fairly complex systems. The achievable pressures in such studies are several 10 GPa, and measurements under simultaneous high pressure and high temperatures up to 2000 K have been carried out. I will illustrate these possibilities by a number of recent powder neutron diffraction studies on simple molecular solids, minerals, magnetic systems, and even amorphous solids and liquids. Although most of this work concerns techniques exploiting the capability of the “Paris-Edinburgh” high pressure cell, complementary techniques using sapphire and diamond anvil methods will be presented. Prospects of single crystal techniques under high pressure will be discussed.