Sample Environment in Neutron Instrumentation

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Abstract

A broad range of equipments is required to investigate condensed matter under well known physical parameters. These equipments must be designed to fit with the different neutron scattering instruments geometries while ensuring some standardisation minimising the amount of resources required for their operation and maintenance.

The ILL Advanced Neutron Environment Service provides instruments with many cryostats, dilution refrigerators, cryomagnets, continuously loaded pressure cells, clamped cells, humidity chambers, gas-adsorption systems and special devices controlling neutron beam polarisation vectors. These devices are mutually compatible, remotely controllable and can be used on most of the instruments both in the reactor and neutron guide halls.

After a brief account for the organisational aspects (scheduling, liquid cryogens distribution, out-of-hour support), we present the most used equipments and explain how they were designed. We also present the projects currently running in collaboration with several research institues.

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