



The cold neutron three-axis spectrometer IN12 at the ILL

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The cold neutron three-axis spectrometer IN12 is operated by the Juelich Centre for Neutron Science (JCNS) in collaboration with the CEA-Grenoble as a CRG-B instrument at the Institut Laue-Langevin (ILL) in Grenoble, France.

The instrument is situated in the guide hall ILL7 at the end position of a modern state-of-the-art neutron guide.

With a virtual source concept and a double focusing PG monochromator IN12 reaches a peak flux at the sample position of about 10^8 n/sec/cm around $k = 2 \text{ \AA}^{-1}$ with a simultaneously low background and good resolution.

A wavelength range far into the warmish region (max. $k \approx 5.1 \text{ \AA}^{-1}$) is available.

A velocity selector in the guide ensures a clean beam, and a vertical guide changing system with a transmission polarizing cavity guarantees an easy-to-use polarization set-up.

IN12 is one of the rare spectrometers that can use polarization analysis with a Mezei-spin-flipper in combination with horizontal and vertical high magnetic fields.

Different examples will be shown that demonstrate the versatility and excellence of IN12 in condensed as well as soft matter experiments.

In this reactor shutdown of the ILL we plan the installation of a second monochromator using perfectly bent Si(111) crystals. For lowest accessible wavevector range and energy transfer, it will provide a cleaner signal-to-noise ratio, clean tails of the elastic line and better energy resolution.

Its sharper focusing is advantageous when using high field magnets.

In addition the new Si-monochromator can be used also with polarized set-ups achieving excellent resolution in polarized neutron scattering experiments.

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Sitzung Einordnung: Mounting Posters, Beer and light Dinner

Track Klassifizierung: Instrumentation & Data Management