Deutsche Neutronenstreutagung



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Recent Developments and Future Perpectives in Neutron Backscattering on IN16B

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Neutron spectroscopy gives unique insight into microscopic dynamics and excitations in matter. Crystal spectrometers such as IN16B at the Institut Laue-Langevin in Grenoble (France) operating in backscattering provide high energy resolution down to sub-micro-eV. While IN16B serves its international user community for about a decade by now, we continuously strive to improve and extend its capabilities with new developments. In this presentation, we will review past and ongoing projects.

A first upgrade phase has been successfully completed and brought into routine user operation with the socalled BATS option (Backscattering And ToF Spectrometer) which offers an energy transfer range increased by more than one order of magnitude. In parallel, the feasibility for a future construction of an ultra-high energy resolution spectrometer based on GaAs 200 could be demonstrated.

The second key enhancement currently ongoing concerns the installation of a 10m long variable focusing/defocusing neutron guide system for the BATS chopper system. This innovative and unique upgrade is already partially commissioned and brings BATS to its full potential in terms of neutron flux.

Last but not least, we are currently implementing an extension of the instrument's capabilities at low scattering angles, which entails re-designing the low angle analyser section and improvements of the detector arrangement. This will strengthen both the 'classical'high-resolution backscattering as well as the BATS mode on IN16B.

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Sitzung Einordnung: Session 4: Instrumentation and Data Management I (Chairs: Tobias Neuwirth & Artur Gregor Glavic)

Track Klassifizierung: Instrumentation & Data Management