Beitrag ID: **113** Typ: **Poster**

SKADI - Small-Angle Neutron Scattering @ ESS

Dienstag, 17. September 2024 22:40 (20 Minuten)

The Small-K Advanced Diffractometer (SKADI) is a small-angle neutron scattering instrument currently being constructed at the Eurpean Spallation Source (ESS) as a collaboration between the Forschungszentrum Jülich and the Laboratoire Leon Brillouin, France.
I will be general purpose polarized high-flux (7.7×10e8 n s-1 cm-2) and high resolution SANS instrument with a simultaneous Q-range of at least 3 orders of magnitude. It will use the cold spectrum over a wavelength band of 5 Å (10 Å in pulse skipping mode) from the cold moderator of ESS. The resolution will be ΔQ/Q = 1-7 %, depending on the specific chosen wavelength band and location on the detector.
As a general purpose SANS its science case encompasses soft matter, such as biological, medical or polymer samples, over hard matter with magnetic materials and metal samples to material science for virtually any material where the structure on a nanometer scale is of interest. Especially low background or weak scattering materials have been taken into account during the design.
For SKADI a dedicated detector, SoNDe (Solid State Neutron Detector), has been developed. This will allow SKADI to measure the primary beam directly, allowing high resolution access to low Q-values, also for weak scattering samples.
Construction and first installations at the ESS are just now taking place, and the instrument will be ready close to the beam-on-target date of ESS to accept first neutrons.
In this presentation insights into the design process and considerations will be provided, together with unique features of the instrument developed by the instrument team both at LLB and FZJ.

References
[1] JAKSCH, Sebastian, et al. Technical Specification of the Small-Angle Neutron Scattering Instrument SKADI at the European Spallation Source. Applied Sciences, 2021, 11, 8, p. 3620.

[2] JAKSCH, Sebastian, et al. Recent developments SoNDe high-flux detector project. NOP 2017 proceedings. 2018. S. 011019.

Hauptautor: JAKSCH, Sebastian (European Spallation Source ERIC)

Co-Autoren: FRIELINGHAUS, Henrich (Jülich Centre for Neutron Science at MLZ, Forschungszentrum Jülich GmbH, Garching, Germany); HANSLIK, Romuald (Central Institute of Engineering, Electronics and Analytics (ZEA-1), Forschungszentrum Jülich GmbH, 52425 Jülich, Germany); Herr DÉSERT, Sylvain (Laboratoire Leon Brillouin); Herr KOZIELEWSKI, Tadeusz (Forschungszentrum Jülich GmbH - JCNS)

Sitzung Einordnung: Mounting Posters, Beer and light Dinner

Track Klassifizierung: Instrumentation & Data Management