

## Performance comparison of the diffractometers at HBS with instruments on existing medium power spallation/reactor sources

Z. Ma<sup>a</sup>, K. Lieutenant<sup>a</sup>, J. Voigt<sup>a</sup>

<sup>a</sup> Jülich Centre for Neutron Science, Forschungszentrum Jülich, 52425 Jülich, Germany

### Abstract

High Current Accelerator-based Neutron Sources (HiCANS) could provide special opportunities for neutron scattering instruments. At the Jülich Center of Neutron Science (JCNS), a HiCANS facility termed High Brilliance Neutron Source (HBS) has been proposed as the next-generation neutron source when current facilities are no longer in operation [1]. The HBS plans to use a 70 MeV/90mA proton beam impinging on a compact Ta target. With the benefit of the time structure, low background, and flexible, high brilliance moderator set-up, the instruments at the HBS are expected to have a comparable performance with the existing state-of-the-art scattering instruments [2]. In this work, the performance of the diffractometers suggested at HBS is evaluated by using Monte-Carlo simulation and compared with existing instruments at existing medium power spallation or reactor source.

### References

- [1] T. Gutberlet *et al.*, "The Jülich high brilliance neutron source project – Improving access to neutrons," *Phys. B Condens. Matter*, vol. 570, no. December 2017, pp. 345–348, 2019.
- [2] T. Brückel *et al.*, *Conceptual Design Report Jülich High Brilliance Neutron Source (HBS)*, vol. 8. 2020.