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SAGA - a dedicated GISANS instrument for the ESS

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In the evaluation of capability gaps in the initial instrument suite, the European Spallation Source (ESS) has identified a dedicated surface scattering beamline as a high priority for the next phase of instruments. Therefore, a wide consortium, building on the strength in surface and interface science in Sweden, has formed to push for a project to design and construct such an instrument at ESS. The SAGA project is a collaboration with partners from different Swedish universities and aims to deliver a conceptual and technical design for a TOF GISANS (time of flight grazing-incidence small-angle neutron scattering) instrument for the ESS.
Currently, GISANS experiments are strongly limited by the neutron flux that is available at existing neutron sources, which leads to measurement times of multiple hours up to days. Using the high source brightness of ESS, these measurement times could be decreased significantly, and thus make GISANS feasible as a mainstream technique. None of the currently planned ESS instruments are well-optimised for grazing incidence measurements, which makes a dedicated GISANS instrument necessary. The output of the SAGA project will be a competitive instrument construction proposal for the next ESS call and a detailed plan for the implementation of such a leading instrument.
The current status of the project will be presented, together with first design concepts which were simulated and refined using the Monte-Carlo ray-tracing simulation package McStas.

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