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SAM: a new SANS instrument at the ILL

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Small-angle neutron scattering (SANS) is a ubiquitous technique for the study of static & dynamic properties of condensed matter at the mesoscale. The ever-increasing demand in SANS beamtime requires the development of new instruments with high scientific throughputs.
The SAM project was submitted in that spirit during the 'Endurance 2' call of the Institut Laue Langevin (ILL). The Laboratoire Léon Brilllouin (LLB) has proposed to build a compact SANS instrument equipped with polarized neutrons on the new H15 cold guide, to complement the existing suite and mitigate the loss of the Orphée reactor in Saclay.
Following a relatively short design and procurement phase (2020-2023), the installation of SAM at the ILL began mid-2023 and was achieved by the end of February 2024. The instrument has detected its first neutrons on March 4th, 2024 and, following a 'hot commissioning' phase, has received its first users during the second ILL cycle with around 20 experiments performed.
We will discuss the main characteristics & performances of the instrument, which demonstrate its competitiveness with respect to world-leading SANS instruments already in operation. We will also show a selection of results obtained during the 'friendly user' program organized by the French Federation for Neutron Scattering (2FDN) and the ILL.

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