

Polarised ^3He in neutron polarisation instrumentation at the European Spallation Source



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- Polarisation: 12 of 15 approved instruments. 7 of first-8 instruments. Beam-on-target 2024. User program 2025.
- Polarised ^3He : 10 of 15 approved instruments. 5 of first-8 instruments (shown below).
- 4 spectrometers, 2 diffractometers, 2 SANS, 1 reflectometer, 1 imaging.

Both MEOP and SEOP will be used.

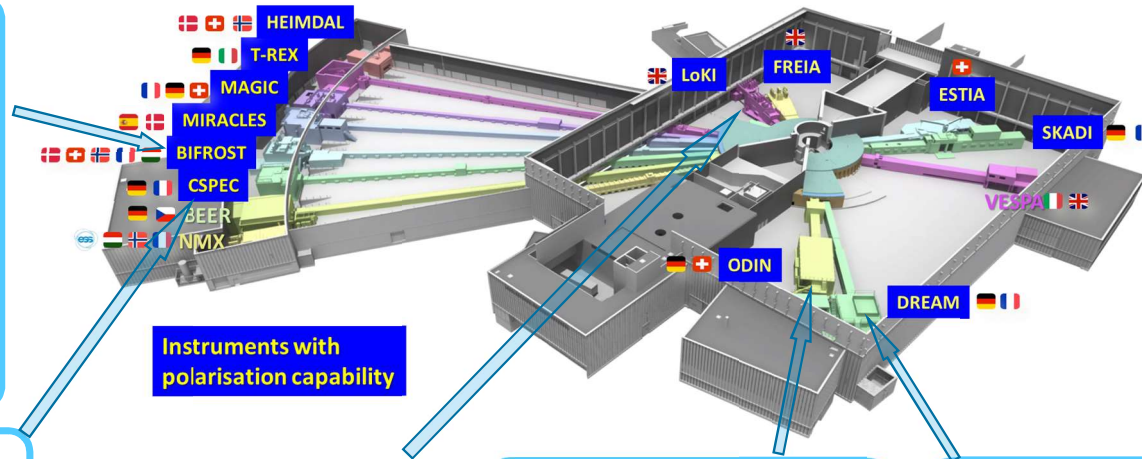
At present, we are

- Designing polarisation setup for instruments.
- Setting up Polarisation and Neutron Optics laboratory and other infrastructure.
- Building equipment prototypes.
- Making polarisation roll-out plans and establishing collaborations.

Deployments match to instrument schedules.

BIFROST (Spectroscopy) (1)
SM polariser, SM/ ^3He analyser

^3He analyser SM analyser



Instruments with polarisation capability

CSPEC (Spectroscopy) (1)
SM polariser, ^3He analyser

SM polariser ^3He analyser

LoKI (SANS) (2)
 ^3He polariser & analysers

Field strength map Field uniformity map

ODIN (Imaging) (2)
SM & ^3He , polariser & analyser

Analyser
Polariser
Detector

DREAM (Diffraction) (3)
 ^3He polariser & analysers

Halbach field coils to analyser

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(2) W.-T. Lee, E. Blackburn, T. Nylander, D. Orlov, et. al., Tillväxtverket European Regional Development Fund project SREss3 (2020-2023).

(3) Polariser: M. Feyngenson, E. Babcock, W. Schweika et. al, Röntgen Ångström Cluster: nPDFSAS (grant no 2019-06117_VR)