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## Polarised neutrons for users at ESS

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Polarised neutrons have long been used to study magnetism. Polarisation analysis also provide a complementary tool to deuteration in the determination of coherent and single-particle motions in soft matter studies. In addition, Neutron Spin Echo has been used extensively in the studies of dynamical processes in soft matters. In fundamental physics, the search for the neutron electric dipole moment and the study of symmetry violation are two examples that use polarised neutrons.

To meet the coming user demand, twelve of the fifteen ESS instruments [1] under construction aim to offer polarised neutrons for user experiments. They include an imaging instrument (ODIN), a SANS instrument (SKADI), two reflectometers (ESTIA, FREIA), three diffractometers (DREAM, HEIMDAL, MAGiC), and four spectrometers (BIFROST \*, CSPEC, MIRACLES, T-REX). In conjunction with in-kind contributions and instrumentation grants, the ESS Polarisation Project will support eight of the eleven instruments to incorporate polarisation analysis capabilities [2]. An update of the project will be presented alongside examples on the use of polarised neutrons in both magnetism and soft-matter studies.

\* See presentation by Kristine M. L. Krighaar

[1] K. Andersen, *et. al.*, Nucl. Instrum. Methods A 957, 164302 (2020). DOI: 10.1016/j.nima.2020.163402

[2] W.T. Lee *et. al.*, EPJ Web Conf. 286 03004 (2023). DOI: 10.1051/epjconf/202328603004

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