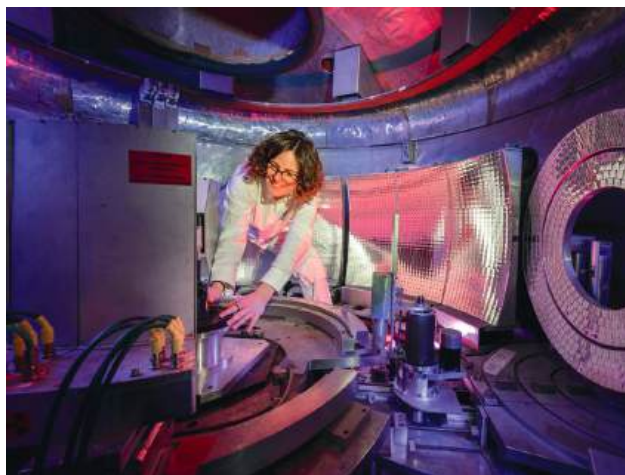




The first week (lectures) of the laboratory course will take place at Forschungszentrum Jülich near Aachen, Cologne and Düsseldorf, the second week (experiments) at the Institut Laue-Langevin in Grenoble close to the Italian and Swiss borders.

TRANSPORTATION

Participants arriving by plane may choose Düsseldorf or Cologne airport, those taking the train should enter Jülich as destination in the travel planner. Detailed travel instructions will be given after the acceptance of participants. Transportation to Grenoble will be provided by the organizers. Participants can leave by train from Grenoble or by plane from Lyon airport.

ACCOMMODATION

Participants will be accommodated in shared rooms at Jugendherberge Aachen for the first week and at Résidence Marie-Curie for the second. Breakfast will be included. On working days lunch will be provided at the cafeterias of Forschungszentrum Jülich and in the on-site restaurant of Institut Laue-Langevin.

IMPORTANT DATES

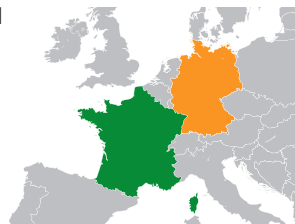
Deadline for Application: 25 May 2025

27th JCNS Laboratory Course: 25 August – 5 September 2025

WHERE IT TAKES PLACE

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Wilhelm-Johnen-Straße
52428 Jülich, **Germany**

Institut Laue-Langevin
71 avenue des Martyrs
F-38000 Grenoble, **France**



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27th JCNS Laboratory Course

NEUTRON SCATTERING

25 August – 5 September 2025 | Jülich, Germany and
Grenoble, France

PUBLICATION DETAILS

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Jülich Centre for Neutron Science of Forschungszentrum Jülich, Germany, organizes in cooperation with the RWTH Aachen University (Prof. S. Förster, Prof. K. Frieze, Dr. M. Kruteva, Prof. M. Zobel, Dr. R. Zorn) a laboratory course in neutron scattering with experiments at the neutron scattering facility of the Institut Laue-Langevin in Grenoble, France. The laboratory course will consist of lectures, exercises and a hands-on experimental section. It is the aim of the course to give a realistic insight into the experimental technique of neutron scattering and its scientific power.

The lectures will encompass an introduction to neutron sources, into scattering theory and instrumentation. Furthermore, selected topics of condensed matter research will be presented. In the afternoon, exercises will be solved in tutored groups to deepen the understanding of the subjects taught.

For the experimental part, the participating students will work in small groups. Each group will perform one neutron scattering or scientific computing experiment per day, i.e. each group will work at 4-5 different instruments. The experimental data will be analyzed by the students assisted by the instrument scientists.

If you are a student in physics, chemistry, or other natural sciences with a BSc (or equivalent), you are welcome to apply for participation in the 27th JCNS Laboratory Course on Neutron Scattering.

To follow the course, you should have elementary knowledge of applied mathematics and solid-state physics, typically covered in a completed BSc program in natural sciences. The course is designed for beginners and provides an introduction to various neutron scattering techniques. Therefore, it may not be suitable for postdocs with prior experience in neutron scattering or for students interested in only a specific technique. However, early-career postdocs with little or no experience in neutron scattering are encouraged to apply.

The laboratory course is free of charge, with no tuition fees. Forschungszentrum Jülich supports non-local students by providing free accommodation and half board. Travel expenses will be partially subsidized up to 500 euro. Participants with higher travel costs (e.g., transcontinental flights) are advised to seek additional third-party funding for their travel expenses.

To apply for participation, please complete the online application form at www.neutronlab.de

Additionally, submit the required supporting documents (CV, motivation letter, and recommendation letters) via email to neutronlab@fz-juelich.de.

We acknowledge financial support from the EU project SoftComp.

The laboratory course is part of the curriculum of the RWTH Aachen University.

S. Förster | K. Frieze | M. Kruteva | M. Zobel | R. Zorn |
I. Apanasenko

LECTURES AND EXERCISES

INTRODUCTION TO NEUTRON SCATTERING (JÜLICH)

Start: 25 August 2025 8:20 h
End: 29 August 2025 18:30 h

- Introduction: Neutron Scattering in Contemporary Research
- Neutron Sources
- Elastic Scattering
- Properties of the Neutron
- Crystallography, Diffraction
- Small Angle Neutron Scattering
- Macromolecules (Structure)
- Spin Dependent and Magnetic Scattering
- Structural Analysis
- Neutron Reflectometry and GISANS
- Magnetic Nanostructures
- Inelastic Scattering
- Strongly Correlated Electrons
- Dynamics of Polymers and Biological Macromolecules
- Applications of Neutron scattering – an Overview

EXPERIMENTAL SECTION (GRENOBLE)

Start: 1 September 2025 8:30 h
End: 5 September 2025 16:30 h

Experiments will be conducted using typical neutron scattering instruments, including:

- Reflectometer
- Backscattering Spectrometer
- Neutron Spin Echo Spectrometer
- Small Angle Neutron Scattering
- Single Crystal Diffraction
- Triple-Axis Spectrometer
- Powder Diffractometer
- Time-of-Flight Spectrometer
- Spectrometer for High Energy Dynamics
- Strain Analyser
- Neutron and X-ray Tomography
- Fundamental Neutron Physics
- Scientific Computing