



Training on Neutron Techniques: Small Angle Scattering and Reflectometry

S. Giovanni, Valle Aurina, Bolzano, Italy 16 - 21 June 2024

The Società Italiana di Scienze Neutroniche (SISN) organizes a three-year program of Advanced Schools called Training on Neutron Techniques (TNT).

Scopes and Topics

The basic principles of neutron scattering techniques for the study of condensed matter and an overview of how neutron sources work will be presented and discussed, with examples and applications in various scientific fields. Specific attention will be paid to recent developments as well as to those in progress and expected for the current decade.

The potential of the experimental methods will be discussed for instruments based at reactor and spallation sources, also in view of the European ESS project (the future flagship European Neutron Scattering facility).

- 2022 Diffraction and Structural Imaging
- 2023 Inelastic Scattering
- 2024 Small Angle Scattering and Reflectometry

The 2024 edition

Fundamentals

- Mathematical methods for scattering
- Theory of neutron scattering
- Netricen sources and instrumentation
- Bayesian methods

Small-Angle Neutron Scattering

- Fundamentals of SANS
- Strategies of SANS data analysis iffraction
- SANS and molecular dynamics
 Powder/Single Cryst
 Disordered Systems
- Applications of SANS to-Biglogy Structures Biophysics, Chemistry, Hermigieons in Biophysics, Engineering, Energy Materials, Cultural Heritage Sciences, Material Sciences and Physics

Neutron Reflectometry

- Fundamentals of NR
- Strategies of NR data analysis^{n Imaging}
- NR and magnetisms with 的结构地理学问题。
 Neutron Tomograp
 Advanced Techniqu
- Applications of NR to Biology, Contrast, Gra Biophysics, Chemistry and Polymerutrons Science









Tutorials

• Small groups of students with tutors.



TNT Project Coordinator

• R. Magli (Università degli Studi, Milano)

Directors of the 2024 School

- M. Maccarini (CNRS Université Grenoble Alpes)
- F. Spinozzi (Università Politecnica delle Marche)
- G. Vitiello (Università di Napoli Federico II)
- A. Pietropaolo (Enea, Frascati)

General Information

The School is open to **Graduate** and **PhD students** and to **Post-Docs** working in scientific disciplines as Biology, Chemistry, Earth Sciences, Heritage Sciences, Material Sciences, Physics and similar.

The official language is English. The School will start on Sunday morning June 16th and finish on Friday June 21st, 2024. The lectures in the morning will be followed by tutorials mainly in the afternoon. Tutorials are a fundamental moment of exchange between tutors and participants where interactions will be encouraged.

Some free time, each day, will be available. The Wednesday afternoon is left free for leisure and some social initiatives or excursion will be proposed.

The School will be hosted at Hotel Steinpent, S. Giovanni, Valle Aurina (Bz), Italy, and the students will be accommodated in shared rooms. Students are requested to arrive at the Hotel within 7.00 pm on Saturday June 15th.



Registration and Fees

A maximum of 25 students will be accepted. The registration fee of 400 € includes full board accommodation at the Hotel Steinpent and handouts of the lectures. Travels costs to and from S. Giovanni are not included. A limited number of fellowships are available, depending on funds.

A pre-registration is required: interested people should complete the Registration form present at <u>http://www.sisn.it/formazione/tnt-summer-school</u>, uploading also a short CV. SISN will evaluate the applications and will communicate on the scheduled time the final acceptance. The School will be held in-person.

Further information

Please visit the SISN web site (<u>www.sisn.it</u>) or contact the School Directors: <u>marco.maccarini@univ-grenoble-alpes.fr</u> and <u>f.spinozzi@staff.univpm.it</u>

Important dates for the 2024 edition:

Pre-registration deadline:	April 18	Fee payment deadline:	May 13
Preliminary acceptance:	April 29	Final acceptance:	May 20

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