



The **Italian Society of Neutron Spectroscopy** organizes a

three-year program of Advanced Schools called Training on Neutron Techniques.

### Scopes and Topics

The physical bases of neutron sources and of neutron scattering techniques for the study of condensed matter will be presented and discussed, with examples and applications in various scientific fields. Specific attention will be paid to recent developments and to those in progress and expected for the current decade. The scientific potentialities of the experimental methods will be discussed for instruments accessible both at reactor-based facilities and at spallation sources, also in view of the European ESS project (the future European Neutron Scattering facility). The **2022** edition will focus on **Diffraction and Structural Imaging**, while the topic of **2023** will be **Inelastic Scattering** and in **2024** it will be **Small Angle Scattering** and **Reflectometry**.

### Program coordinator

R. Magli (Università degli Studi, Milano)

### Directors of the 2022 School

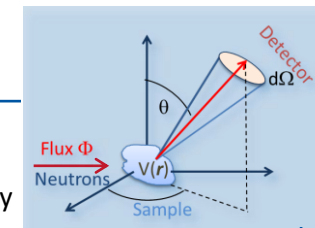
- M. Ceretti (ICGM, CNRS Montpellier)
- F. Grazzi (CNR-IFAC, Sesto Fiorentino, INFN-CHNet)
- F. Formisano (CNR-IOM, Grenoble)
- A. Pietropaolo (ENEA, Frascati)

# TRAINING ON NEUTRON TECHNIQUES

First Edition

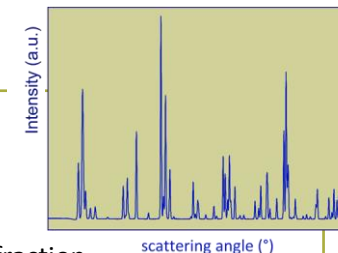
## DIFFRACTION AND STRUCTURAL IMAGING

San Giovanni in Valle Aurina (BZ, Italy)  
11 – 18 June 2022



### Fundamentals

- Neutron Scattering Theory
- Neutron Sources and Instrumentation



### Neutron diffraction

- Crystallography
- Powder/Single Crystal/Disordered Systems Diffraction
- Magnetic Structures
- Applications in Biophysics, Engineering, Energy Materials, Cultural Heritage



### Neutron Imaging

- Basic principles
- Neutron Tomography and Data Reconstruction
- Advanced Techniques (Bragg Edge Analysis, Phase Contrast, Grating Interferometry, Polarized Neutrons, Resonance Imaging, etc...)

### Tutorials

- Small groups of students with tutors





<https://www.steinpent.com>

St. Johann, Ahrn 9, I-39030 Valle Aurina (BZ)  
GPS East: 11°56'7" - North: 46°58'22"

## General Information

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

The language of the School will be English. The School program will start on Sunday morning June 12<sup>nd</sup> and finish on Saturday morning June 18<sup>th</sup> 2022.

General lessons will be held each morning, while the afternoons will be mainly devoted to applicative seminars and tutorial activities with small groups of students.

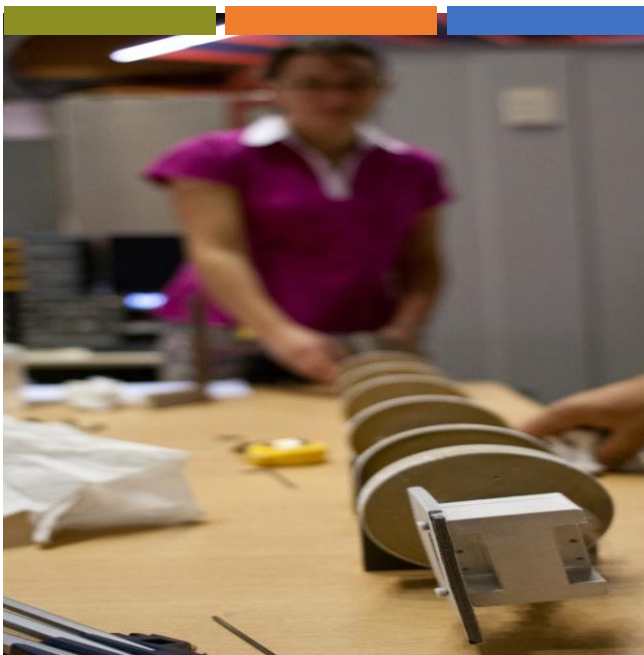
The School will be hosted at [Hotel Steinpent](#), S. Giovanni, Valle Aurina (Bz), Italy, and the students will be accommodated in shared rooms. Students are requested to arrive at the Hotel by 7:00 pm on Saturday June 11<sup>th</sup>.

## Registration & Fees

A maximum of 25 students will be accepted. The registration fees of 300€ include full board accommodation at the Hotel Steinpent and handouts of the lectures. Travels costs to and from S. Giovanni are not included. A limited amount of fellowships is available, depending on the funds at hand.

A pre-registration is required: people interested should complete the Registration Form present at <http://www.sisn.it/formazione/tnt-summer-school>, uploading also a short CV.

The SISN will evaluate the CVs and will communicate on the scheduled time the acceptance of applications.



## Important dates

- Pre-registration deadline: April 20, 2022
- Preliminary acceptance: April 27, 2022
- Fee payment deadline: May 10, 2022
- Final acceptance: May 20, 2022

## Further information



<http://www.sisn.it/>

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[f.grazzi@ifac.cnr.it](mailto:f.grazzi@ifac.cnr.it)

(please refer to one of these e-mail addresses in case of any question, etc.)



The school will be held in-person. However, we will keep you updated in due time on the evolution of the COVID pandemic situation and you can find the latest information [here](#).

## Scientific committee

U. Bafile (CNR-IFAC, Sesto Fiorentino)  
Y. Calzavara (ILL and EU-QUALITY)  
M. Celli (CNR-IFAC, Sesto Fiorentino)  
M. Ceretti (ICGM, CNRS Montpellier)  
D. Colognesi (CNR-IFAC, Sesto Fiorentino)  
A. De Francesco (CNR-IOM, Grenoble)  
L. del Rosso (CNR-IFAC, Sesto Fiorentino)  
F. Grazzi (CNR-IFAC, Sesto Fiorentino & INFN-CHNet)  
E. Guarini (Università degli Studi, Firenze)  
A. Luchini (ESS, Lund)  
M. Maccarini (CNRS Grenoble)  
F. Spinuzzi (Università Politecnica delle Marche)  
L. Ulivi (CNR-IFAC, Sesto Fiorentino)

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