

This school, established in 1994, is primarily addressed to graduate students or post-doctoral with an interest in Neutron Scattering.

The School will include **lectures, tutorials, practical and hands-on data analysis sessions**, covering various aspects of Neutron Scattering, but with an emphasis on techniques and instrumentation oriented towards the study of short-scale microscopic dynamics, momentum distribution, high energy excitations, high energy neutron imaging and diagnostics.

An international group of recognized experts will constitute the teaching body.

The school will be held at Villa Mondragone, the Conference research Centre of the Università degli Studi di Roma Tor Vergata (<http://www.villamondragone.it>) in **Monte Porzio Catone**, Rome, Italy. The official language of the school is **English**.

The School will start on Saturday, September 25th 2010, with a series of introductory lectures covering the fundamental aspects of neutron scattering and neutron instrumentation. During the next few days, a series of lectures will provide the basis of electronvolt neutron spectroscopy, with particular on new instrumental and data handling techniques.

Practicals will be carried out at the **neutron@BTF** pulsed neutron source at Laboratori Nazionali di Frascati – INFN.

At the end of the school, students are invited to attend the **International workshop: "High-energy neutrons for science and society"**, which will be held on October 5th and 6th 2010 at Villa Wolkonsky, the UK ambassador's residence in Rome.



www.fis.uniroma3.it/sns_fpr/index.html

**X SCHOOL OF NEUTRON
SCATTERING FRANCESCO
PAOLO RICCI**



**X SCHOOL OF NEUTRON SCATTERING
FRANCESCO PAOLO RICCI**

X School directors: Dr. Cirino Vasi, Dr. Roberto Senesi

**ELECTRONVOLT NEUTRON
SPECTROSCOPY OF
MATERIALS: MICROSCOPIC
DYNAMICS AND ENABLING
TECHNIQUES**

http://web129.its.me.cnr.it/school_fpricci/index.htm

September 25th – October 4th 2010

CONTACTS

School Directors

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Villa Mondragone

Monte Porzio Catone, Roma- Italy

www.villamondragone.it

The School will commence on Saturday, September 25th 2010, with a series of introductory lectures covering the fundamental aspects of neutron scattering and neutron instrumentation. During the following few days, a series of lectures will provide the basis to understand: Microscopic Dynamics of Simple and Hydrogen-bonded Quantum Fluids, Quantum Momentum Distributions, Effective Born-Oppenheimer Potentials, High Energy Excitations, High Energy Neutron Imaging, Deep Inelastic neutron scattering, High Energy Neutron Irradiation Effects.

Each of these topics will be expanded in a series of tutorials, to be held in small groups, which will also include hands-on data analysis sessions. Two days will be dedicated to practical sessions at the INFN–Laboratori Nazionali di Frascati pulsed and continuous neutron sources, with training to the principles of time of flight techniques, diffraction and radiography.

The combination of introductory lectures, scientific sessions and training in scattering techniques will provide participants with a unique opportunity to become familiar with neutron scattering methods and their applications to current research topics.

Practical Sessions

The students will be able to perform two of the following experiments. The students will analyse the data and give a presentation and prepare a poster describing their results and what they have learnt.

1. **Principles of Time of flight neutron spectroscopy**
2. **Deep Inelastic Neutron Scattering determination of momentum distribution in quantum fluids and hydrogen bonded systems**
3. **Resonance absorption energy analysis in the eV range**
4. **eV neutron spectroscopy with n & gamma detectors**

List of Lecturers:

M. Adams	STFC- Chilton (UK)
F. Aliotta	CNR-IPCF Messina (I)
I. Anderson	Spallation Neutron Source -Oak Ridge (USA)
C. Andreani	Univ. Roma Tor Vergata (I)
R. Bedogni	INFN-LNF Frascati (I)
R. Caciuffo	Institute for Transuranium Elements-Karlsruhe (D)
D. Colognesi	CNR-ISC Firenze (I)
A. Orecchini	Univ. Perugia (I)
G. Festa	Univ. Roma Tor Vergata (I)
G. Gorini	Univ. Milano Bicocca (I)
J. Mayers	STFC- Chilton (UK)
R. McGreevy	STFC-Chilton (UK)
F. Mezei	Los Alamos National Laboratory (USA)
J. Morrone	Columbia University (USA)
F. Natali	ILL Grenoble (F)
A. Paciaroni	Univ. Perugia (I)
E. Perelli	Univ. Milano Bicocca (I)
A. Pietropaolo	CNISM-Roma Tor Vergata (I)
R. Ponterio	CNR-IPCF Messina (I)
R. Pynn	Univ. Indiana - Bloomington (USA)
G. Reiter	Univ. Houston (USA)
G. Salvato	CNR-IPCF Messina (I)
M. Russina	Helmoltz Centrum- Berlin (D)
E. Schooneveld	STFC-Chilton (UK)
M. Tardocchi	CNR-IFP Milano (I)
D. Tresoldi	CNR-IPCF Messina (I)
A. Triolo	CNR-ISM Roma (I)

The last two days (5th October- 6th October) will be focused on: “High-energy neutrons for science and society” with lectures by experts in the fields, and held at Villa Wolkonski, Via Ludovico di Savoia 0018-5 Roma

Workshop’s preliminary list of Lecturers (confirmed):

I. ANDERSON	SNS Facility, Oak Ridge, USA
C. ANDREANI	Università degli Studi Tor Vergata,

R. CAR	Princeton University
D. COLOGNESI	CNR-ISC
N. GIDOPOULOS	ISIS Facility
G. GORINI	University Milano Bicocca
J. MAYERS	ISIS Facility
D. MANOLOPOULOS	University of Oxford
R. MC GREEVY	ISIS Facility
M. PARRINELLO	Eidgenössischen Technischen Hochschule (ETH) Zürich
R. PYNN	University of Indiana
G. REITER	University of Houston
M. ZOPPI	CNR-ISC

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