INTERNATIONAL SCHOOL OF NEUTRON SCIENCE AND INSTRUMENTATION

1st Course: INSTRUMENTS AND DEVICES FOR NEUTRON SCATTERING EXPERIMENTS

ERICE-SICILY: 28 JULY – 4 August 2015

Sponsored by the: • Italian Ministry of Education, University and Scientific Research • Sicilian Regional Government • CNR • SoNS Association

PROGRAMME AND LECTURERS

Welcome and introduction
• R. CACIUFFO, European Commission, JRC, ITU, Karlsruhe, DE
• K. ANDERSEN, European Spallation Source, ESS AB, Lund, SE

Neutron guides
• K. ANDERSEN, European Spallation Source, ESS AB, Lund, SE

ev spectrometers
• C. ANDREANI, Rome Tor Vergata University, Rome, IT

History, development and application of neutron sources
• J.M. CARPENTER, Argonne National Laboratory, Argonne, IL, US

Tutorials sessions
• V. GARCIA-SAKAI, ISIS Neutron and Muon Source, Didcot, UK

Neutron detectors
• G. GORINI, Milano-Bicocca University, Milan, IT

Instruments for neutron diffraction
• P. HENRY, European Spallation Source, ESS AB, Lund, SE

3-axis spectrometers
• K. KAKURAI, Japan Atomic Energy Agency, Ibaraki JP

Neutron spin-echo spectrometers
• T. KELLER, Max Planck Institute for Solid State Research, Garching, DE

Instruments for neutron reflectometry
• S. LANGRIDGE, ISIS Neutron and Muon Source, Didcot, UK

Techniques for neutron spin manipulations and sample environment devices
• E. LELEVRE-BERNA, Institut Laue-Langevin, Grenoble, FR

Quasielastic and backscattering spectrometers
• S. LONGEVILLE, Laboratoire Léon Brillouin, Centre CEA de Saclay, FR

CANS facilities
• C.K. LOONG, Tsinghua University, Beijing, CN

Instrument types and constructability
• R. McGREEvy, ISIS Neutron and Muon Source, Didcot, UK

Neutron and gamma shielding
• G. MUHRER, European Spallation Source, ESS AB, Lund, SE

Time-of-flight spectrometers for diffuse neutron scattering
• R. OSBORN, Argonne National Laboratory, Argonne, IL, US

Methods & concepts of neutron scattering
• R. PYNN, Indiana University, Bloomington, IN, US

Neutron imaging instruments
• M. SCHULZ, Universität München, Munich, DE

Future neutron sources
• A.D. TAYLOR, STFC Rutherford Appleton Laboratory, UK

Neutron monochromator devices
• Z. YAMANI, CNRC, Chalk River Laboratories, Chalk River, CA

Instruments for fundamental science
• O. ZIMMER, Institut Laue-Langevin, Grenoble, FR

POURPOSE OF THE COURSE

Aim of the School is to provide an introductory course on neutron scattering techniques and neutron instrumentation design addressed to graduate students and young professionals. Topics will cover nuclear-reactor and accelerator-based neutron sources, neutron scattering techniques for structural and spectroscopic studies, neutron detectors, monochromatization systems, neutron guides, sample environment equipment, devices for neutron spin manipulation, data collection and analysis, with examples rooted on cutting-edge basic and applied research in Physics, chemistry and materials science carried out at major international neutron facilities. Students will also follow practical works, in order to gain a comprehensive training on modern instrumentation issues at both steady state and pulsed neutron sources. The School aims to build interactions between graduate students, international research centres for neutron scattering (ILL, Rietveld (F), ISIS Neutron Facility (UK), SNS (US)) and university groups.

The School program consists of lectures, tutorials and problem classes taking place each weekday with occasional evening lectures. In addition, students will make short presentations to their tutorial groups about their current research projects.

APPLICATIONS

Persons wishing to attend the Course should send a letter to the Director of the School:
Professor Carla ANDREANI
Department of Physics, University of Rome Tor Vergata, Rome, IT
e-mail: carla.andreani@uniroma2.it

PLEASE NOTE

Participants must arrive in Erice on July 28, no later than 7 p.m.

More information about the other activities of the “ETTORE MAJORANA” FOUNDATION AND CENTRE FOR SCIENTIFIC CULTURE can be found on the WWW at the following address: http://www.emefc.it