

Joint ICTP-IAEA Workshop on Advances in Digital Spectroscopy

6 - 10 May 2013
Miramare, Trieste, Italy

The Abdus Salam International Centre for Theoretical Physics, together with the The International Atomic Energy Agency (IAEA) will organize a *Workshop on Advances in Digital Spectroscopy* from 6 May to 10 May 2013.

Digital Pulse Processing is a signal processing technique in which detector (preamplifier output) signals are directly digitized and processed to extract quantities of interest (pulse height, pulse shape, arrival time etc.). Such an approach has significant advantages when compared to traditional analogue signal processing. Digital Signal/Pulse Processing (DSP/DPP) systems have been developed and successfully implemented in several laboratories world-wide during the last decade. The benefit and added value of such innovative setups has been clearly demonstrated and resulted in new opportunities for their application. The increase in the use of DPP for nuclear spectroscopy applications can be ascribed to the fact that these systems are becoming fast enough, and inexpensive enough, for digital real time processing of nuclear radiation detection data.

The purpose of this workshop is to provide a unique training experience on recent technological and methodological innovations in applied spectrometry. The workshop is practically orientated, focusing on sharing knowledge and expertise on a variety of Digital Spectroscopy applications and under a range of different experimental conditions. The workshop provides an opportunity for users to identify both the benefits and limitations of digital spectroscopy techniques, and to gain experience through experiments.

The workshop will consist of:

Lectures and Tutorials covering:

- Digital Pulse/Signal Processing
- Data Acquisition
- Data Analysis

Practical training and experiments on:

- Construction of an open source MCA
- Gamma-ray spectroscopy and imaging
- Fast rise-time analysis techniques with neutrons
- X-ray spectroscopy and imaging

PARTICIPATION:

Scientists and students from all countries which are members of the United Nations, UNESCO or IAEA may attend the School. As it will be conducted in English, participants should have an adequate working knowledge of that language. Although the main purpose of the Centre is to help research workers from developing countries, through a programme of training activities within a framework of international cooperation, a limited number of students and post-doctoral scientists from developed countries are also welcome to attend.

As a rule, travel and subsistence expenses of the participants should be borne by the home institution. Every effort should be made by candidates to secure support for their fare (or at least half-fare). However, limited funds are available for some participants who are nationals of, and working in, a developing country, and who are not more than 45 years old. Such support is available only for those who attend the entire activity. **There is no registration fee.**

HOW TO APPLY FOR PARTICIPATION

The application form can be accessed at the activity website

<http://agenda.ictp.it/smr.php?2456>

Once in the website, comprehensive instructions will guide you step-by-step, on how to fill out and submit the application form.

Deadline for requesting participation: **22 February 2013**

ACTIVITY SECRETARIAT:

Telephone: +39-040-2240576
E-mail: smr2456@ictp.it

Telefax: +39-040-2240585
ICTP Home Page: <http://www.ictp.it/>

Director:

Iain Darby
(IAEA NSAL, Seibersdorf, Austria)

Co-Directors:

Robert Grzywacz (Faculty)
(University of Tennessee/Oak Ridge
National Laboratory, USA)

Joe Niemela (Local Organiser)
(MLab ICTP, Trieste, Italy)

Faculty:

Andrew Boston
(University of Liverpool, UK)

Paul Campbell
(University of Manchester, UK)

Mladen Bogovac
(IAEA NSAL, Seibersdorf, Austria)

Michael Campbell*
(Medipix Collaboration, CERN,
Geneva, Switzerland)

*** to be confirmed**

DEADLINE
for requesting participation

22 February 2013