



Joint ICTP-IAEA Advanced Workshop on Model Codes for Spallation Reactions

4 - 8 February 2008
(Miramare, Trieste, Italy)

The International Atomic Energy Agency (IAEA) together with the Abdus Salam International Centre for Theoretical Physics (ICTP), will organize an **Advanced Workshop on Model Codes for Spallation Reactions** which will be held at the ICTP, Trieste, Italy, from **4 - 8 February 2008**.

Spallation reactions play an important role in a wide domain of applications ranging from intense neutron sources for condensed matter and material studies, accelerator-driven sub-critical reactors for the transmutation of nuclear waste and rare isotope production to astrophysics, simulation of detector set-ups in nuclear and particle physics experiments, and radiation protection near accelerators or in space. The simulation tools used in these domains are high-energy transport codes in which elementary cross-sections and characteristics of all the reaction products are taken from existing experimental library data or, when experimental data are missing, calculated using nuclear model codes as event generators. Those are generally Monte-Carlo implementations of Intra-Nuclear Cascade (INC) models or Quantum Molecular Dynamics (QMD) models followed by de-excitation (principally evaporation/fission) models. It is of great importance to validate abilities of the various codes to predict reliably, with a known uncertainty, the different quantities relevant for applications.

PURPOSE: This Workshop will facilitate experts and competent practitioners to better understand the physical basis, approximations, strengths and weaknesses of the currently used spallation codes. Presentation of relevant basic experimental data with emphasis on accuracies, detector efficiencies, filters and thresholds will create basis for code validation and inter-comparison. Specifically the workshop will help:

- * To understand in depth, the physics of INC, QMD models and de-excitation models to point out the reasons of their respective successes or deficiencies;
- * To define an agreed set of experimental data to be used in validation and inter-comparison of the models;
- * To promote the exchange of information among researchers in the field;
- * To identify areas of international cooperation in the field.

The agreed set of experimental data will be proposed as an international benchmark and reviewed by experts in a follow-up activity.

PARTICIPATION: Experts, young scientists, and Ph.D. students from all countries which are members of the United Nations, UNESCO or IAEA may attend the advanced workshop. As it will be conducted in English, participants should have an adequate working knowledge of this 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 young scientists, Ph.D. students, and post-doctoral scientists from developed countries are also welcome to attend this Workshop.

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. Preference will be given to qualified candidates not more than 45 years old. Such support is available only for those who attend the entire activity. There is no registration fee.

Requests for Participation: The "Request for Participation" form is obtainable via Web server: <http://agenda.ictp.it/smr.php?1930> It should be completed, signed and returned by using only one of the following ways:

If sending an application by e-mail to: smr1930@ictp.it please save and send file attachments in either PDF (preferably) or RTF zipped or DOC format.

If sending an application form by regular mail or courier it should be posted to:

Joint ICTP-IAEA Advanced Workshop on Model Codes for Spallation Reactions
(smr1930 c/o Ms. Patricia Wardell)
the Abdus Salam International Centre for Theoretical Physics
Strada Costiera 11
34014 Trieste, Italy (recent photograph & signature of the candidate are compulsory)

ACTIVITY SECRETARIAT: Telephone: +39-040-2240576 Telefax: +39-040-2240585
E-mail: smr1930@ictp.it ICTP Home Page: <http://www.ictp.it/>

Trieste, September 2007

CO-SPONSORS:

CEA (Saclay, France)
FZJ (Juelich, Germany)

DIRECTORS:

G. MANK
(IAEA, Vienna, Austria)

D. FILGES
(FZJ, Juelich, Germany)

S. LERAY
(CEA, Saclay, France)

Y. YARIV
(Soreq NRC, Yavne, Israel)

LOCAL ORGANIZER:

C. TUNIZ
(ICTP, Trieste, Italy)

TOPICS:

INC Models
QMD and BUU Models
De-Excitation Models
Spallation reaction data for
validation of models
Model inter-comparison methods

DEADLINE
for requesting participation

2 NOVEMBER 2007