



The Abdus Salam  
International Centre for Theoretical Physics



Workshop on  
Nuclear Data for Science and Technology:  
Medical Applications

12 – 23 November 2007  
(Miramare - Trieste, Italy)

The Abdus Salam International Centre for Theoretical Physics (ICTP, Trieste, Italy) in cooperation with the International Atomic Energy Agency (IAEA, Vienna, Austria) is organizing a Workshop on "Nuclear Data for Science and Technology: Medical Applications" to be held at ICTP, Trieste, Italy. The Workshop will continue a series of "Nuclear Data for Science and Technology" workshops initiated in 1999.

Recent years have witnessed a rapid development and increasing use of nuclear radiation in medicine both for diagnostic and therapeutic purposes. Diagnostic nuclear techniques (e.g., SPECT and PET) offer formidable possibilities for human body research, which are complementary or superior to other available non-nuclear methods. Specific nuclear radiations have been used in cancer therapy treatments for many years (X-rays and gamma rays), and very promising results can often be obtained with neutron, proton and heavy-ion irradiation. New radioisotopes have been introduced for diagnosis and therapeutic processes. Radiolabelled compounds can be used to follow and quantify the metabolism of newly developed drugs. Targeted radiotherapy linking MAB and radioactive compounds is gaining widespread use. Efficient and safe application of these techniques requires appropriately trained and dedicated personnel.

The Workshop constitutes a unique opportunity for scientists and engineers to gain extensive and up-to-date training on the use and understanding of those nuclear data of relevance to the application of modern nuclear technology in therapy and diagnostics. Furthermore, they will be introduced to the rapidly advancing information technology for on-line retrieval of nuclear data.

Scientists and engineers from all countries that are members of the United Nations, UNESCO or IAEA may attend the Workshop. They should hold an advanced degree in nuclear physics, nuclear chemistry, medical physics, nuclear engineering or related subjects, and preferably possess several years' professional experience in medical physics and/or medical application of nuclear technology. Students will also be given the opportunity to give a short presentation of their own technical work at the workshop. As this activity will be conducted in English, participants must have an adequate working knowledge of this language. Although the main purpose of ICTP is to help scientists from developing nations through a programme of training activities within a framework of international cooperation, applicants from developed countries would equally benefit from the Workshop and are also welcome to attend.

As a rule, travel and subsistence expenses of the participants should be borne by their home institutions. However, limited funds will be available to support some participants, who are nationals of, and working in, a developing country and who are not more than 45 years old, to be selected by the Organizers. Travel expenses will be granted only in exceptional cases. Every effort should be made by candidates to secure support for their fare (or at least half-fare) from their home country. It is stressed that participants whose travel expenses are paid by ICTP are required to attend the entire course. There is no registration fee for attending the Workshop.

Application forms for the Workshop and agenda can be found on the Web server of ICTP at:  
[http://cdsagenda5.ictp.trieste.it/full\\_display.php?ida=a06223](http://cdsagenda5.ictp.trieste.it/full_display.php?ida=a06223)

Background information on the IAEA Nuclear Data Section is available from:  
<http://www-nds.iaea.org/>

**The closing date for receipt of applications for participation is 2 JULY 2007.**

Those wishing to participate should **fully complete and sign** the "Request for Participation" form available from the ICTP WWW server and send by mail, e-mail or FAX to:

Nuclear Data: Medical Applications (SMR 1868)  
(c/o Ms. Elizabeth Brancaccio)  
the Abdus Salam International Centre for Theoretical Physics  
Strada Costiera 11  
I-34014 Trieste, Italy

If sending an application by e-mail: [smr1868@ictp.it](mailto:smr1868@ictp.it)  
(Please send file attachments in PDF or RTF format)

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In cooperation with  
International Atomic Energy Agency

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**LOCAL ORGANIZER:**

**C. TUNIZ**  
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**PROGRAMME:**

- nuclear techniques used in radiotherapy and diagnostics
- review of nuclear data for medical applications
- Monte Carlo method for medical applications
- absorbed dose calculations
- radiobiological effects of therapy beams
- neutron, proton and light ion radiotherapy
- on-line retrieval of nuclear data

**DEADLINE**

**2 JULY 2007**