The Abdus Salam
International Centre
for Theoretical Physics
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United Nations
Educational, Scientific and
Cultural Organization

IAEA
International Atomic Energy Agency

JOINT ICTP-IAEA WORKSHOP ON COMPUTED TOMOGRAPHY:

QUALITY CONTROL, DOSIMETRY AND OPTIMIZATION

2 - 13 May 2016

Miramare, Trieste, Italy

The purpose of the workshop is to exchange advanced knowledge on the physics and technological innovations in computed tomography (CT), procedures for quality control and dosimetry. The optimization strategies, aiming to achieve diagnostic image quality at lower radiation dose, will be also extensively discussed.

Achieving good image quality at lower patient dose became of high importance in the last decades with the new technological development and especially when new generations of multi-detector CT became widely available. The improved diagnostic accuracy and shortened scanning time in CT lead to the global increase of the number of CT examinations, both for adults and children. As noted by UNSCEAR (2008), "the increasing trend in annual CT examination frequency and the significant dose per examination have an important impact on the overall population dose due to medical examinations". CT is already the main contributor to the effective dose from medical exposure, estimated to contribute to 43% of the total dose to the world population. CT imaging is currently an important component, not only in diagnostic radiology, but in all disciplines of radiation medicine. CT has evolved from standalone techniques to combined imaging, used together with single photon emission computed tomography (SPECT) and positron emission tomography (PET) in hybrid systems. In radiation therapy, CT imaging is an indispensable tool for the accurate treatment planning.

While CT is an established technology and modern CT systems are being installed worldwide, there is a significant shortage of clinical medical physicists specialized in the field of diagnostic radiology that are able to adequately support this technology. Because of the rapid technological development in CT, keeping up to date knowledge of clinical specialists is a challenging task. Optimization of CT is a complex and multidisciplinary task, requiring deep knowledge of technology, technical factors affecting image quality and patient dose, clinical purpose and required image quality. Medical physicists are responsible for quality control and dosimetry, and have an important role in optimization of clinical protocols. This workshop under the umbrella of ICTP and IAEA is expected to contribute to strengthening the qualification of medical physicists working in CT. The workshop will assist in the development of networks of professionals working in CT from different regions.

PARTICIPATION

This workshop would seek to target experienced medical physicists working in hospitals, and teachers involved in medical physics education and postgraduate training from all countries, including developing countries. The workshop will provide overview of latest innovations and structured information on quality control, dosimetry and dose reduction strategies in CT that will be beneficial for medical physicists from developing countries. Participants will become acquainted with their international peers and will have a unique opportunity to establish links for their mutual support. Knowledge transfer and creation of a network will be facilitated between individuals from developed and developing countries, for the benefit of patients worldwide.

Scientists and students from all countries which are members of the United Nations, UNESCO or IAEA may attend the 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, 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 from developing countries, to be selected by the organizers. There is no registration fee.

HOW TO APPLY FOR PARTICIPATION

The application form can be accessed at the activity website:

http://indico.ictp.it/event/7635/

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

ACTIVITY SECRETARIAT:
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APPLICATION DEADLINE

10 February 2016