The Abdus Salam International Centre for Theoretical Physics

IAEA International Atomic Energy Agency

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Joint ICTP-IAEA Workshop on Advanced Dosimetry in Diagnostic and Interventional Radiology

DESCRIPTION:

The workshop is intended for medical physicists and radiation metrologists interested in enhancing their knowledge and skills in dosimetry for diagnostic and interventional radiology. It will provide selected participants with a comprehensive and current overview of both theoretical foundations and practical applications of dosimetry in these domains.

MORE INFORMATION:

International standardization in dosimetry is critical for ensuring the safe and effective optimization of radiation technologies in clinical practice. This is particularly relevant for diagnostic radiology procedures, which account for an increasingly significant share of the total population dose from artificial sources of ionizing radiation. The reasons for monitoring patient exposure and assessing radiation doses in diagnostic radiology are establishing and maintaining standards of good practice and evaluating potential detriment for justification and risk assessment purposes. Accurate dosimetry for diagnostic and interventional procedures is essential to maintain balance between image quality and patient exposure. Variations in irradiation conditions, as X ray beam quality and geometry, have led to the development of application-specific dosimetry quantities and methods, making dosimetry in diagnostic radiology highly complex and diverse. Dosimetry methods must ensure adequate accuracy and long-term stability. Proper selection and use of dosimeters, dosimetry traceability, as well as correct interpretation of dosimetry data, require specialized skills and knowledge. This includes understanding radiation quantities and units, dosimetry formalism and uncertainty estimation, and the performance characteristics of various dosimeter types used in diagnostic and interventional radiology both from radiation metrology and clinical dosimetry perspective. Medical physicists bear primary responsibility for dosimetry in diagnostic radiology and for assessing radiation doses for specific procedures, which involves the use of specialized instrumentation. Radiation metrologists, as professionals working in dosimetry laboratories, are responsible for disseminating radiation dosimetry traceability to the end-users through instrument calibration. Therefore, a comprehensive training in dosimetry is indispensable for medical physicists and radiation metrologists to ensure the required standards of quality and safety in X ray imaging.

TOPICS:

- Dosimetry framework, quantities, units and formalism;
- Instrumentation for dosimetry in diagnostic radiology, other instruments used in diagnostic radiology;
- International Metrology System, Calibrations procedures and role of the SSDL;
- Calibration of dosimeters in diagnostic radiology;
- Application-specific dosimetry (radiography, fluoroscopy and FGIP, CT, breast imaging, dental);
- Patient dose audits, data analysis and use;
- Computational dosimetry;
- Dosimetry for risk assessment;
- Organ dose estimation and risk assessment;
- Advances in dosimetry in diagnostic radiology;
- Uncertainty of dose measurement and assessment

25 - 29 May 2026

Trieste, Italy

Deadline:
15 February 2026

DIRECTOR:

O. Ciraj Bjelac, IAEA, Austria
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LOCAL ORGANIZER:

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FURTHER INFORMATION:

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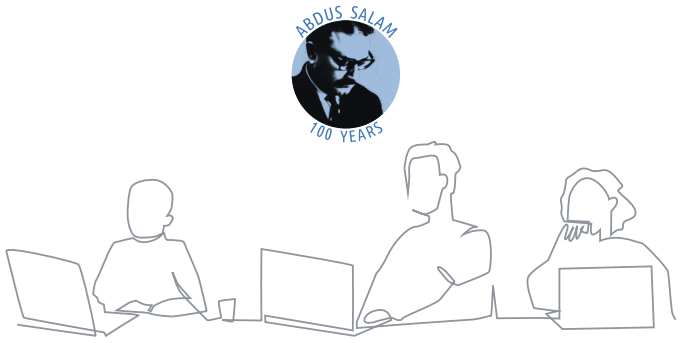
Web: https://indico.ictp.it/event/11171/

Female scientists are encouraged to apply.

GRANTS:

A limited number of grants are available to support the attendance of selected participants, with priority given to participants from developing countries.
There is no registration fee.



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