

Dosimetry: determining the absorbed dose in photon and electron beams with ionization chambers

Thursday, September 12, 2024 9:45 AM (1 hour)

Radiotherapy uses ionising radiation to damage the DNA of tumour cells. According to international recommendations (ICRU), the doses delivered during treatment must not deviate by $-5\%/+7\%$ from the doses prescribed by the radiation oncologist in order to maximize local control and limit complications. To achieve this, it is necessary to describe the properties of the radiation beams precisely. The first part of the course (1 hour) will explain the methodology used by medical physicists to accurately assess the absolute doses generated by linear accelerators under reference conditions. The 2nd part of the course will describe the operating principles of the main relative dosimeters used to characterise longitudinal and transverse dose distributions and/or point doses. The limitations of these detectors for new irradiation strategies (ultra-high dose rate, mini-beams) will be discussed.

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