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Improve of Array Detector System for Dose Distribution of Virtual Wedge in Clinical Photon Beams

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We investigated the characteristics of the array detector system and TLD for dose distribution by the moving wedge in therapeutic photon beams. Also we have improved an elec-trometer for the array detector system for radiation therapy. In dynamic field irradiation, the moving wedge technique and its fraction methods are available through the computer-controlled asymmetric independent collimator. The array detector system consists of an electrometer, a solid detector, TLD and an array phantom. It is used for the point dose measurement and the field size scanning. We evaluated the dosimetric characteristics of the virtual wedge and the conventional fixed wedge by the scanning system. In our analysis for the 6 and 10 MV photon beams, the maximum dose in the virtual-wedge and the fixed-wedge factors varied from 1.2 % to 1.6 % for square collimator setting ranging from 10 to 20 cm, respectively.

Keywords : Array Detector, Wedge Field