

The Use of the Matlab Software as the Best Way to Recognize Penumbra Region in Radiotherapy

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Abstract : The γ tool was developed to quantitatively compare dose distributions, either measured or calculated. Before computing γ , the dose and distance scales of the two distributions, referred to as evaluated and reference, are re-normalized by dose and distance criteria, respectively. The re-normalization allows the dose distribution comparison to be conducted simultaneously along dose and distance axes. Several two-dimensional images were acquired using a Scanning Liquid Ionization Chamber EPID and Extended Dose Range (EDR2) films for regular and irregular radiation fields. The raw images were then converted into two-dimensional dose maps. Transitional and rotational manipulations were performed for images using Matlab software. As evaluated dose distribution maps, they were then compared with the corresponding original dose maps as the reference dose maps.

Keywords : energetic electron, gamma function, penumbra, Matlab software

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