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交叉学科

一种用于多叶准直器适形放疗的剂量算法研究

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摘要

描述了一种用于多叶准直器适形放疗的剂量计算方法。 在不同大小的方野和非规则野照射情况下, 将此方法得到的剂量分布与微分卷积法计算得到的剂量分布进行了精度验证。 结果表明， 这种算法具有较高的剂量精度和较快的计算速度, 因此可在适形放疗中用作MLC适形野的自动生成。

A dose calculation algorithm for MLC based conformal radiotherapy is described in this paper. The algorithm is formulated by the coordinate of MLC leaves. Verification on the algorithm is made by comparing the dose distributions generated by this algorithm with that generated by a Differential Convolution Superposition algorithm for various regular and irregular fields. The results demonstrate that the present algorithm has suitable accuracy and high computational efficiency, thus it could be useful for the treatment planning process in MLC based conformal radiotherapy, where the workload for interactively or automatically designing the shapes of MLC is heavy.

关键词 剂量计算； MLC叶片位置； MLC适形治疗

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