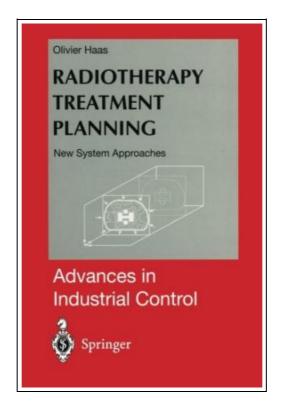
Radiotherapy Treatment Planning



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Reviews

Simply no terms to clarify. It is actually loaded with knowledge and wisdom I am just delighted to let you know that this is the very best publication i have got read through during my individual lifestyle and could be he very best pdf for actually.

(Mr. Caleb Quigley MD)

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Book Condition: New. Publisher/Verlag: Springer, Berlin | New System Approaches | An in depth examination of many of the complex issues associated with planning and optimisation of intensity modulated radiotherapy treatment. It includes: a presentation of current practice, techniques and equipment used by medical physicists and others to deliver radiotherapy treatment; a systems modelling approach in the formulation of a beam model for optimisation, describing the effect of X-rays on human body tissues; a deterministic approach to the inverse problem in radiotherapy, based on weighted iterative least squares is modified to allow an adaptive scaling of the error to improve the performance of a general least squares algorithm; a guided random search methodology, based on genetic algorithms which is aimed at solving multi-objective optimisation problems is developed to optimise beam weight/wedge angle as well as coplanar beam orientation; the overall approach developed is demons trated practically using both traditional and modern measurement techniques. | 1. Introduction and Brief Review of Developments in Radiotherapy.- 1.1 Introduction.- 1.2 Historical Review of Developments in Radiotherapy.- 1.2.1 The Early Workers.- 1.2.2 Effect of Radiation on Human Tissues.- 1.2.3 Improving the Physical Selectivity of Treatments.- 1.2.4 Developments of Megavoltage X-ray Machines.- 1.3 Radiotherapy Treatment Planning Procedures.- 1.3.1 Conventional Radiotherapy Procedures.- 1.3.2 Radiotherapy Treatment Planning.- 1.3.3 Automated Treatment Planning: Review of the Developments.- 1.3.4 Beam Compensation Techniques.- 1.4 Background to the Optimisation of Radiotherapy Treatment Plans.- 1.4.1 Traditional Approach to Manual Optimisation.- 1.4.2 Consideration of Region of Interest. - 1.4.3 Notion of Objective Function. - 1.4.4 Objective Based Dose Criteria. - 1.5 Optimisation in Radiotherapy: A Brief Review.- 1.5.1 Optimisation of Coplanar Beam Orientation.- 1.5.2 Optimisation of Beam Weight and Wedge Angle.- 1.5.3 Optimisation Method for in Field Intensity Modulation.- 1.5.4 Need for a Matrix Based Beam Model.- 1.5.5 Proposed Hybrid Approach.- 1.6 Concluding remarks.- 2. Beam Characteristics and...



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