LINEAR PROGRAMMING APPROXIMATION FOR INTENSITY-MODULATED RADIATION THERAPY WITH MULTIPLE DOSE-VOLUME CONSTRAINTS

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One approach to IMRT inverse planning is by solving a system of linear inequalities and then evaluating the solution by comparing the dose-volume histograms generated by forward computation for each organ/target with pairs of dose-volume constraints provided for that organ/target. Currently there is no algorithm for satisfying such multiplicity of dose-volume constraints directly, the constraints are used only as evaluation criteria. In this talk, a linear programming approximation to the linear inequalities with multiple dose-volume constraints is proposed and is experimentally demonstrated to be efficacious.