

AbstractID: 4780 Title: In Vivo dosimetry for IMRT treatments generated by Pinnacle treatment planning system

Dose verification using diodes has recently been proposed for IMRT treatments and has been evaluated for IMRT deliveries planned using the Eclipse treatment planning system. The Pinnacle treatment planning system generates plans that are delivered in a different fashion than Eclipse. Whereas the Eclipse-generated plans are delivered by scanning the treatment area from one side to the other, Pinnacle-generated plans are delivered in a seemingly random fashion, treating multiple small areas within the field. This makes diode measurements at a point potentially more uncertain since the diode may be exposed fully or partially to multiple small fields during one single field's treatment as opposed to being exposed to very few segments scanning the point during an Eclipse-generated delivery. We have evaluated in vivo dosimetry for Pinnacle-generated IMRT plans, characterized diode response to IMRT deliveries involving various beamlets and evaluated its response due to full or partial exposure to radiation. We will also present the results of diode measurements performed for 150 IMRT fields on patient and phantom.