

AbstractID: 1427 Title: Comparison of NOMOS CORVUS and ADAC Pinnacle IMRT planar dose calculations with measurements using MapCHECK

Planar dose distributions from the intensity maps of IMRT plans generated on ADAC and CORVUS treatment planning systems for 10 patients were measured using MapCHECK device. In-house software was developed to export intensity maps into NOMOS CORVUS Beam Utility module allowing dose distributions for a hybrid phantom to be calculated. From the transverse dose distribution files, planar dose matrices were extracted from which compatible MapCHECK files were generated at phantom depths of d_{max} , 5 cm, 10 cm 15 cm and 20 cm. In addition, the beam segment information was exported to ADAC Pinnacle workstation using the above software and compatible MapCHECK files were generated on ADAC Pinnacle. The MapCHECK measured files and the calculated files from the above treatment planning systems were analyzed using the in-house software. The MapCHECK dose points that recorded above 10% of the maximum dose were selected for the analysis. The calculated dose matrix was searched for 3% and 3mm distance agreement criteria. Based on the comparison of dose points satisfying the above criteria, our results show that for 6MV, on the average 80% of dose points from ADAC plans and 45% of points from the CORVUS plans matched with the measured data. For 23MV the results were 69% and 45% respectively. Increasing the calculation grid size from 3 mm to 6 mm resulted in only 2% decrease in the number of points that agreed with MapCHECK measurement. Overall, our results show that ADAC plans fared better than CORVUS plans.