AbstractID: 6711 Title: An in vivo Verification Method for Fixed Gantry IMRT

We have developed an *in vivo* transmission measurement method for fixed gantry IMRT. Verifications of a fixed gantry IMRT beam include checking a point dose and the fluence map in the beam cross section. We made a device so a ready pack film and a diode can be placed at the block tray level. The film gives the fluence map, and the diode reading is related to a point dose at d-max at 100 SSD, which can be calculated in the treatment planning computer system (CadPlan). For a set of square field sizes and a set of square MLC openings, diode measurements were done at the tray level and 100 SSD on top of phantom for both 6 MV and 18 MV photon beams. The ratios of the diode readings are within 3% of a median value, which is used to convert readings of diode at tray to point dose at d-max at 100 SSD for IMRT beams. A total of 107 IMRT fields of 18 MV are studied, all fuence map films agree with plot out from CadPlan visually, 95% of point doses are within 5% of CadPlan calculated dose.