Monte Carlo Dose Verification of Passive Scattering Proton Therapy for Prostate Cancer

**Figure 1:** DVH comparison between pencil beam calculation algorithm (XiO - solid line) and Monte Carlo (TOPAS - dashed line).

**Figure 2:** Proton range comparison: Green line: 90% isodose, blue line: 50% isodose showing the direction of the beam. Yellow arrows indicate the range distance difference of ~3mm.

**Figure 3:** Comparison between pencil beam calculation algorithm and Monte Carlo: percent differences in dosimetric evaluators: D95: least dose covering the 95% of structure volume (a: PTV1, b: PTV2); V95: volume covered by 95% of the prescription dose (78Gy), in percent of the total structure volume; V70Gy: percentage of structure volume covered by 70 Gy isodose line (c: Rectum, d:Bladder); V75Gy: percentage of structure volume covered by 75 Gy isodose line (c: Rectum, d:Bladder).