Commissioning and characterization of novel onboard Kilo-Voltage Fan-Beam Computed Tomography for Ring Gantry LINAC

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INTRODUCTION

- Linac: 6 MV FFF, 850 MU/min, 40 x 2 cm, 85 SAD, 60RPM gantry rotation
- MLC: Binary MLC, 0.625 cm width at isocenter
- PET: Two detector arcs, FOV (trans.) 50 cm, FOV axial (>4.9 cm), SR 5 mm.
- kV-FBCT: 120kV, FOV 50 cm, 16 slice with helical acquisition, nominal slice thickness 1.25 mm.

RESULTS

- The total targeting error was less than 1 mm.

CONCLUSIONS

1. Comprehensive characterization of the kV-FBCT has been shown to provide acceptable image quality.
2. The image unit onboard the RefleXion X1 meets vendor specifications and satisfies requirements for routine clinical use.