

## AbstractID: 4760 Title: The Effect of Skin Flash on Skin Dose for Breast IMRT Treatment

**Purpose:** Treatments using tangential IMRT fields for Breast treatment are prone to fluctuation in the body outline area. Deviations may arise from inaccuracies in patient positioning, patient movement, or respiratory motion. The skin flash tool from Eclipse, which visualizes the fluence of the selected field in the BEV, allows the planner to graphically extend the fluence outside the body surface with a paintbrush. The painted extension is then filled with transmission values. The purpose of this work is to investigate the effect of skin flash tool on skin dose for breast IMRT treatment.

**Method and materials:** A breast phantom filled with tissue equivalent material was constructed to investigate the skin dose. The IMRT tangent fields, which reproduces the two fields traditional setup for breast irradiation, was used to generate IMRT plan based on the CT images. The skin flash tool was used to extend fluence 2 cm outside the breast skin to accommodate the respiratory motion. The skin flash was then filled with different transmission values ranging from 0 to 1 to generate different plans. Skin dose was then measured on these plans using diode. The respiratory-gated treatment was also measured.

**Results:** Compare to the skin dose through conventional parallel opposing tangential beams with wedges, the variation of skin dose is  $\pm 15\%$  with transmission values ranging from 0-1. The transmission value of 0.5-0.6 produced the plan with similar skin dose to the conventional plan. If measurement was done with the respiratory motion, the skin dose variation could be  $\pm 25\%$ . However this variation could be reduced to  $\pm 20\%$  if gated treatment was used.

**Conclusions:** The skin flash transmission factor should be kept at 0.5-0.6 in order to keep the skin dose similar to those from the conventional plan. Breast gating treatment minimizes the skin dose variation.