

The use of collimator rotation to reduce lung volume in the radiation field for isocentric breast tangent treatments may cause a dose distribution discrepancy between a breast contour taken along the collimator crosshairs and the transverse laser projection on the patient. The purpose of this study was to evaluate this discrepancy for different collimator angles and field widths.

Collimator rotations of  $0^\circ$  and  $30^\circ$  were compared for two oblique separations: 18 and 30 cm, and field widths: 10 and 20 cm. A treatment planning system was used to compare the position of the 50% curve relative to the medial and lateral posterior field edge. Discrepancies in the target and lung dose volume histograms were also compared.

The half field width measured from a given isocenter to the posterior field edge that follows the laser projection was the true half field width divided by the cosine of collimator angle. By rotating the collimator  $30^\circ$ , the 50% isodose curve deviated from posterior field edge points by 0.8 and 1.5 cm for a 5 and 10 cm half field width respectively; thus, gave up to a 15% discrepancy. The results of the DVH comparisons will be reported.

In conclusion, utilizing large collimator rotations will not allow for an accurate central axis distribution if the contour is taken along the transverse laser. A solution to avoid this discrepancy would be either to take the contour along the collimator crosshairs or implement the use of an angle board.