

**LSUHSC – Shreveport  
Radiation Oncology  
Proc. 19.9.18**

**GAP CALCULATION - SEPARATION OF ADJACENT FIELDS**

**Policy:**

To provide guidelines to establish a separation or gap on the skin for two adjacent fields to prevent any unwanted overlap of dose. Gap calculations are to be done by a physicist, dosimetrist, or therapist. Any gap calculation performed by dosimetrist or therapist must be check by the physicist.

**Procedure:**

1. Have the physician determine the depth that the borders of the two fields are to intersect. The borders are defined by the 50% isodose line.
2. Take a diameter of patient at junction of the two fields and calculate the depth of calculation.
3. Determine field size on skin of each adjacent field from the CAX to gap. For non-asymmetric jaws you would use half of the collimator length. For asymmetric jaws you would use either y, or y2 depending on which one abutts the other field. The field size is always the size on the patient's skin surface, which is not the collimator reading if the TSD is other than isocenter (e.g. if F.S. is 15L x 10W on collimator and treatment TSD is 110, the F.S. on skin would be:

$$\frac{110}{100} \times 15 \text{ cm} = 16.5$$

4. Use the attached formula and diagram to determine gap.  
  
y1, y2 = Lengths of two fields from CAX to junction.  
f1, f2 = Treatment TSD's  
d = Depth of prescribed gap (point where 50% isodose lines of two fields intersect.)  
a + b = Length of gap.
5. In very difficult cases, use the computer.

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