

**Purpose:** To evaluate the dose outside the field and fit into mathematical formula in order to find out the dose easily and if possible to enter into the treatment planning system.

**Methods:** Slice phantom RW3 and octagonal phantom octavious were used with 2darray 729 for the calculation of peripheral dose and outside the field. The dose measured up to 65cm from the center of the field and fit with the analytic formula. Entire place is covered with slice phantom in order to get dose properly simulating patient setup.

**Results:** There was fall off from the first portion at the transition to the second portion in the case of lower field size less than 6\*6 at the range of 23cm from the center and this point corresponds to angle subtended at the collimator edge is 68 deg and most probable scattered energy is 0.7MeV Compton photon. In this region the dose is mainly due to collimator scattering and lateral equilibrium for small field sizes. The angle subtended at the collimator edge to the point at 23cm with respect to axis corresponds to angular distribution of Compton photons fall into plateau region after the initial raise. Both power fit in the form of  $a*x^n$  and exponential curve fit in the form of  $a*\exp(b)+ c*\exp(d)$  were applied and analyzed. The table is provided for the values for a,b,c,d for the depth 16cm and 5cm. Knowing these values one can know the dose beyond 10% of isodose line. The simple formulas deduced to find out exponential term and constant term in the power fit and can be fit for any field size and interpolated for depth.

**Conclusions:** This work indicates that the outside field can be modeled and can be compared with TPS calculation and if possible can be implemented and verified with Monte Carlo.