

**STUDY OF DOSIMETRIC CHARACTERISTICS OF MOTORIZED  
WEDGES IN 6MV PHOTON BEAM OF LINEAR ACCELERATOR  
USED IN RADIOTHERAPY**

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The Dosimetric and physical characteristics of Motorized wedges in a linear accelerator (Elakta Synergy). The dosimetric parameters such as wedge factor, percentage depth dose, surface dose and peripheral dose were studied for motorized wedges for wedge angle of (15°, 30°, 45° & 60°) in 6 MV photon beam by using parallel plate ionization chamber and 0.13cc ionization chamber. The following field sizes were used for this study: 5×5 cm<sup>2</sup>, 10×10 cm<sup>2</sup>, 15×15 cm<sup>2</sup> and 20×20 cm<sup>2</sup> for open and wedged fields. Wedge factor was found to increase with increase field size. With wedge angle 60° the use single wedge factor measured for 10×10 cm<sup>2</sup> fields introduced errors up to 1.83%, for 15×15 cm<sup>2</sup> field sizes. For a 20×20 cm<sup>2</sup> field with this wedge the error is 3.85%. The introduction of wedge is not significantly altering the percentage depth dose with range of 3 to 15 cm depth, which is clinically very important. It increases percentage depth dose value significantly (up to 7.45%) at higher depth (e.g. 20 cm). This phenomenon is found to be higher at higher wedge angles which may be due beam hardening effect. The introduction of wedge reduces the surface dose up to 21.08%. The introduction of wedge increases the peripheral dose away from the field edge up to 6.41%.