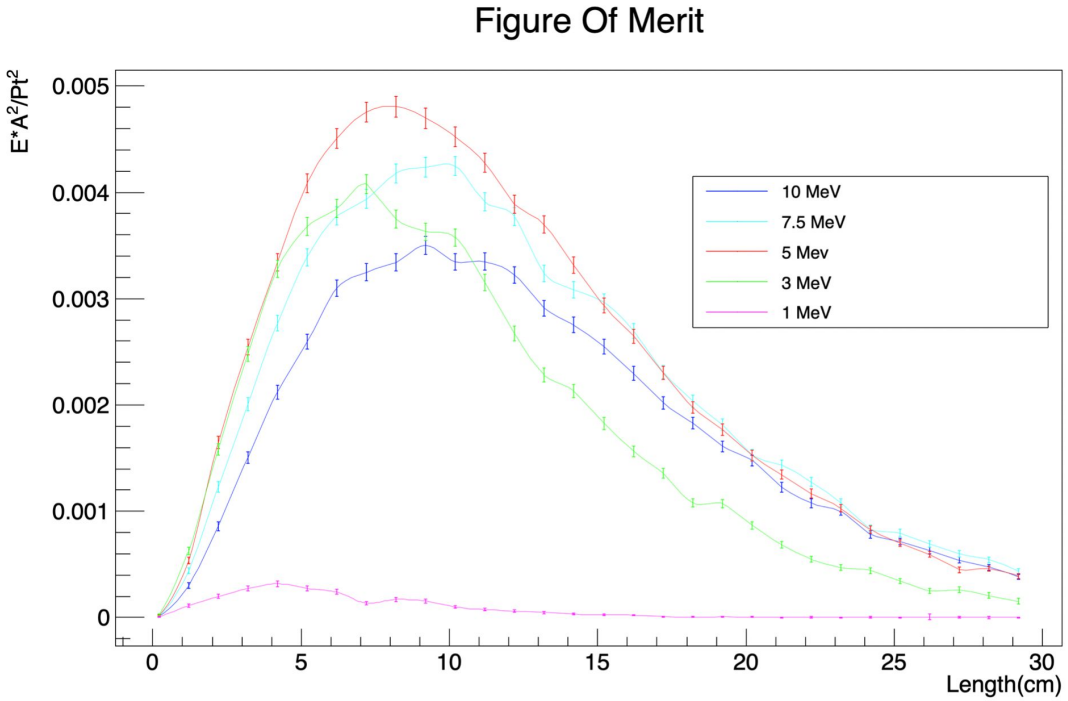
Goal of the meeting

I) Optimize Iron Length with radiator

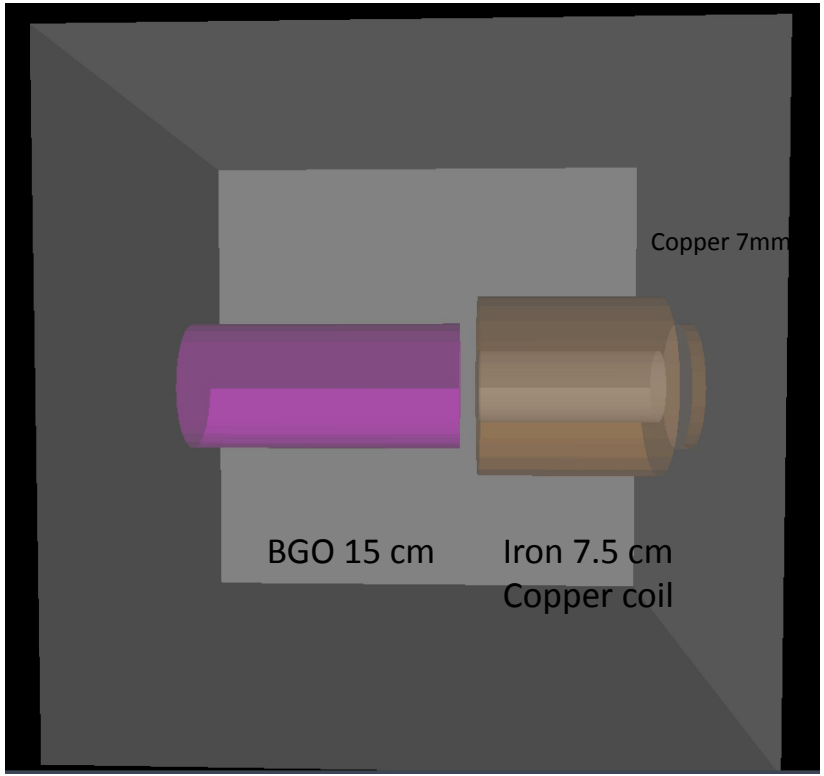
II) Damage radiation

Compton Polarimeter

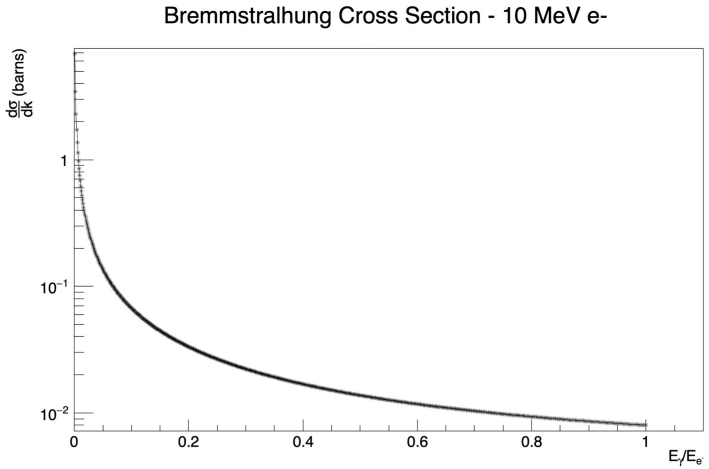
I-A) Figure of Merit (Mono-Kinetic)

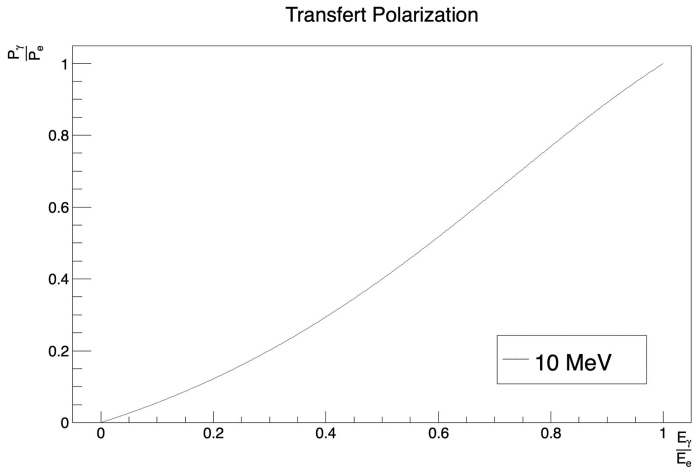


I-A) Compton Polarimeter

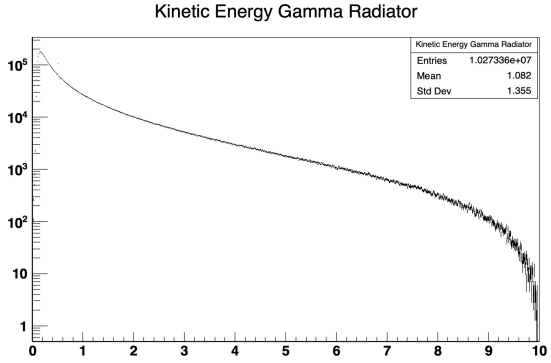


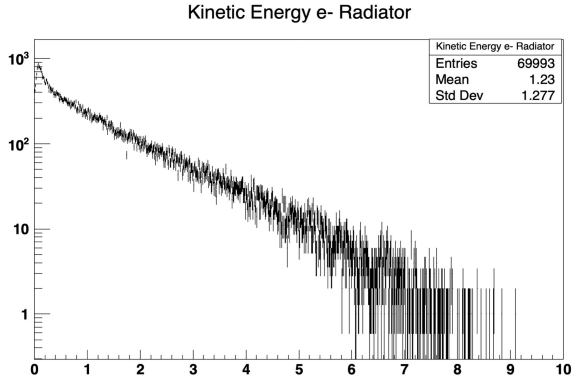
I-A) Compton Polarimeter

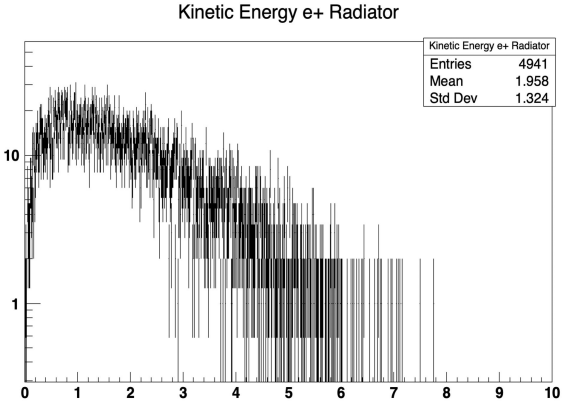




I-B) Particles of the beam

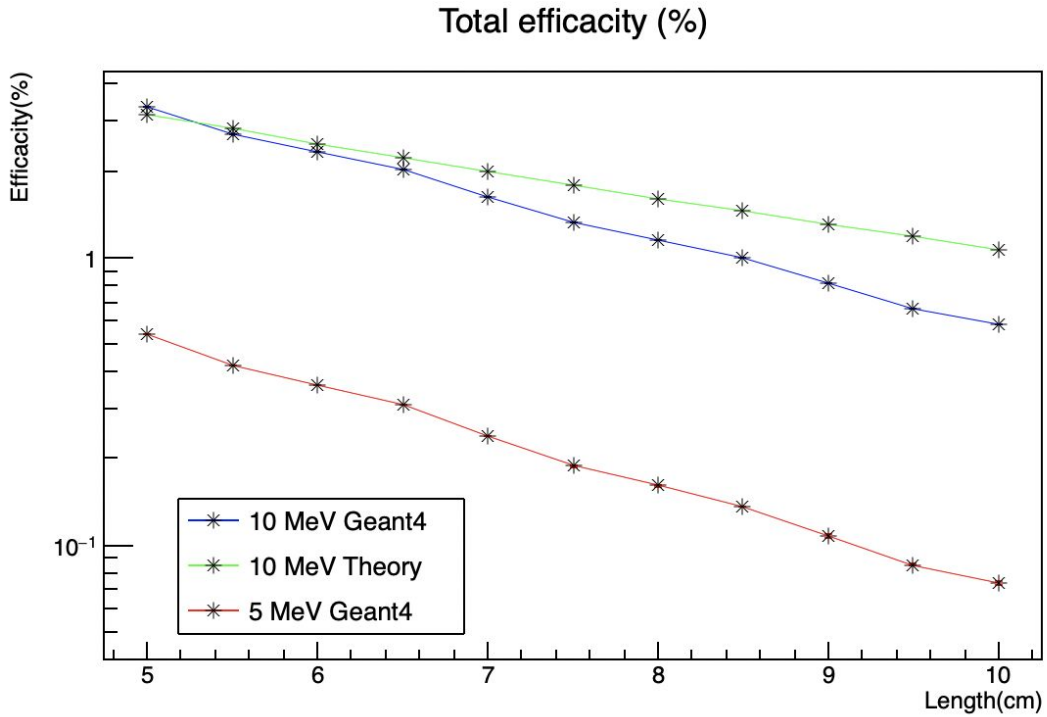




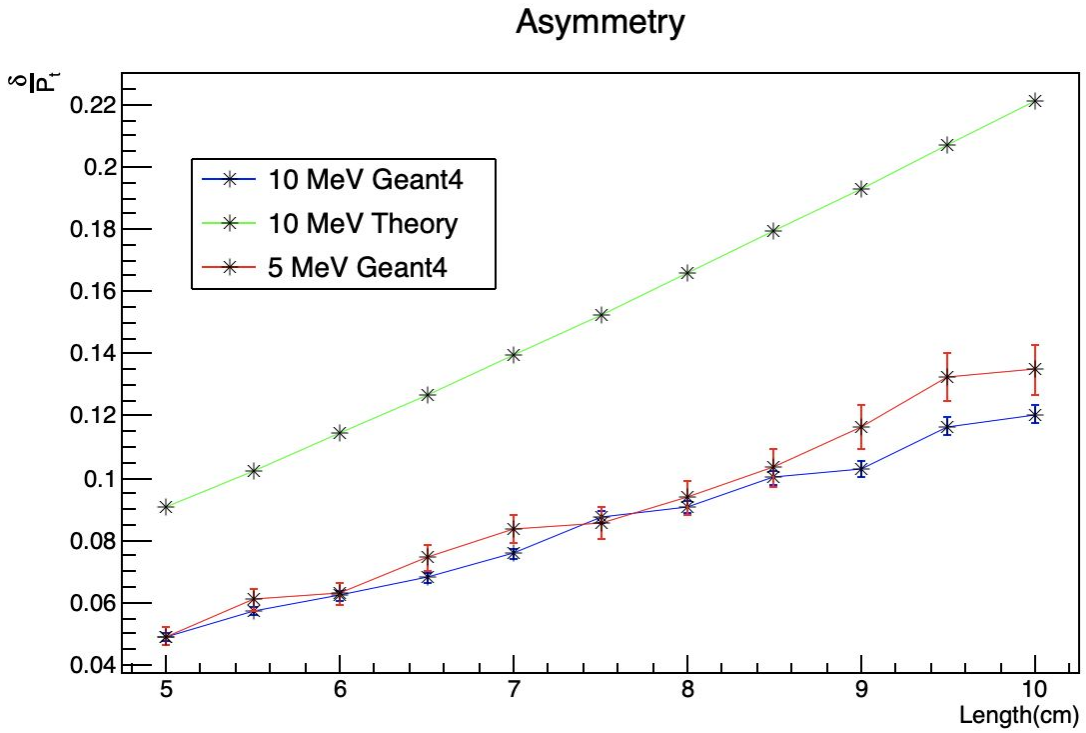


7e- for 1000 γ

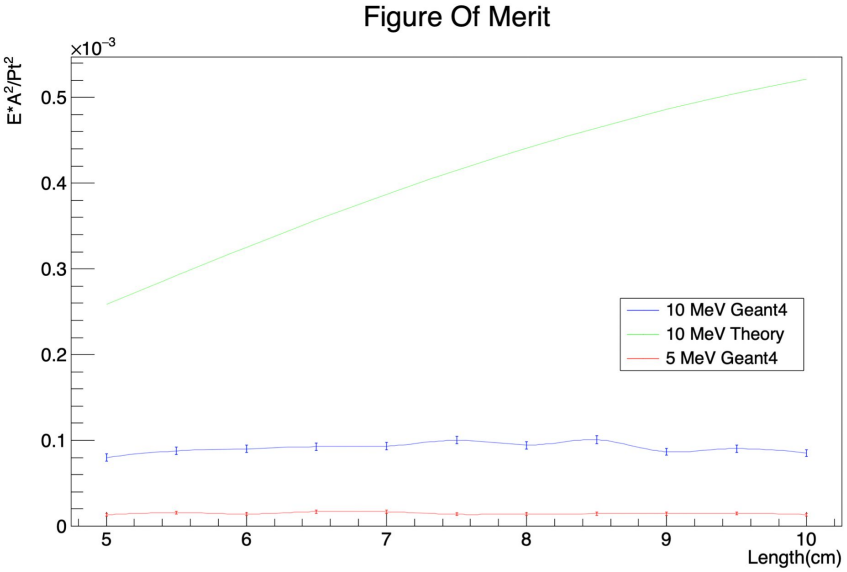
I-C) Total Efficiency



I-D) Asymmetry



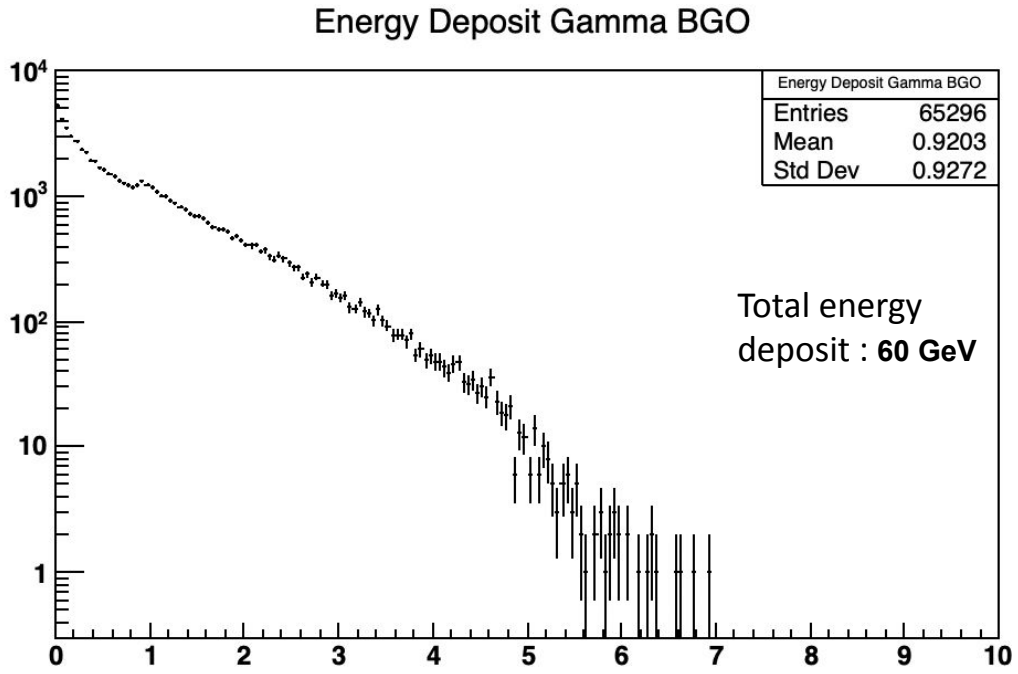
I-E) fOM



Next step : Simulation between 1 and 20 cm of Iron

II) Energy deposit in BGO - 10M e-

7mm Copper - 7.5cm Iron - 15cm BGO



I-F) Radiation damage

BGO : 1 - 10 Gray

CsI : 10 Gray

$$D = \frac{\text{Deposited Energy (J)}}{\text{Exposed Mass (kg)}}$$

Calcul for 7mm Copper - 7.5 cm Iron & 15cm BGO - ρ=7.874 g/cm3 - V=577cm3 - f=1/3

1 µA : 60 GeV for 10M e- so 960 GeV for only one bunch, which gives 33.80 nGray. Assuming that the frequency of the beam is 78 kHz, the deposit dose in the crystal will be 2.63 mGray by second. Assuming that we have to stay below 1 Gray , it means that the crystal should not be radiated more than **2 minutes !**

1 nA : 0.96 GeV for only one bunch, which gives 33.80 pGray.The deposit dose in the crystal will be 2.63 µGray by second. Assuming that we have to stay below 1 Gray , it means that the crystal should not be radiated more than **2 days. (52 hours)**