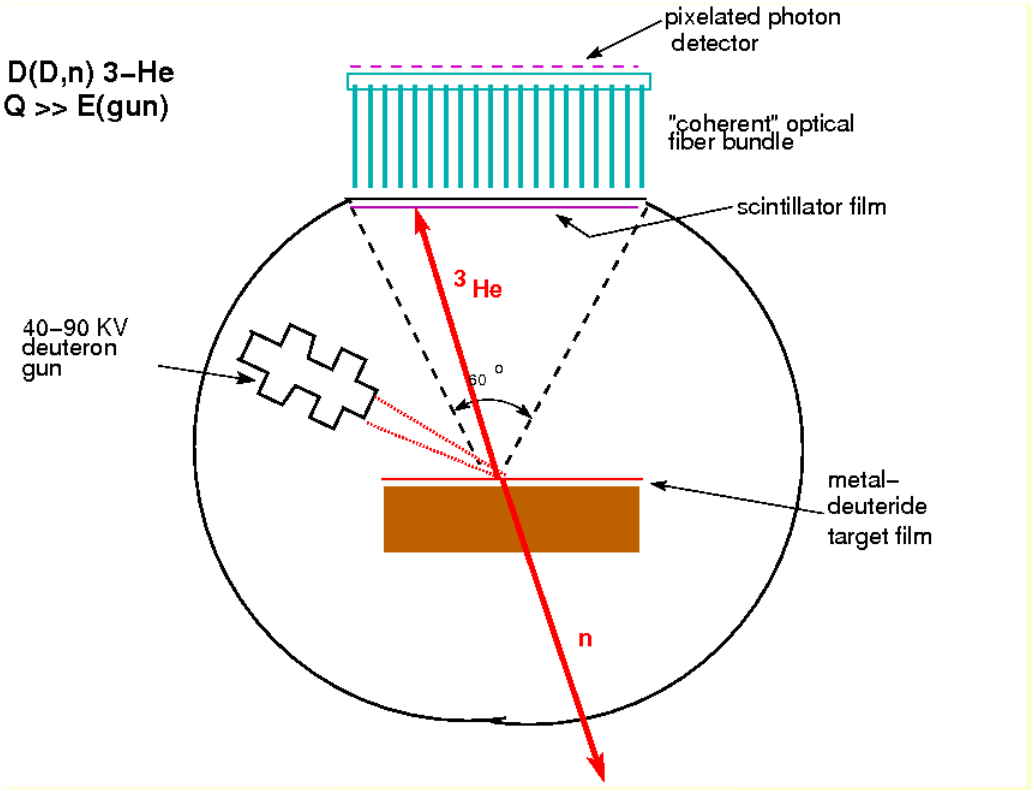
Neutron Gun Set-up

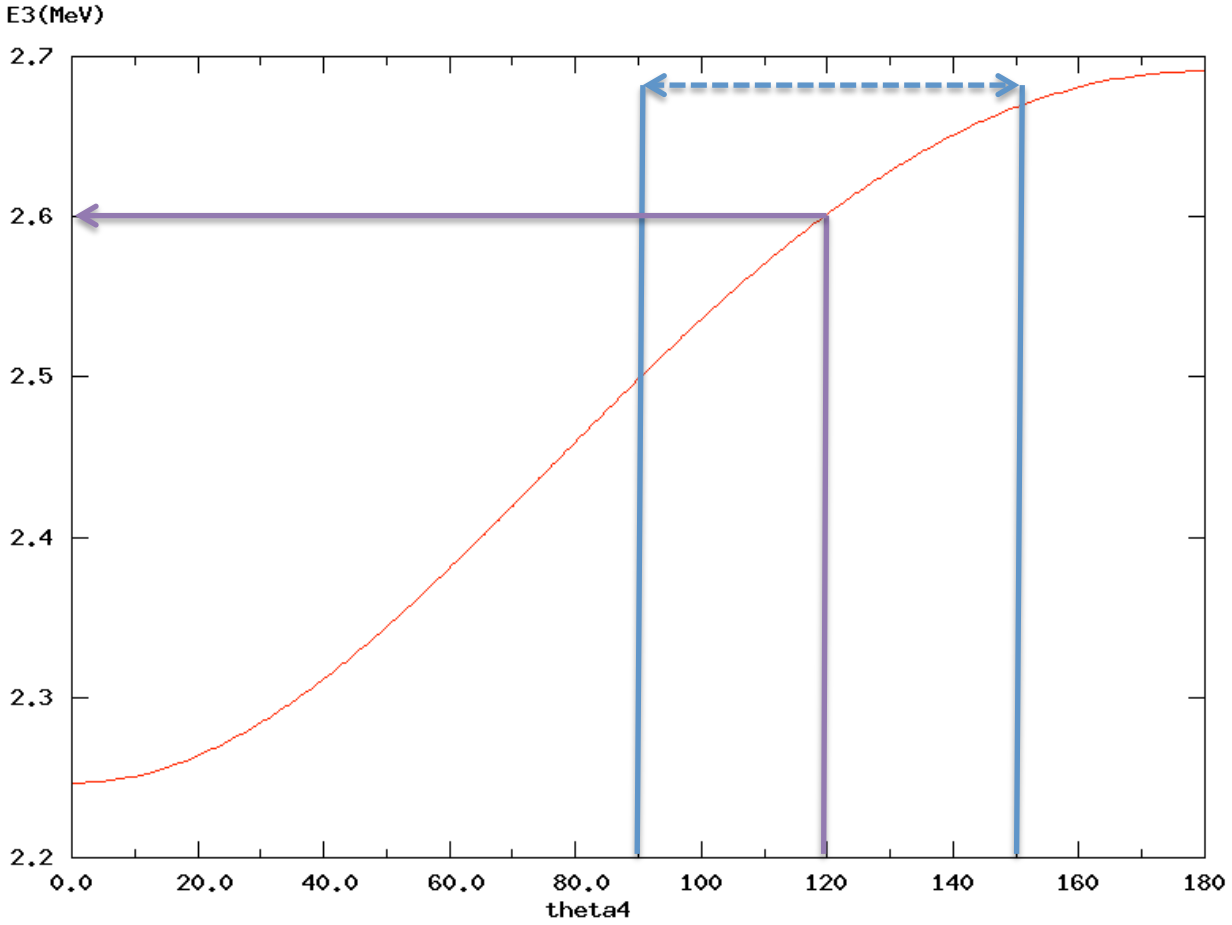
Work in progress

Neutron gun geometry-1



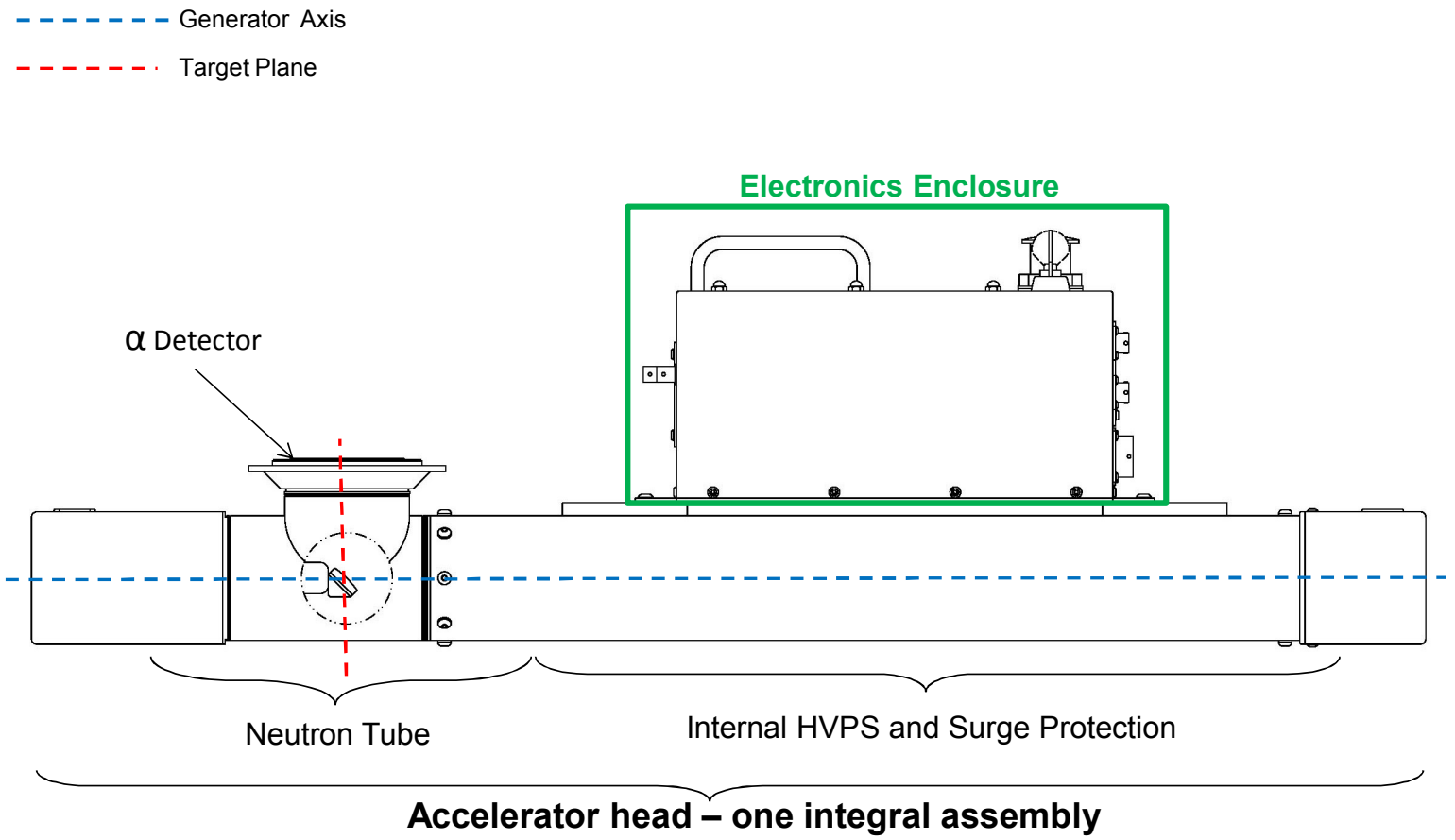
- HV fixed to 40 KV,

Neutron Energy (E_3) vs ^{3}He angle (θ_4)



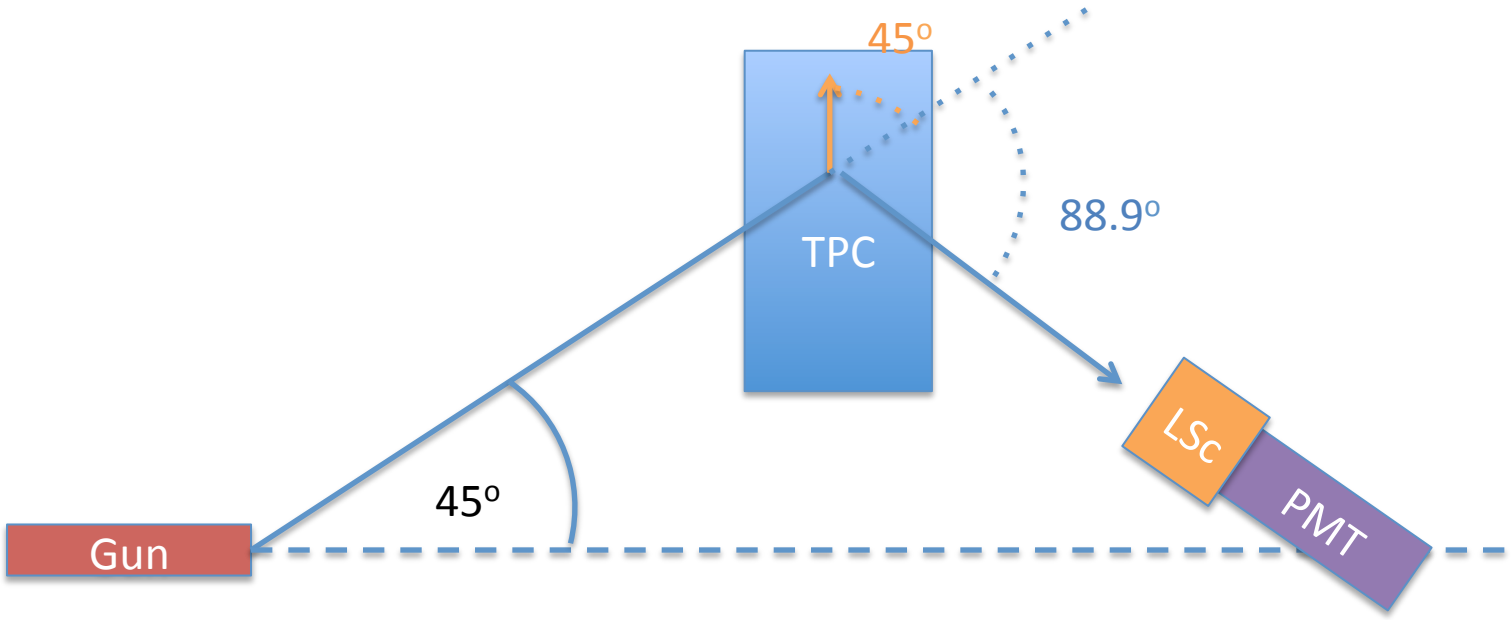
- Tagged neutron in the range of 3He recoil angle b/w 90 and 150 degrees
- Assume 120 degree in the following

Neutron gun geometry-2

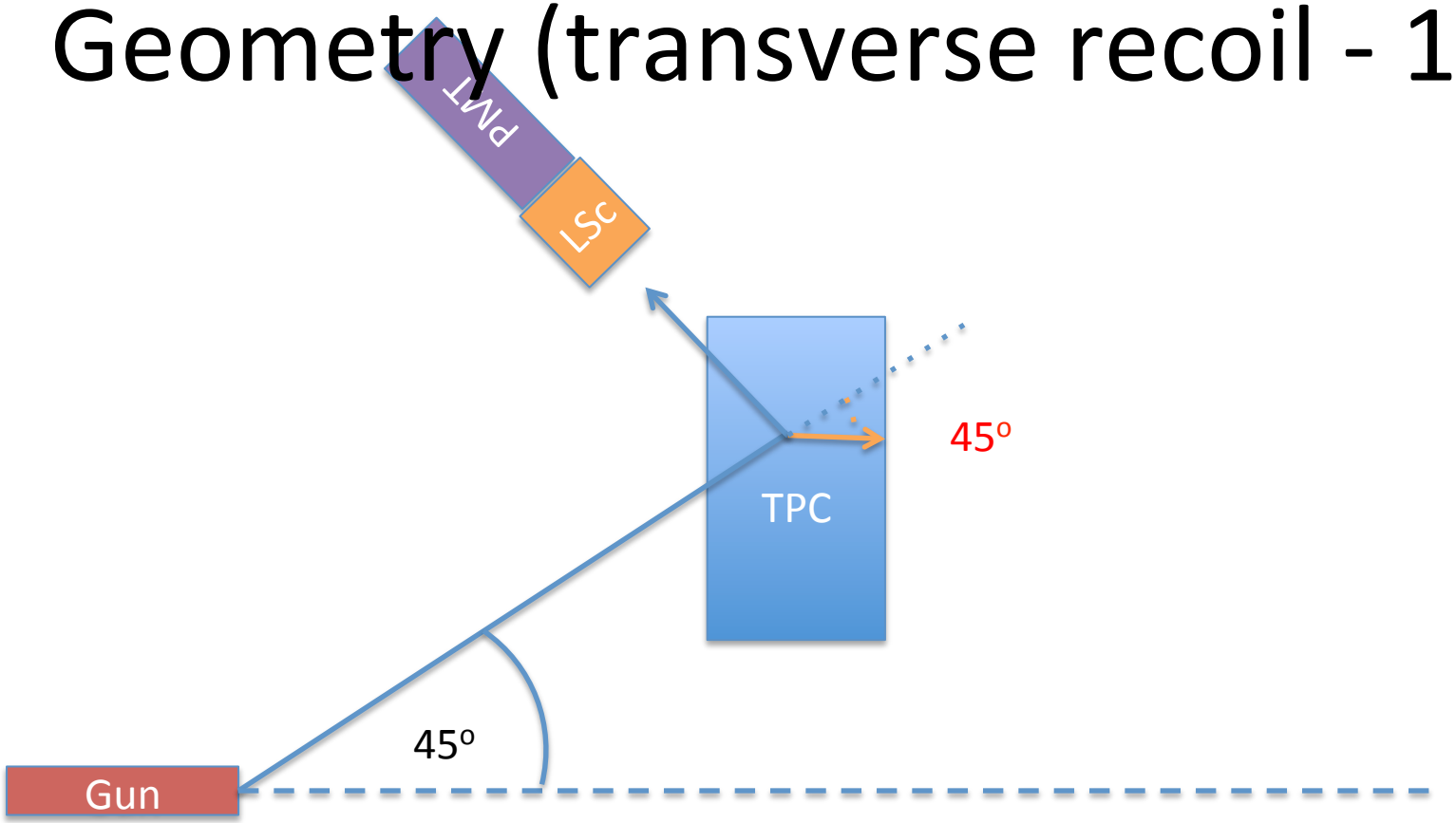


Different geometry? 60° to 120°??? (2.5 MeV neutron energy at 90° vs 2.6 MeV at 150°)

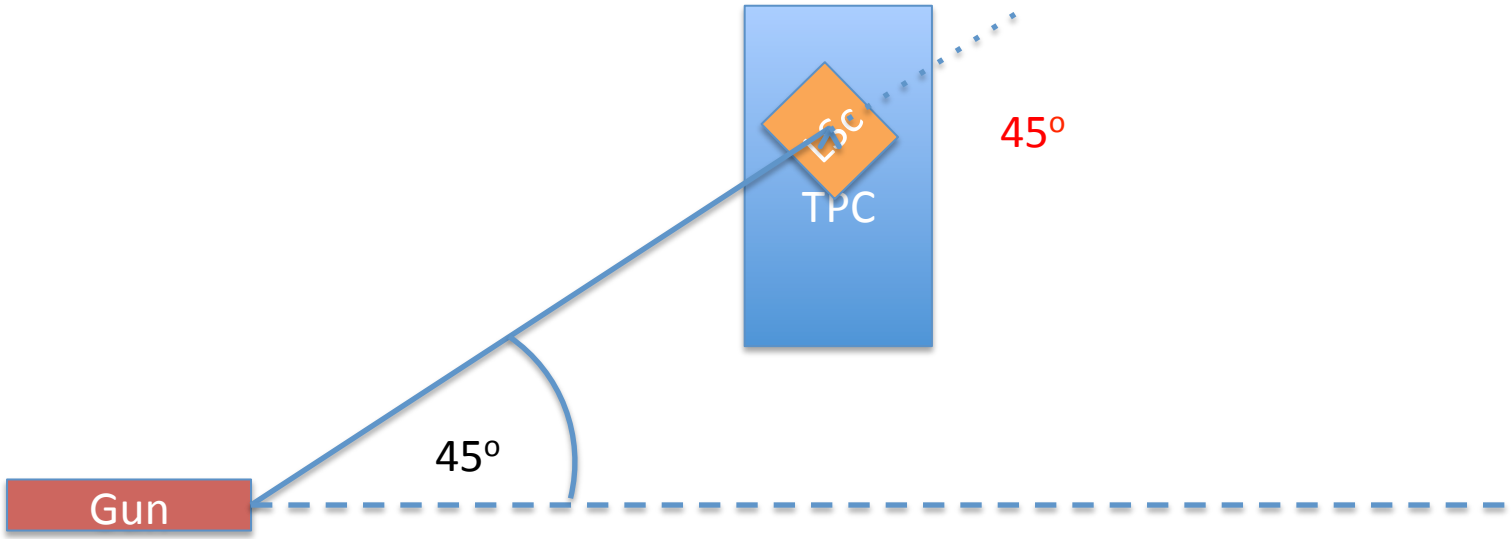
Geometry (parallel recoil)



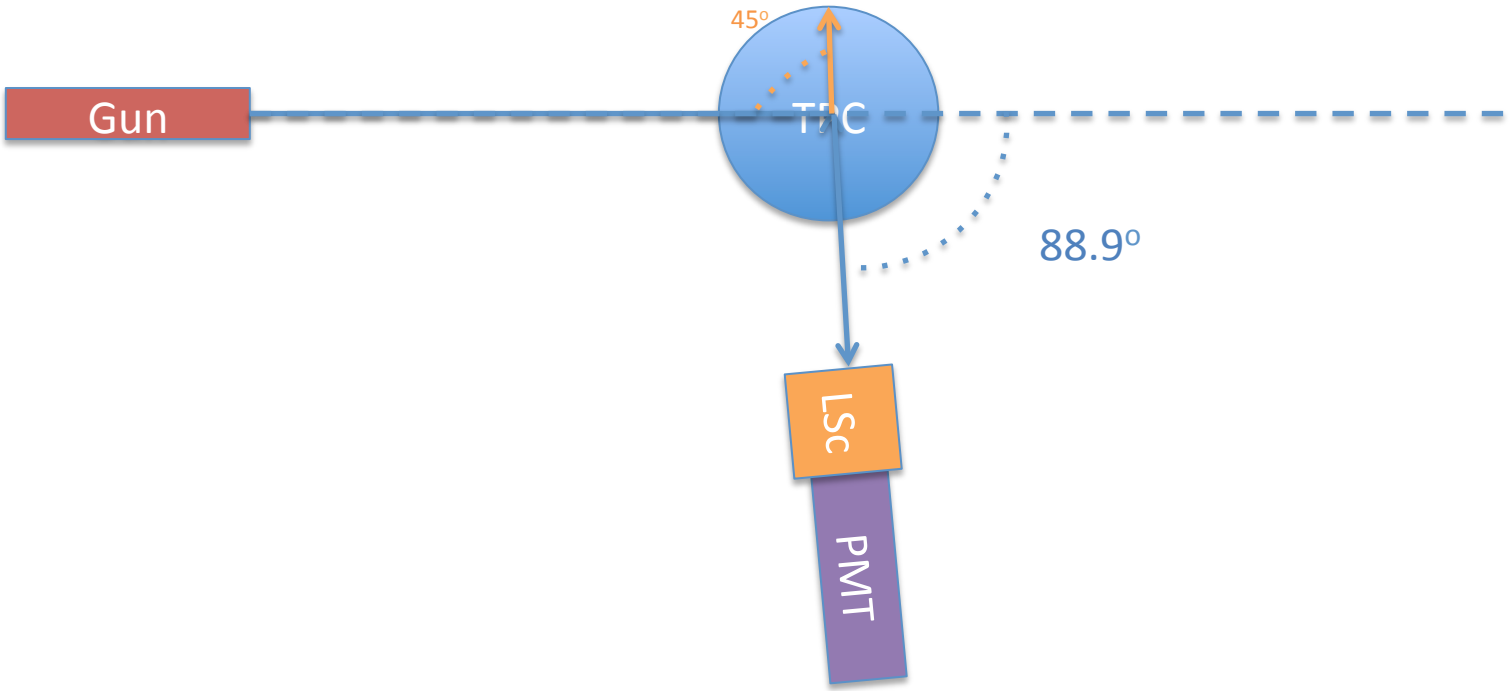
Geometry (transverse recoil - 1)



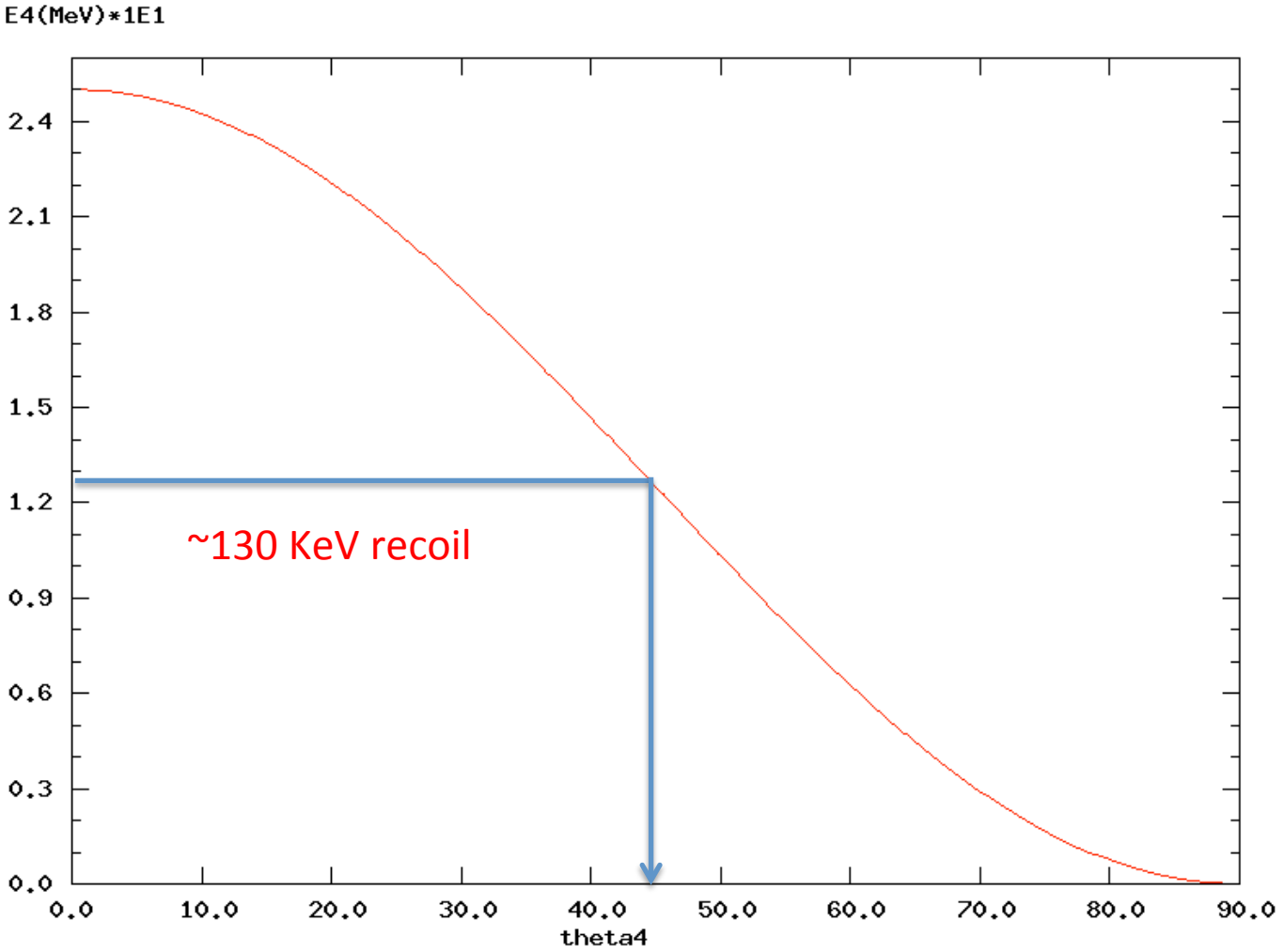
Geometry (transverse recoil - 2)



Geometry (transverse recoil - 2)



^{40}Ar recoil T vs ^{40}Ar recoil angle



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To be continued

- Will focalize on the neutron gun set-up
- Calculate needed angles in lab frame for different possible geometry of the gun to TPC geometry to see how to better cover the interesting region in transverse and parallel recoil with the limited number of neutron detector at hand
- A simple simulation would help a lot