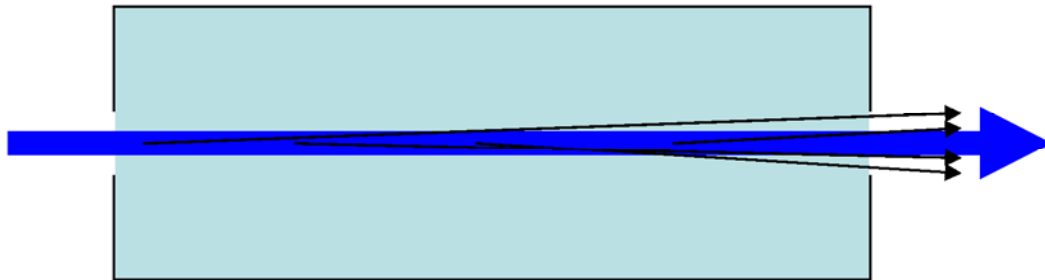


Simulation results of possible recoil loose in the gas target ($^{12}\text{C}(\alpha,\gamma)^{16}\text{O}$ Reaction)



$$E_r = \frac{m_b}{m_r} E_b + \frac{E_\gamma^2}{2m_r c^2} - E_\gamma \sqrt{\frac{2m_b E_b}{m_r^2 c^2}} \cos \theta_\gamma$$

θ_γ : Random according to the angular distribution

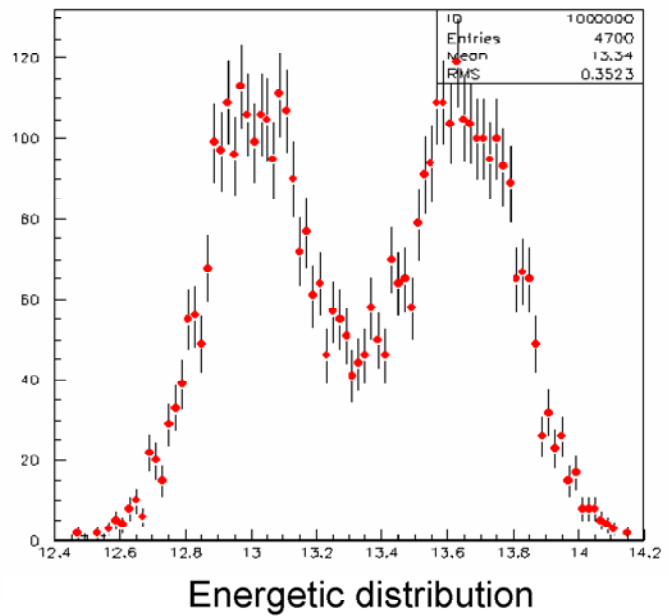
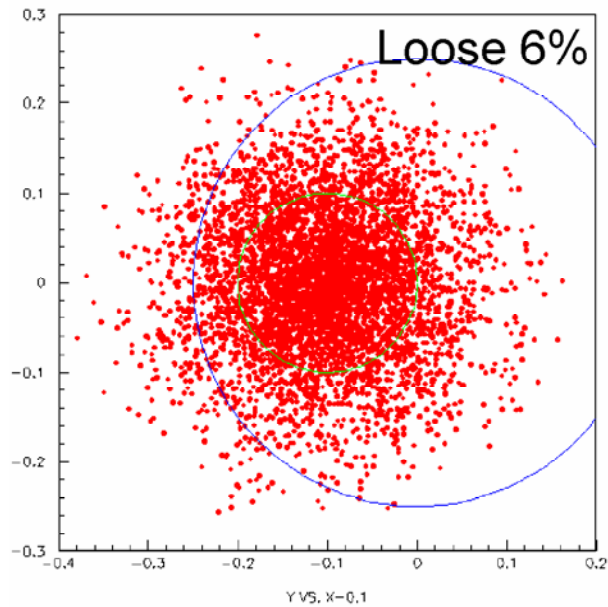
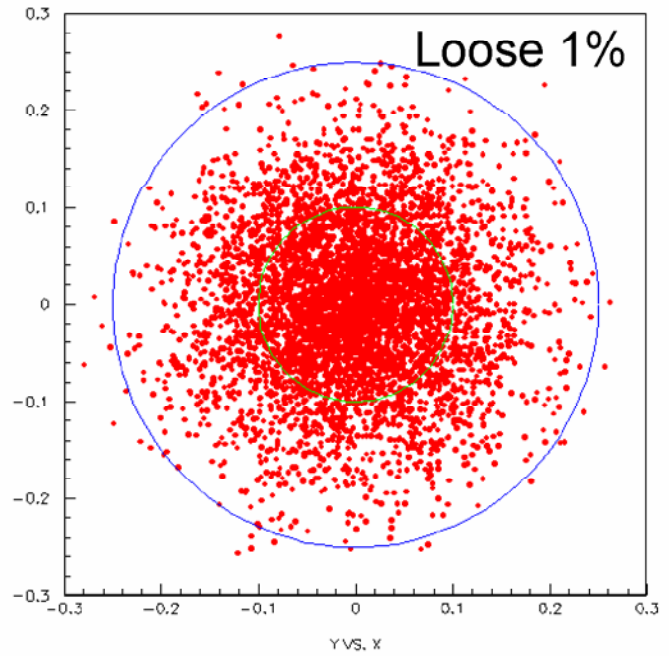
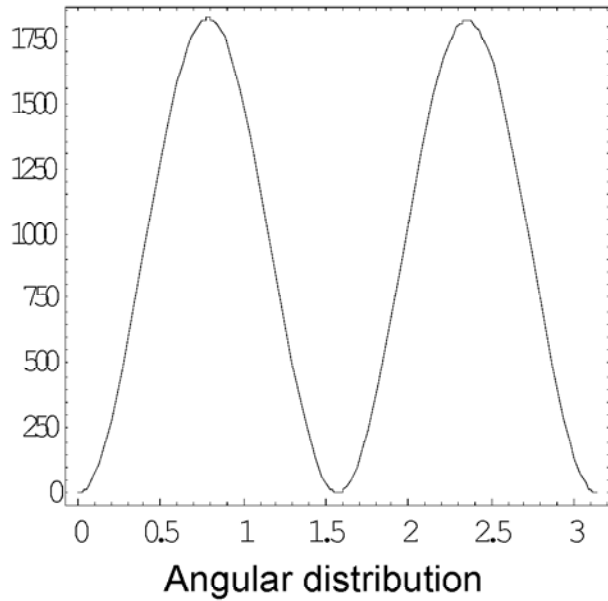
E_b : As a function of reaction position z

Beam spot: 1 mm (Radius)

Target hole: 2.5 mm (Radius)

Reaction point: Random of length and beam spot

Simulation results for $E_{\text{lab}} = 1.5 \text{ MeV/u}$



Simulation results for $E_{\text{lab}} = 0.81 \text{ MeV/u}$

