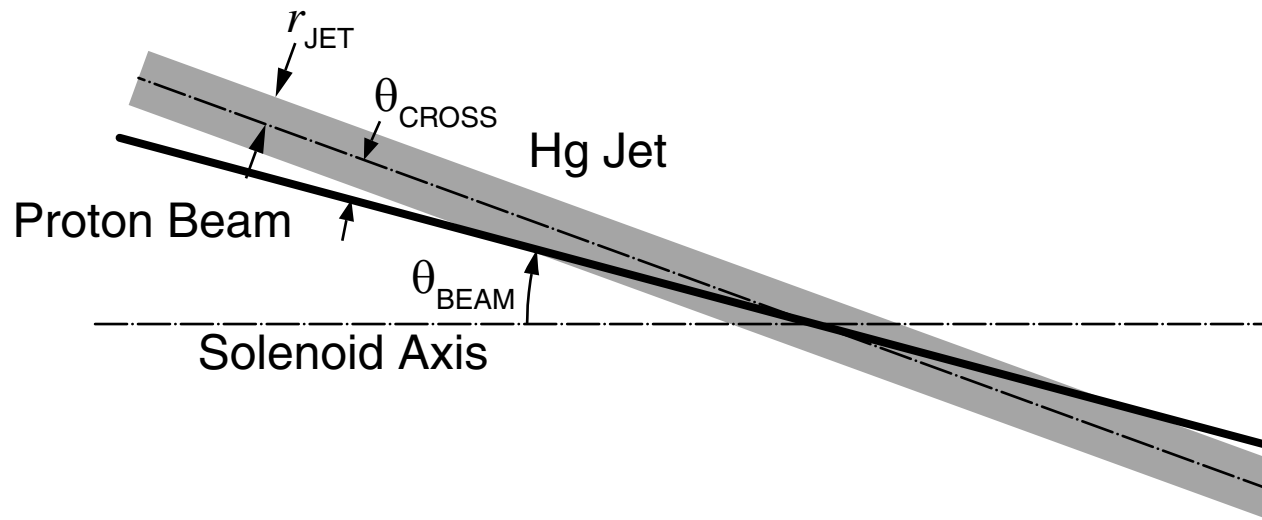


Beam/Jet Trajectories

April 1, 2009

Hg Jet Target Geometry

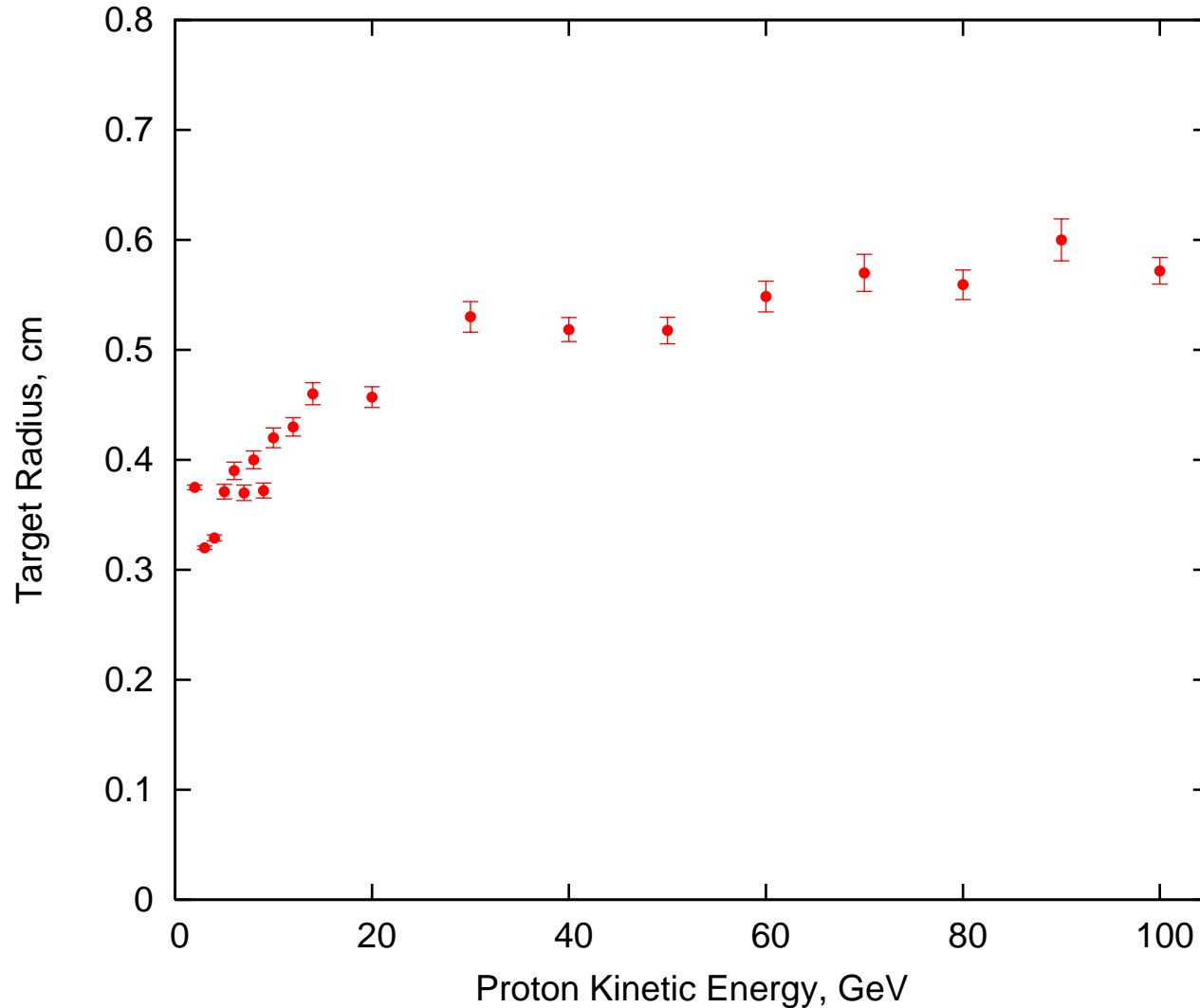


Previous results: Radius 5mm, $\theta_{\text{beam}} = 67\text{mrad}$

$\theta_{\text{crossing}} = 33\text{mrad}$

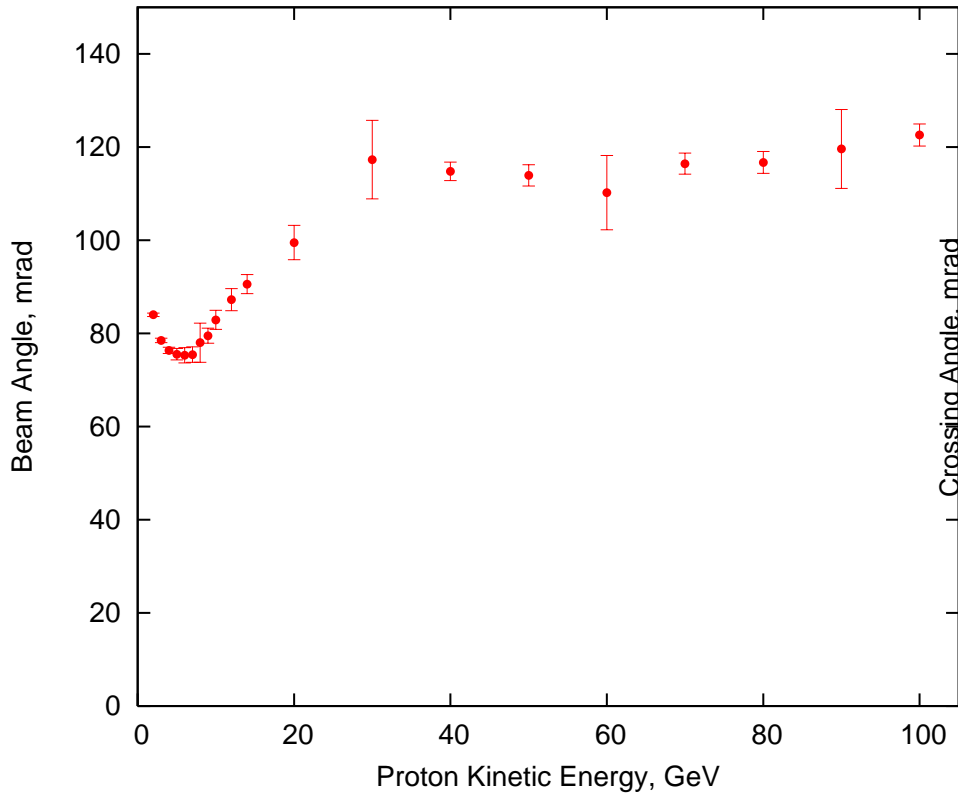
Optimized Target Radius 2 to 100 GeV

Optimized Target Radius



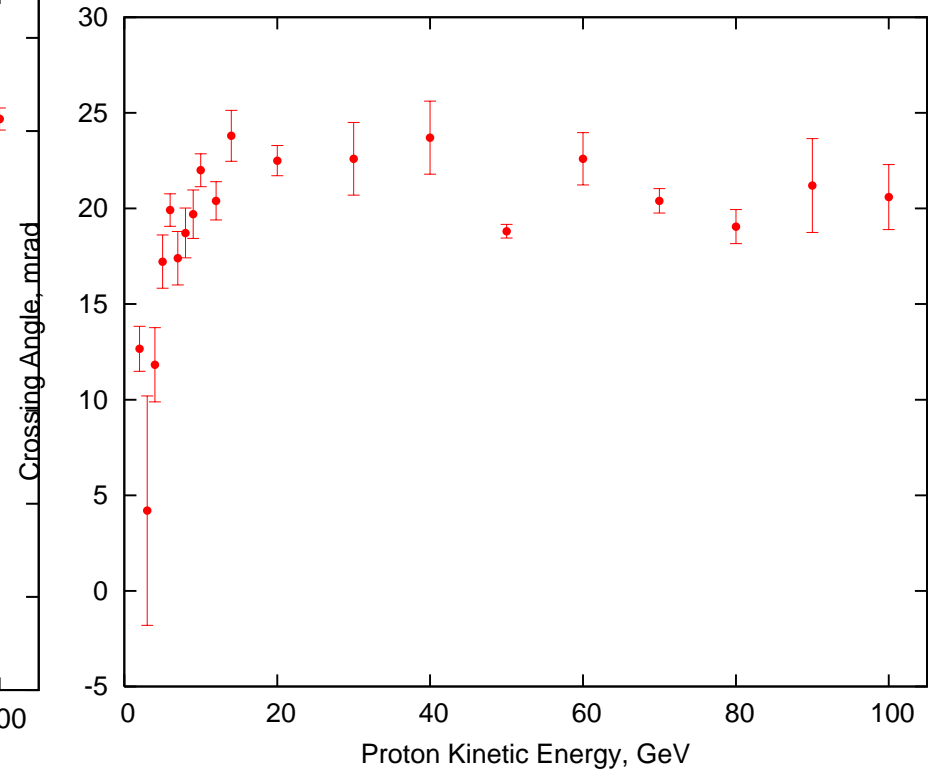
Beam Angle and Jet/Beam Crossing Angle

Optimized Beam Angle



Beam Angle

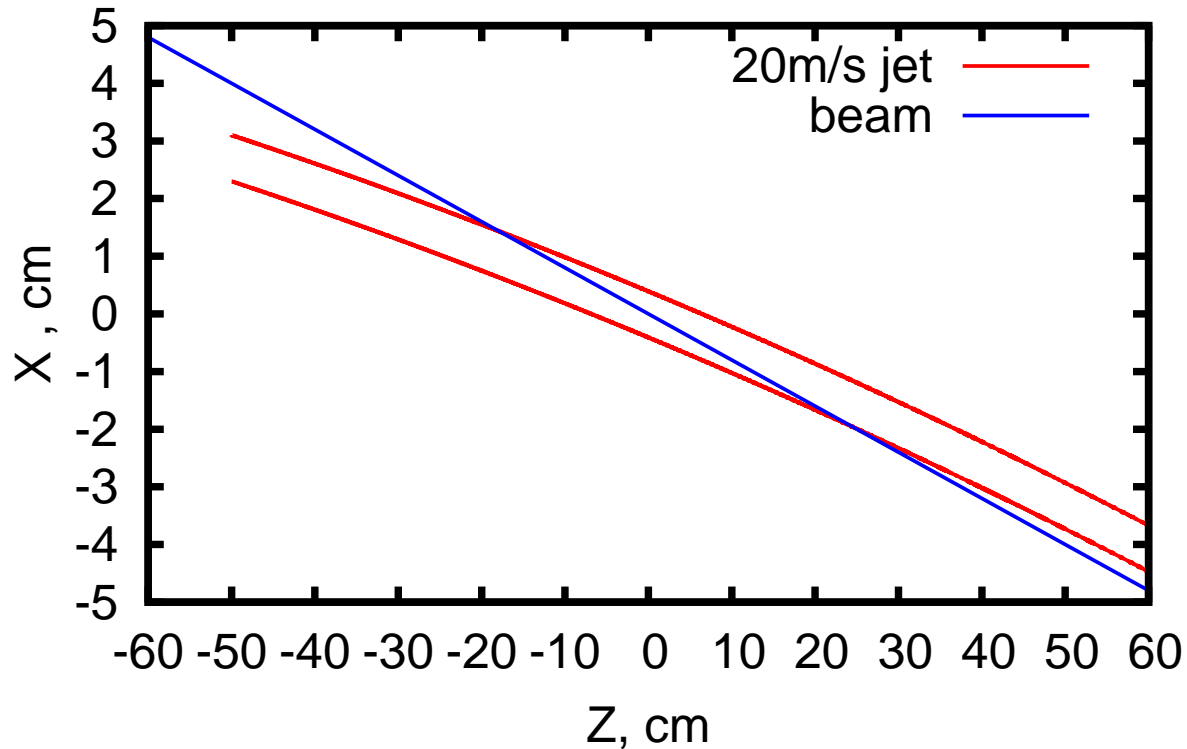
Optimized Crossing Angle



Crossing Angle

20m/s Jet with gravity

Hg Jet/Proton Beam Trajectories



Jet launch at $Z = -50$ cm with -48 mrad; Beam angle = -80 mrad

Jet/Beam full overlap -18 cm $< Z < 24$ cm (42 cm)

Beam/Jet Crossing angle at $Z = 0$ cm is 20 mrad

Replace 42cm with 20m/s Jet

$$\begin{aligned}\text{Replacement time} &= 42\text{cm}/20\text{m/s} \\ &= 21 \text{ ms}\end{aligned}$$

$$\text{Rep-rate} = 1/21\text{ms} = 48\text{Hz}$$