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

Proton Kinetic Energy, GeV

Target Radius, cm
Beam Angle and Jet/Beam Crossing Angle

Optimized Beam Angle

Optimized Crossing Angle

Beam Angle

Crossing Angle
Jet launch at Z=-50cm with -48mrad; Beam angle = -80mrad
Jet/Beam full overlap -18cm <Z<24cm (42cm)
Beam/Jet Crossing angle at Z=0cm is 20mrad
Replace 42cm with 20m/s Jet

Replacement time = $\frac{42\text{cm}}{20\text{m/s}}$

= 21 ms

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