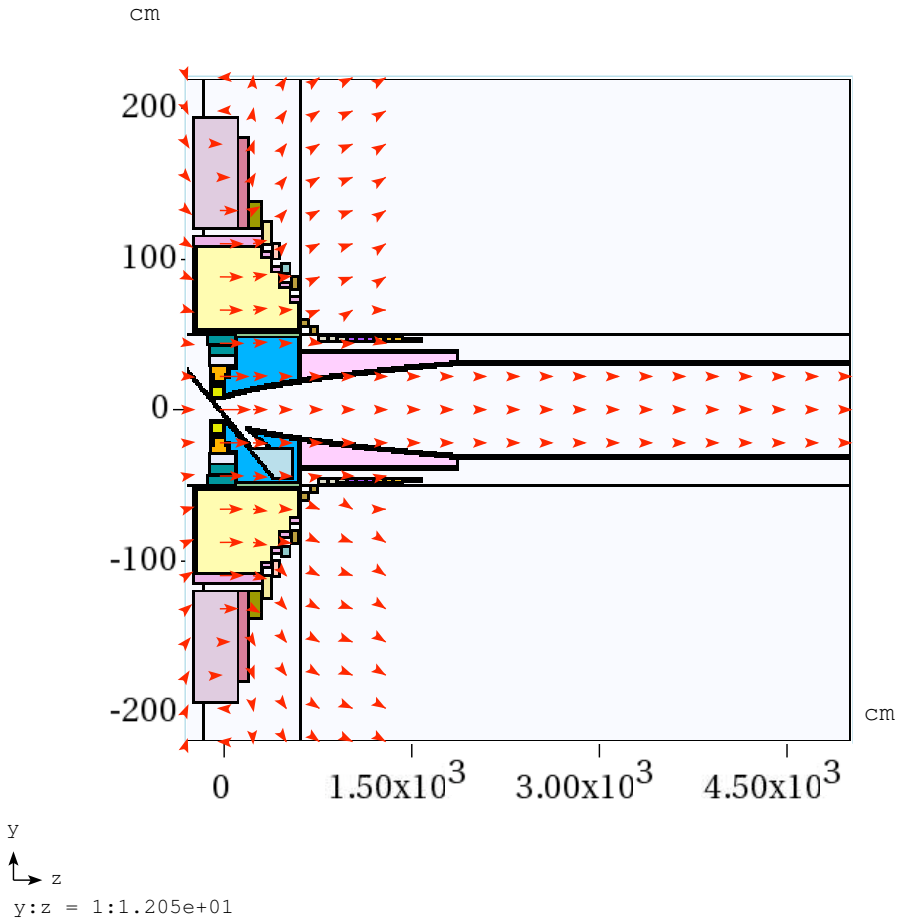
Meson Production for Hg Jet with Disk Shape

X. Ding

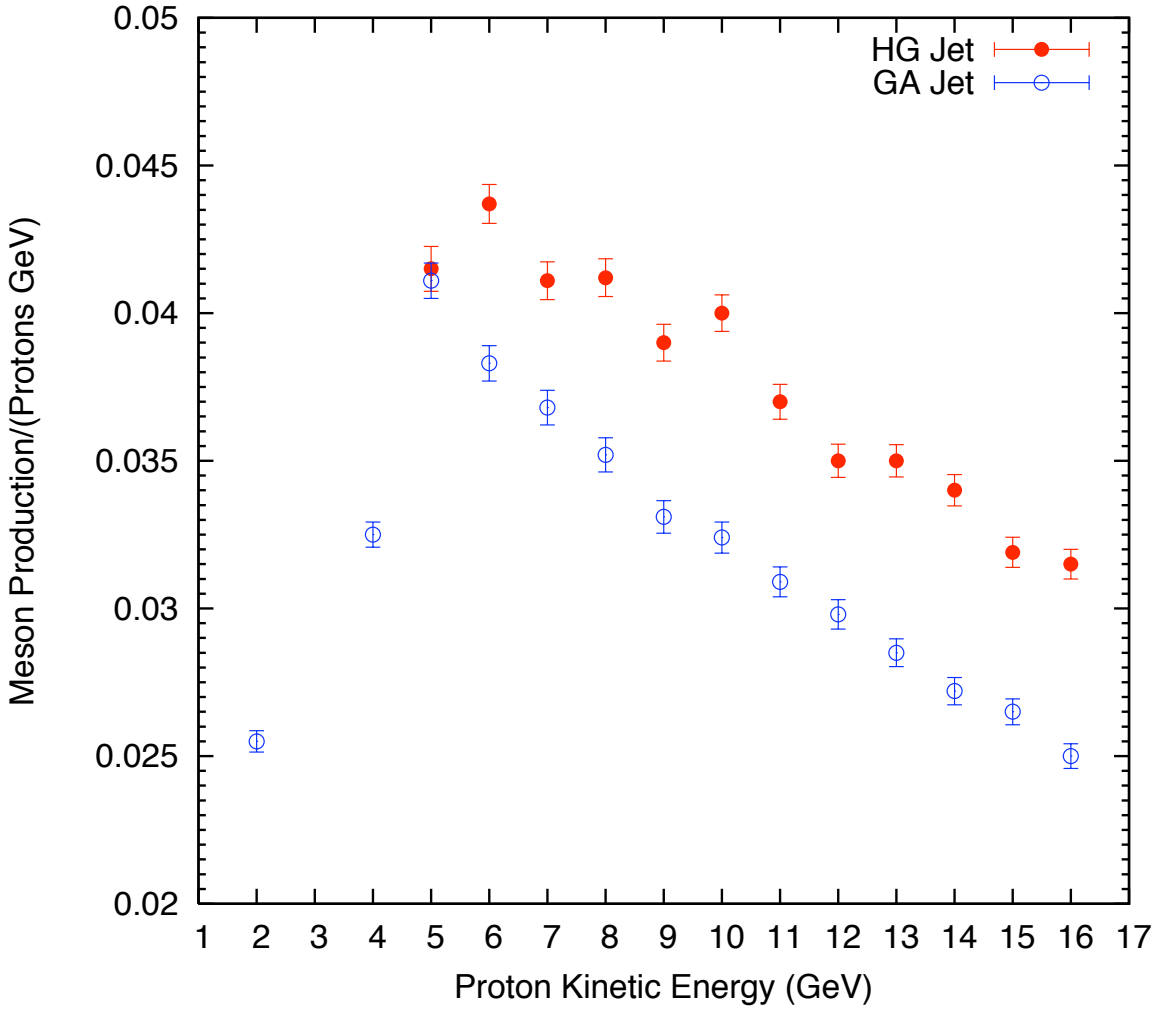
BNL-AAG Meeting

March 15, 2012

IDS120h Configuration

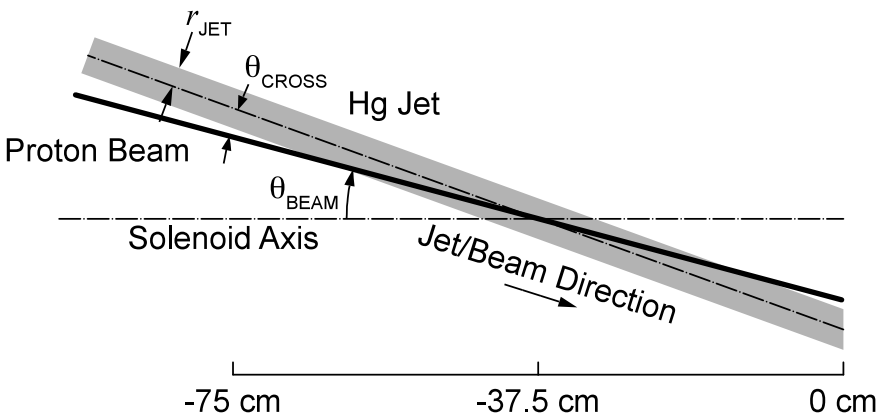


Meson Production with IDS120h

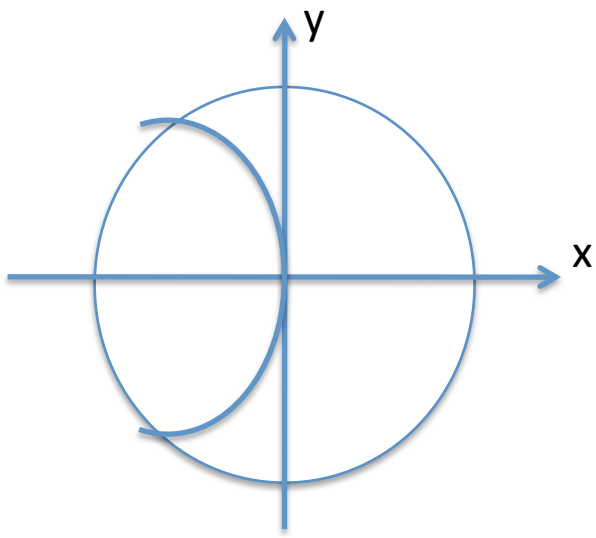


Why the meson productions are lower at KE<5 GeV?

HG Target Geometry



The mercury jet target geometry. The proton beam and mercury jet cross at z=-37.5 cm.



yz plane

Curve more at low KE

Single particle tracking (entrance and exit point in Hg Jet) for 2,4,8 proton KE with assumed same target parameters (0.404mm/20.6mrad/117mrad):

8 GeV: (-0.143,2.224,-56.475)/(-0.142,-2.23,-18.475); Δz= 38 cm

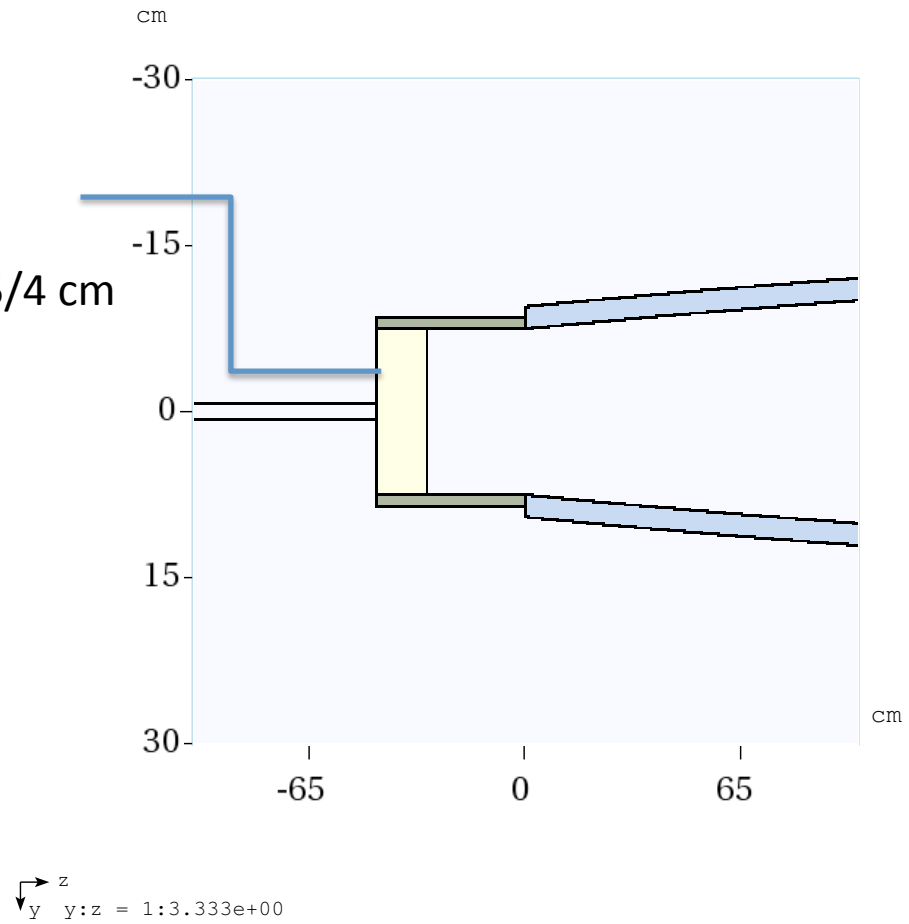
4 GeV: (-0.246,2.156,-55.988)/(-0.238,-2.129,-19.208); Δz=36.78 cm

2 GeV: (-0.363,1.95,-54.496)/(-0.371,-1.975,-20.323); Δz=34.2 cm

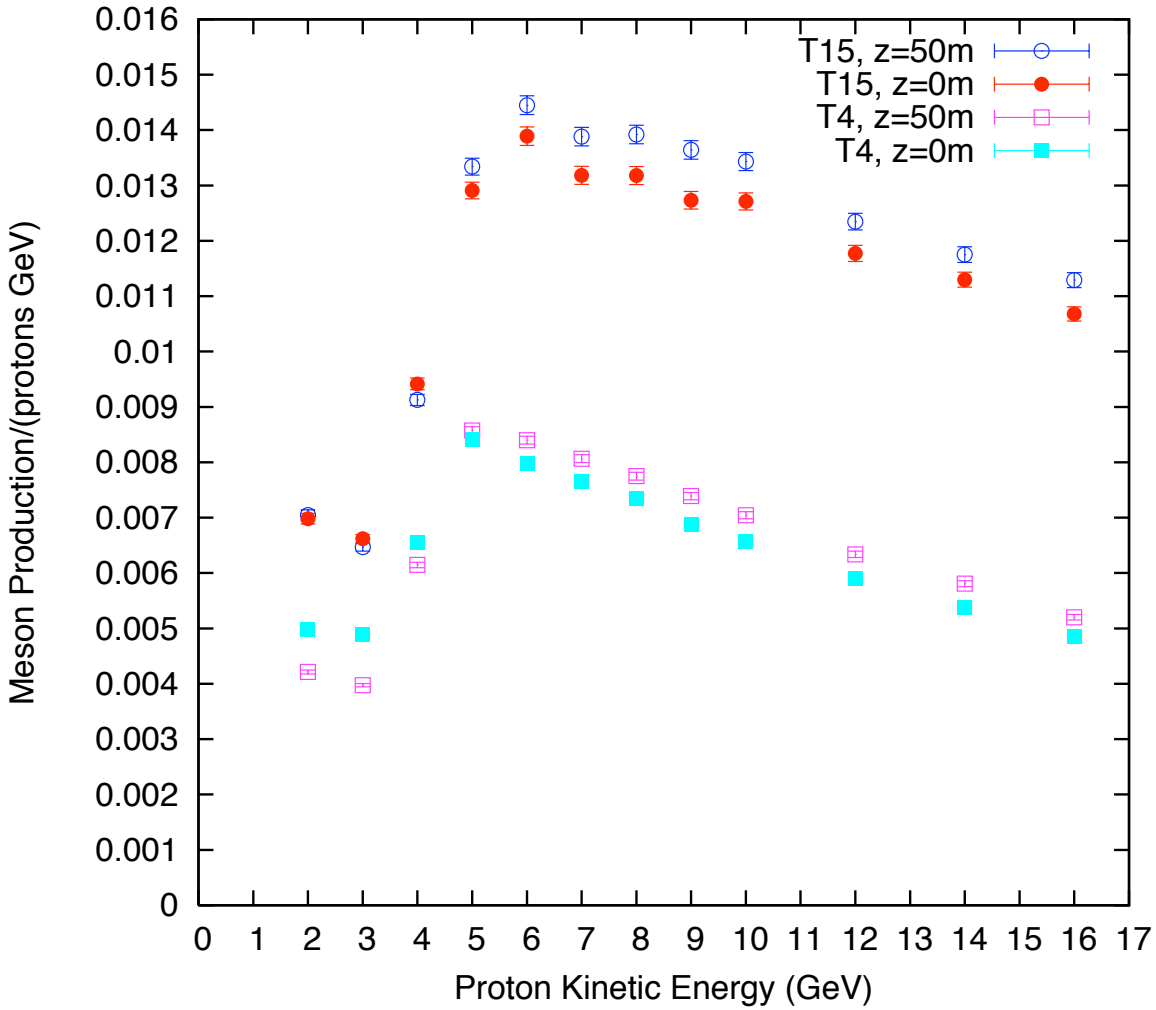
Nuclear Interaction length: HG/14.58 cm

Hg Jet with Disk Shape

Disk:
ϕ=15 cm
Depth: 15/4 cm



Meson Productions for Hg Jet with Disk Shape



Energy Spectrum