

MICE Beamline

Feb. 10, 2008

Q1 and Q2 Protons

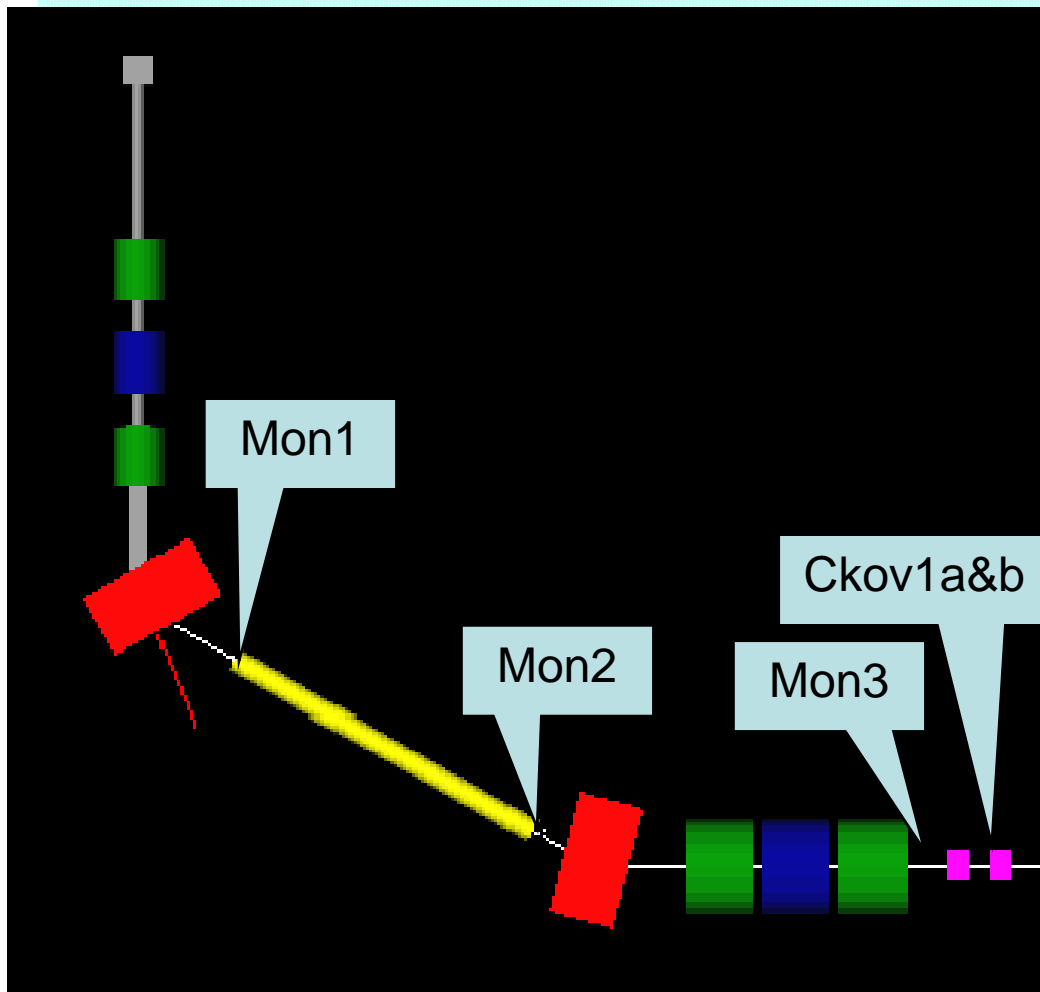
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Description

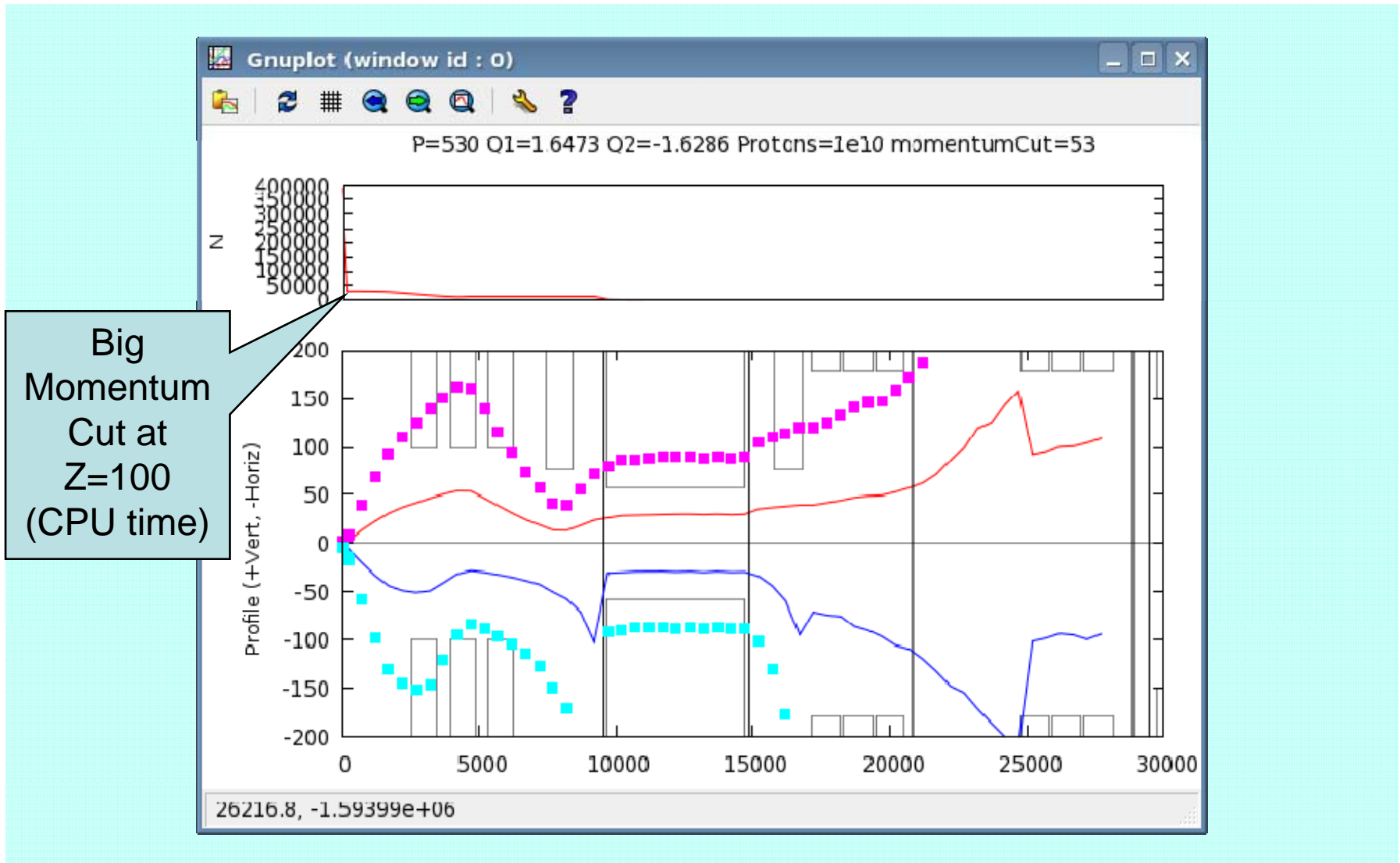
- Prospects for early beam have just B1, B2, Q1, Q2 powered
- Kevin Tilley provided a tune for $P=530$ MeV/c protons from the target
- G4beamline was used to simulate this tune, including normalization to protons on target.
- Target model includes protons, π^+ , e^+ , gammas; all mimic distributions from protons on the target.
- These plots are for $1E10$ protons intersecting the MICE target.
- At Ckov1a:
 - 9 μ^+
 - 22 π^+
 - 252 protons (invisible)

Beam Layout

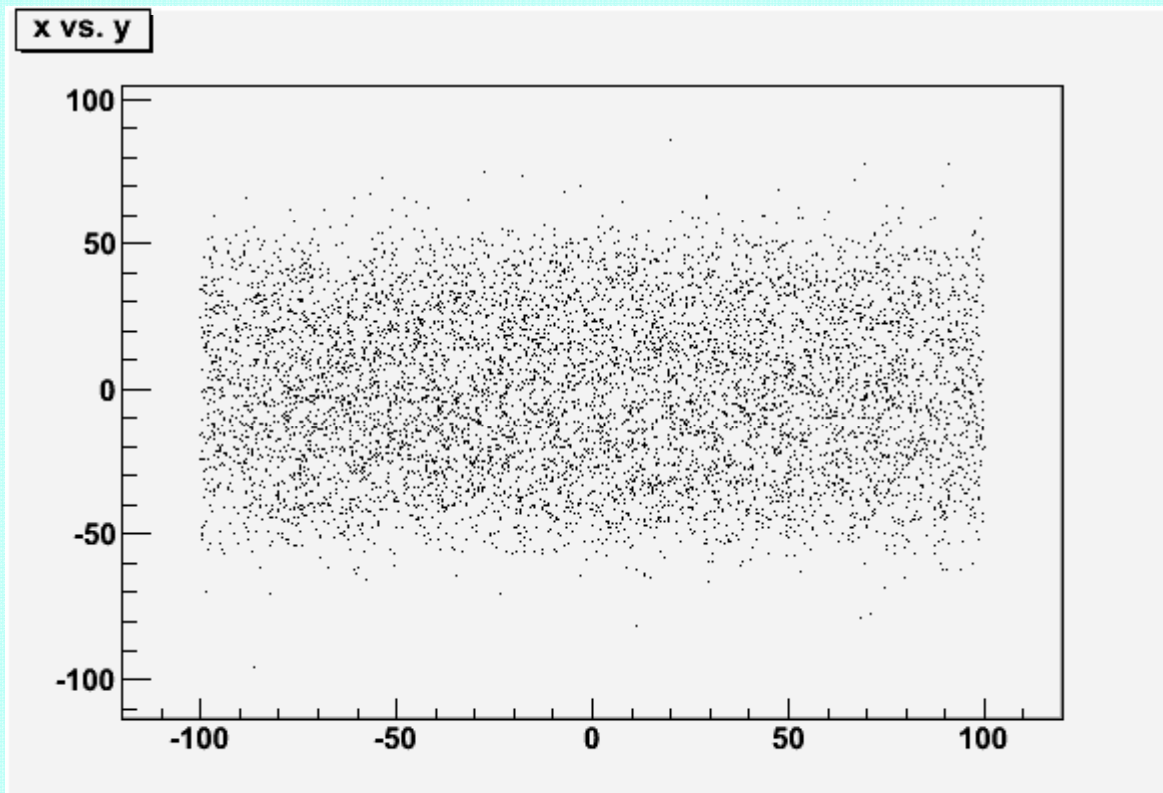


- B1, B2, Q1, Q2 are all powered
- Q3 and Q4-Q6 are present but off
- DecaySolenoid is present but off
- Only 2 monitors are physically available
- Note that TOF0 is omitted, Mon3 in its place

Beam Profile

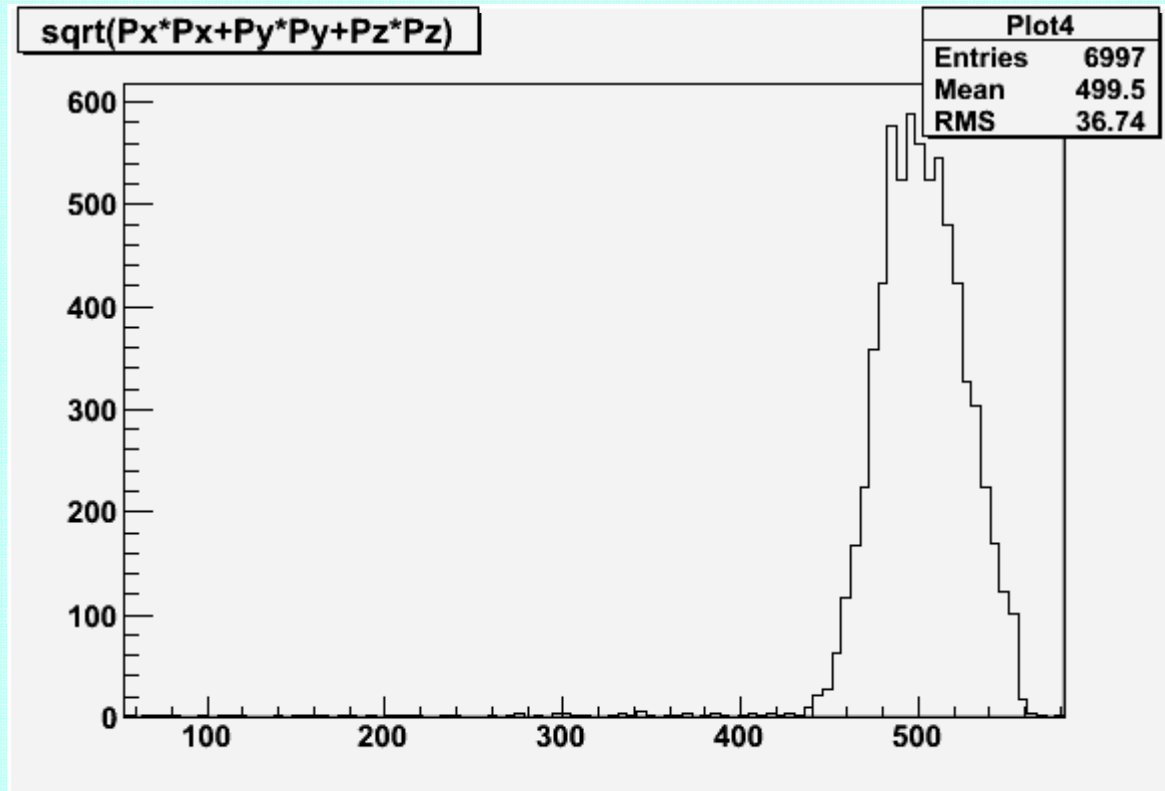


Mon1 X-Y



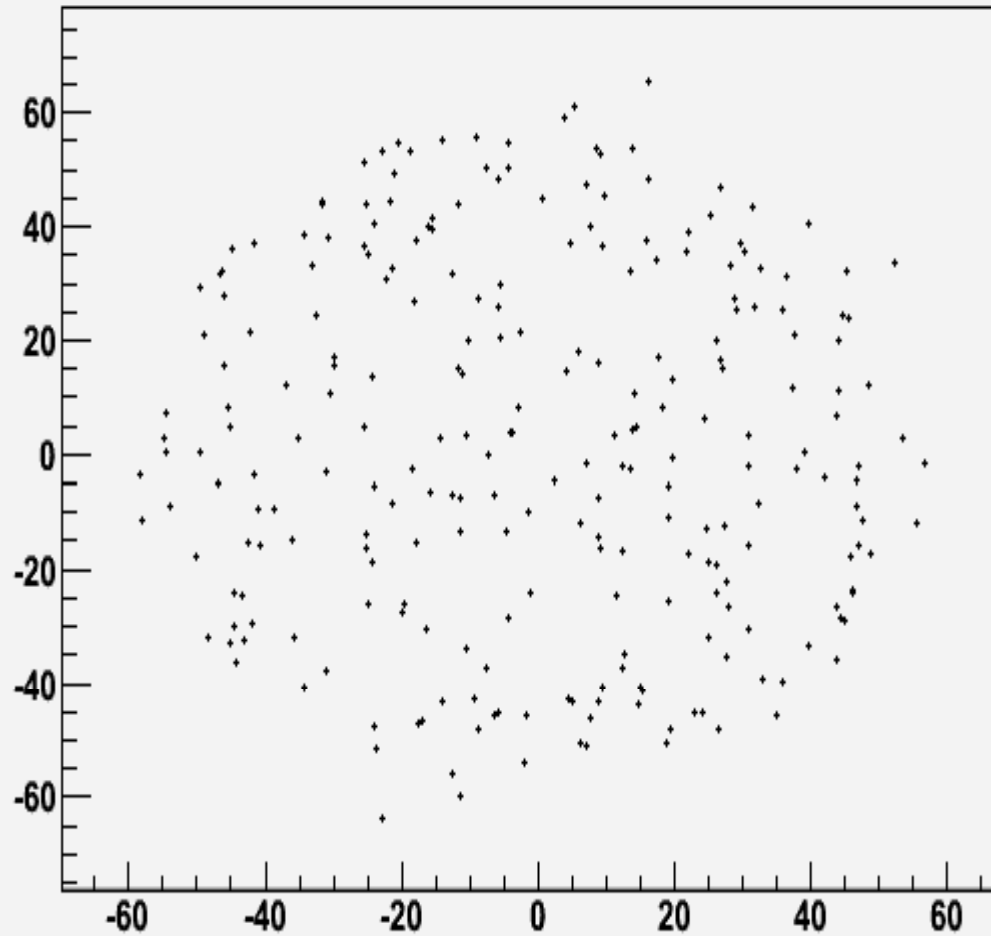
- Vertical half-aperture of B1 = 76.2
⇒ vertical focusing
- Horizontal half-width of Monitor = 100

Mon1 Ptot



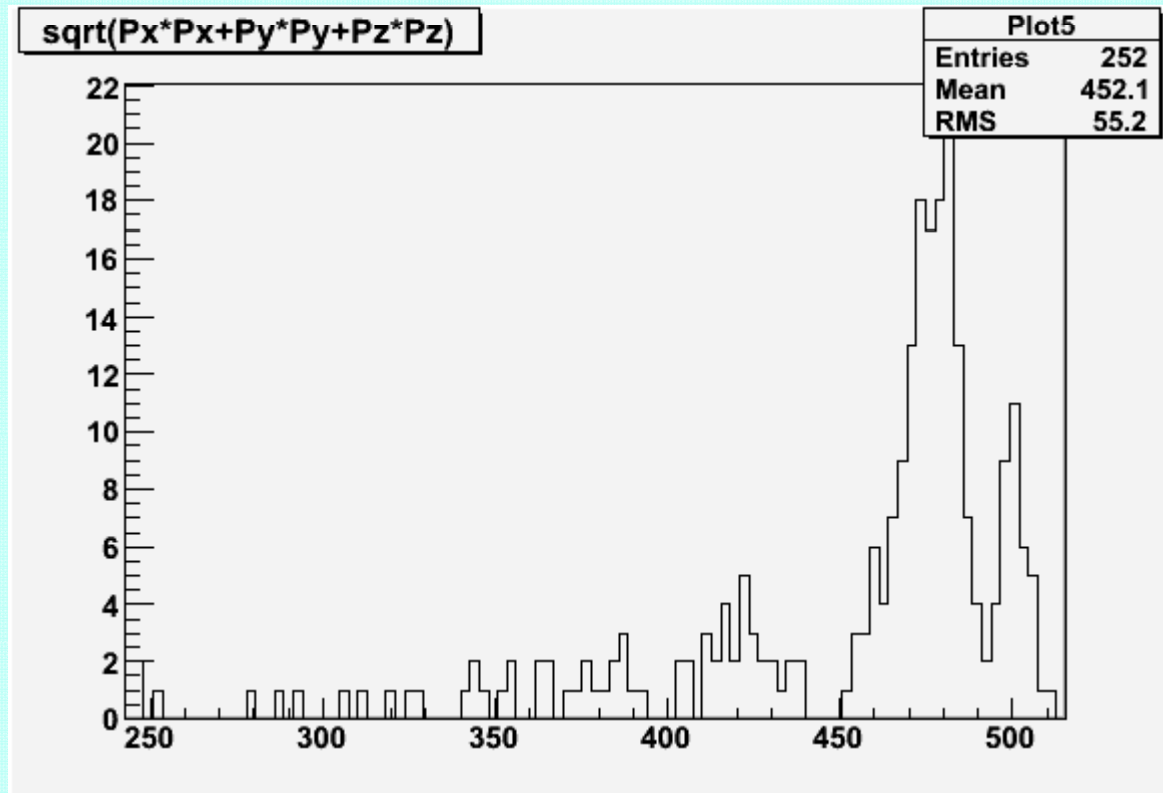
Mon2 X-Y

x vs. y

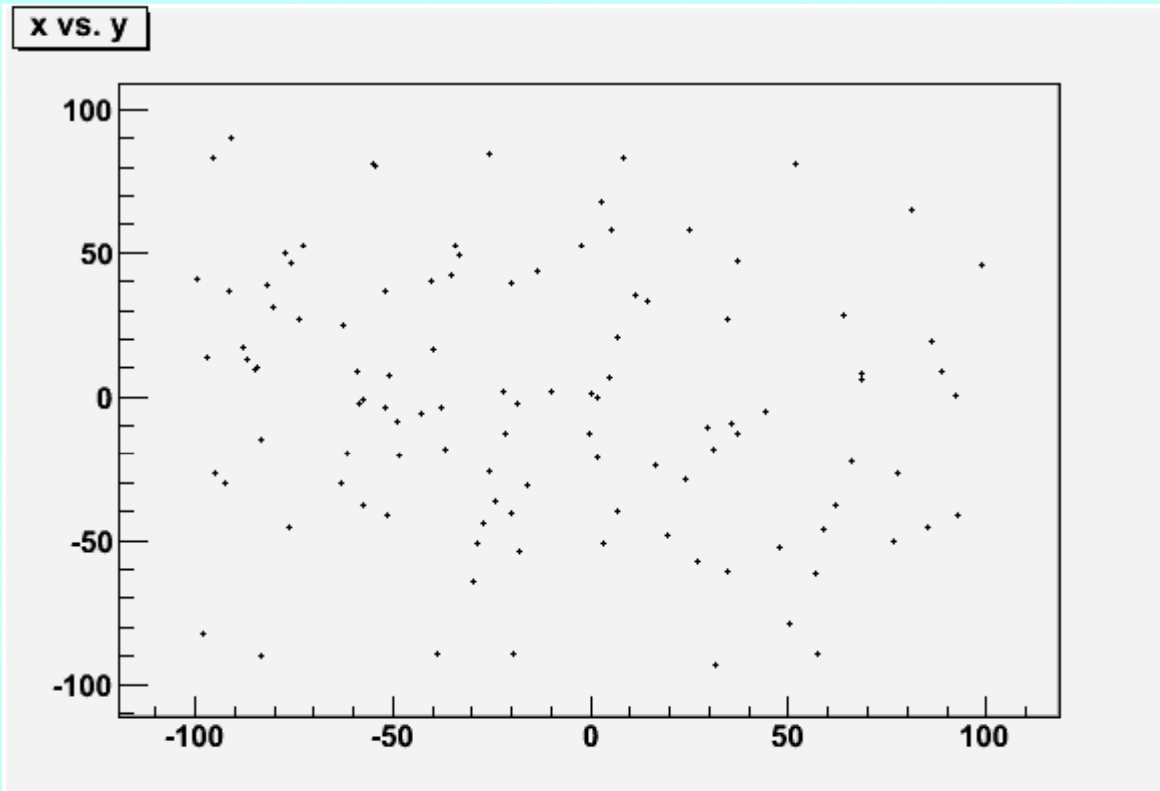


- Aperture of DecaySolenoid
 $r = 57.5$

Mon2 Ptot

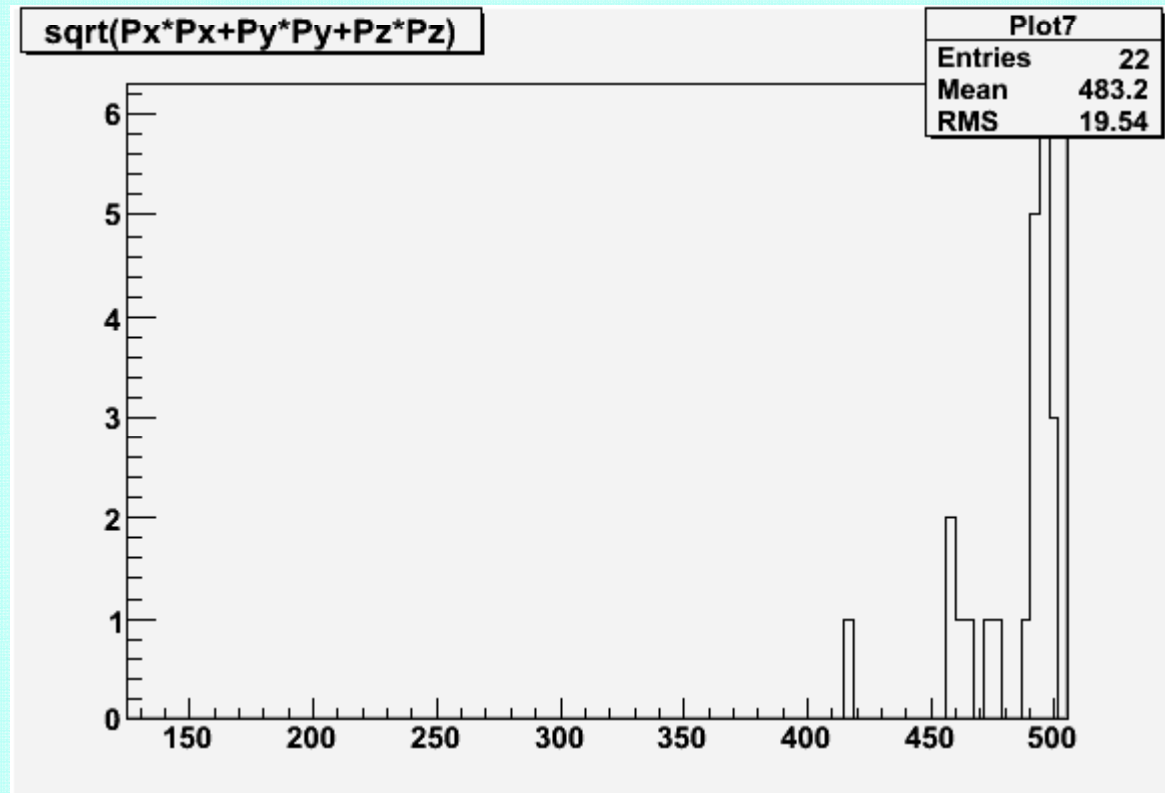


Mon3 X-Y



- Vertical half-width of monitor = 100
- Horizontal half-width of monitor = 100

Ckov1a pi+ Ptot



Ckov1a mu+ Ptot

