Sieve Slit and Collimator Update

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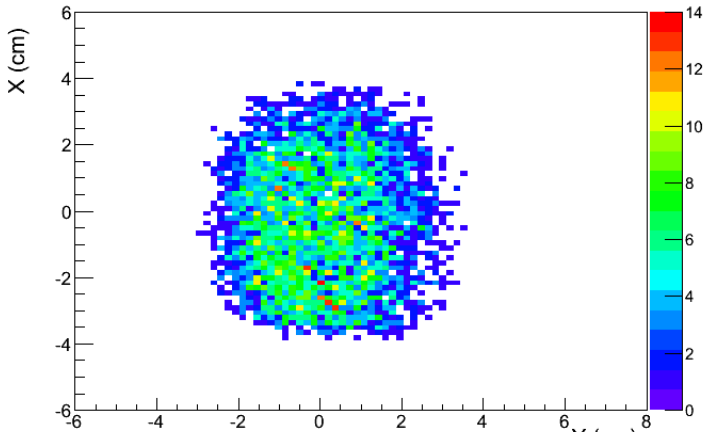
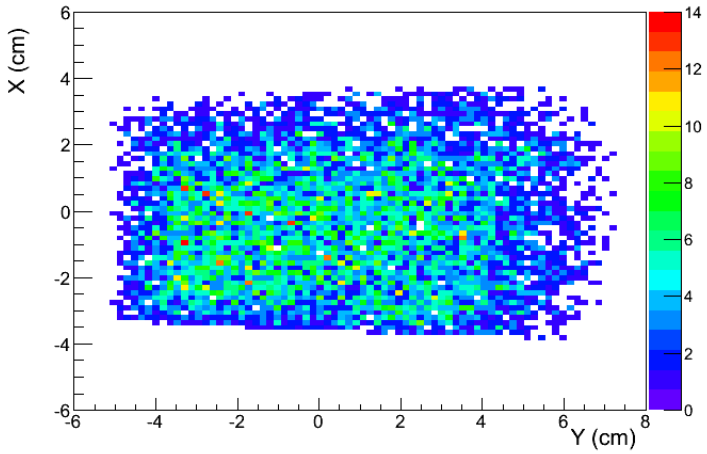
Particles which reach the focal SHMS focal plane at 80cm from target

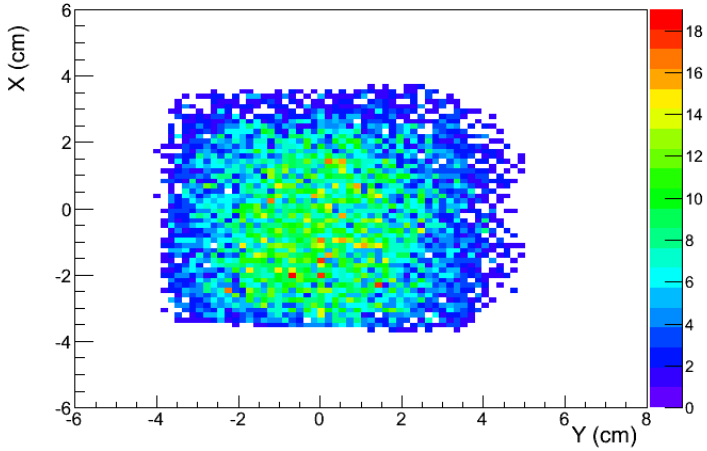
SHMS at 5.5 deg, 20cm target



SHMS at 40 deg, 20cm target



SHMS at 40 deg, 10cm target



- +Y points to larger angle
- +X points down
- Snout entrance could be 6.5cm radius offset by 1 cm
- Assumes the snout project at 1.5 degrees from HB
- Could shorten snout and the horizontal becomes smaller. 15cm of air is 0.04% rad lengths.

Target resolutions

2 GeV electrons, 0.1cm thick carbon target (0.5% rad len), 20mil Al (0.6% rad len)

Conditions	Xptar (mr)	Yptar (mr)	Delta (%)	Ytar (cm)
Fit	0.17	0.09	0.031	0.04
WC , no mscat	0.30	0.35	0.041	0.10
WC, vac exit, only target	0.64	0.71	0.076	0.21
WC, vac exit, target, 16mil Al scat win, 10 mil Al snout	0.88	0.92	0.076	0.22
WC, vac exit, target, 16mil Al scat win, 20 mil Al snout	0.93	0.98	0.076	0.22
WC, vac exit, target, 16mil Al scat win, 20 mil Al snout, GEM	1.13	1.18	0.077	0.22

Xptar (mr) = 0.26 Xfp (mm) – 1.38 Xpfp (mr)

Delta (%) = 0.06 Xfp (mm) – 0.0012 Xpfp (mr)

Ytar (mm) = -0.61 Yfp (mm) – 0.04 Ypfp (mr)

Yptar (mr) = 0.27 Yfp (mm) – 1.6 Ypfp (mr)

For 2 Gev electron through 0.6% radiator, the multiple scat angle is 0.43 mr