

Prex Meeting

# SAM Geometry Optimization

Cameron Clarke

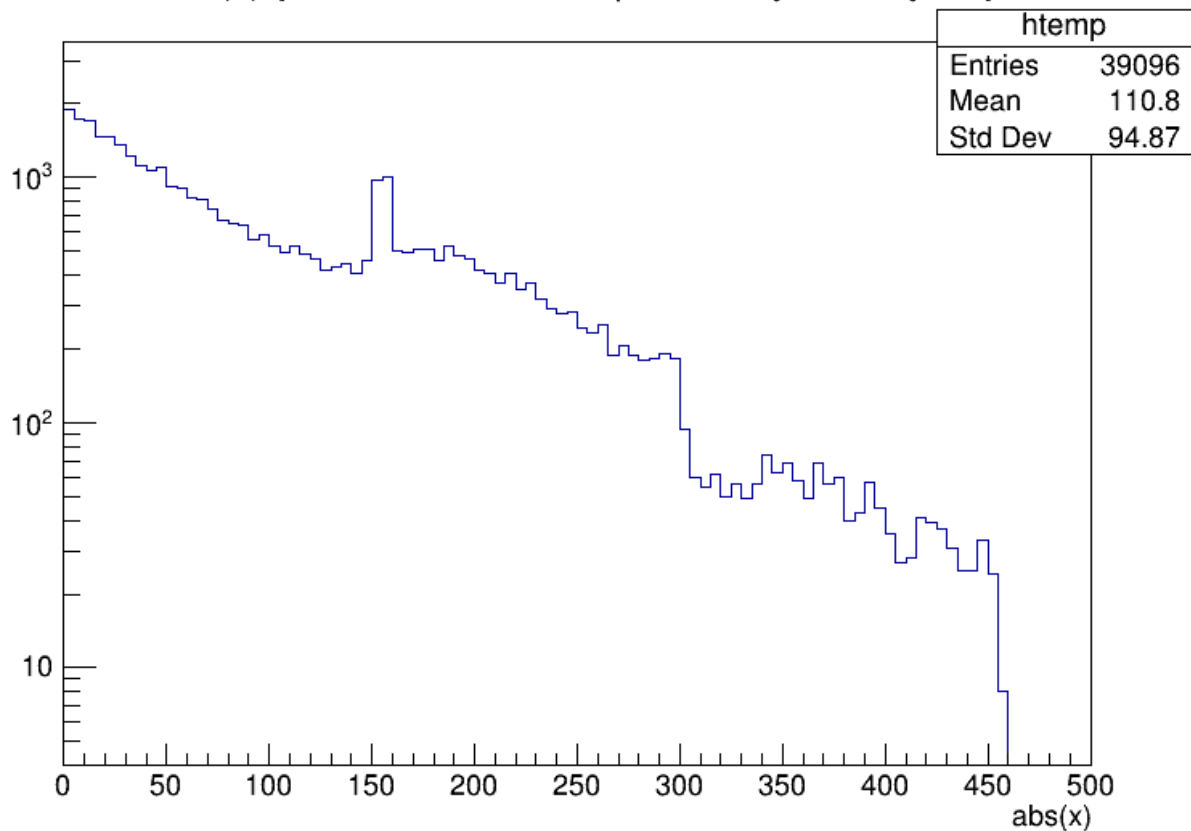
5-16-2018

# Scattered flux at det 2209 in front of SAMs (900k events)

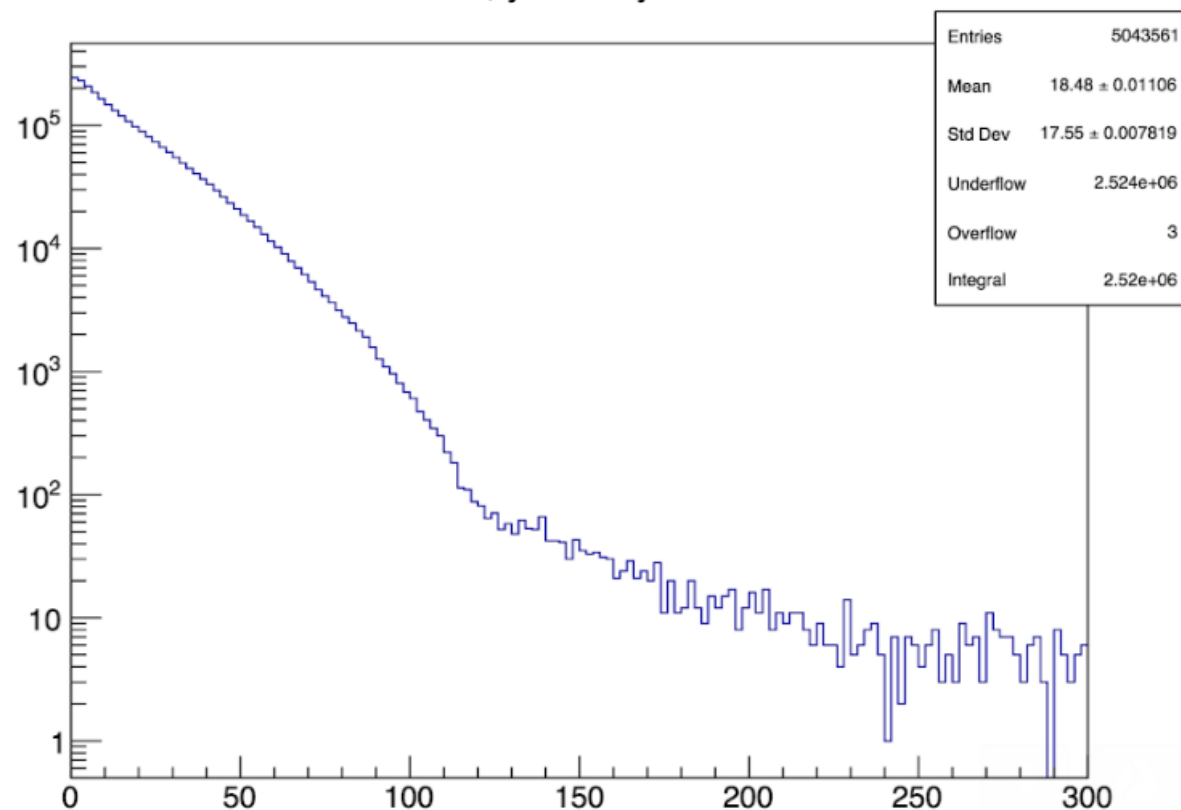
My results (gen 7, full prex geometry)

Adam's results

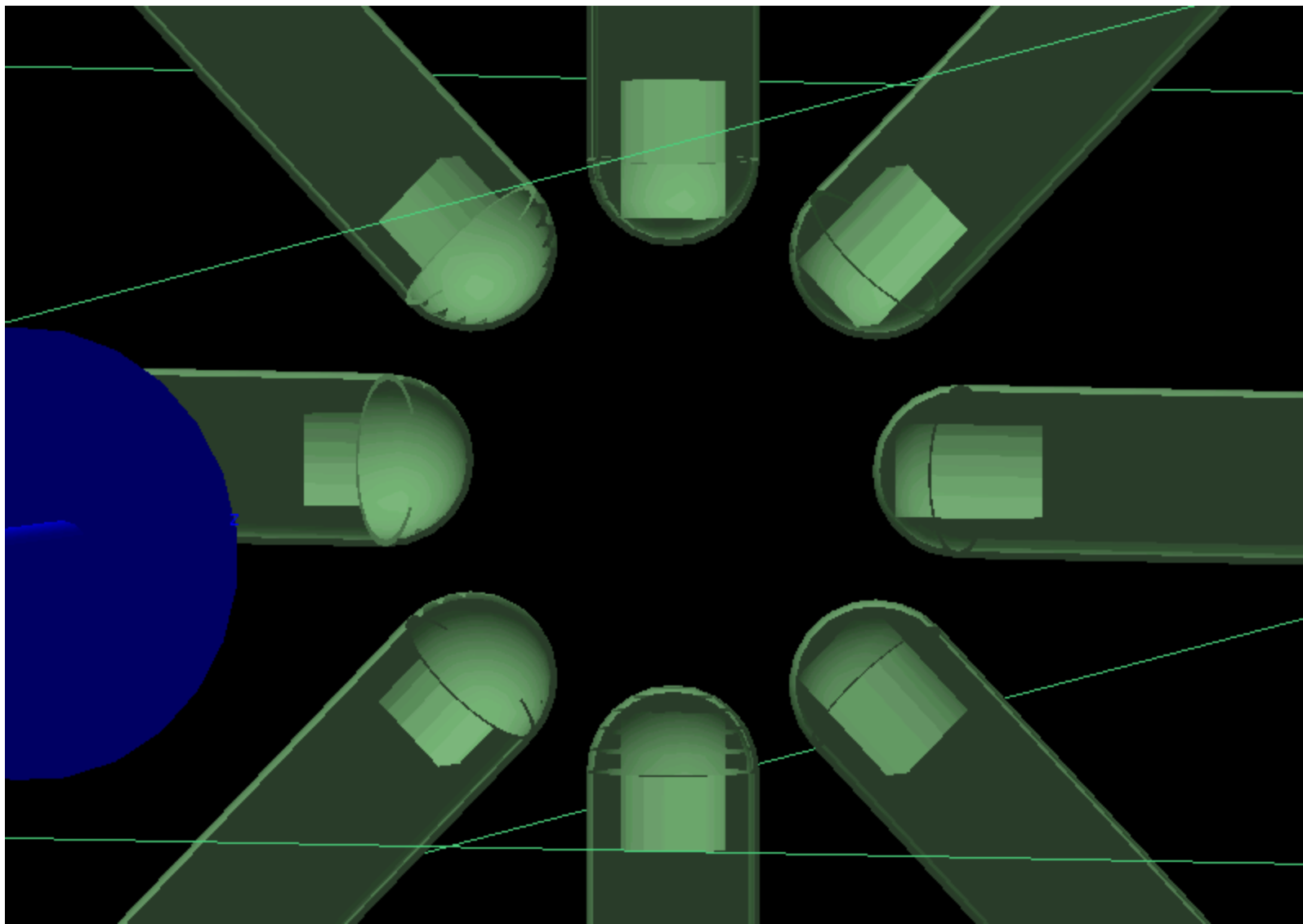
abs(x) {volume==2209 && pz>0 && y<2 && y>-2}



v2SamsAndDets: x, y<2 && y>-2 && volID==2209



# Spherical end cap

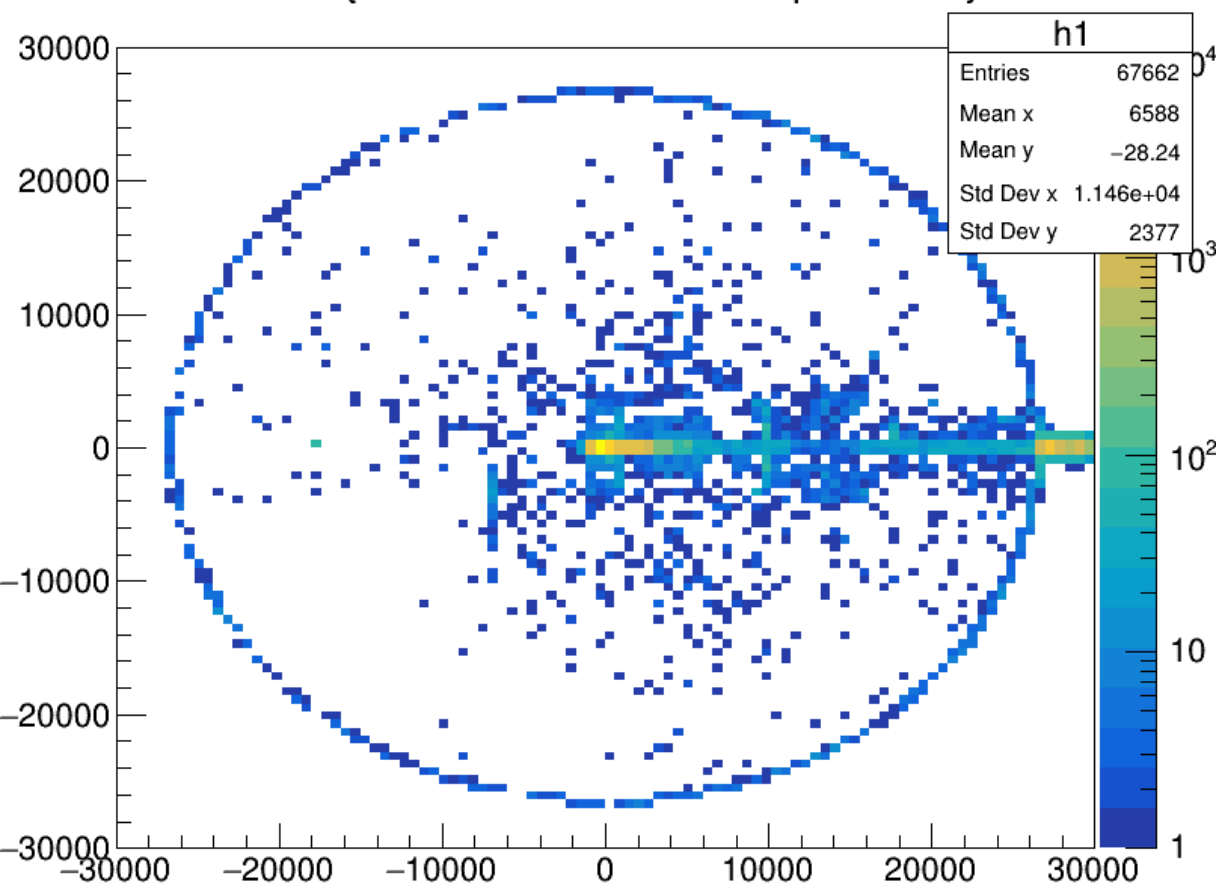


# Vertices hitting Roof

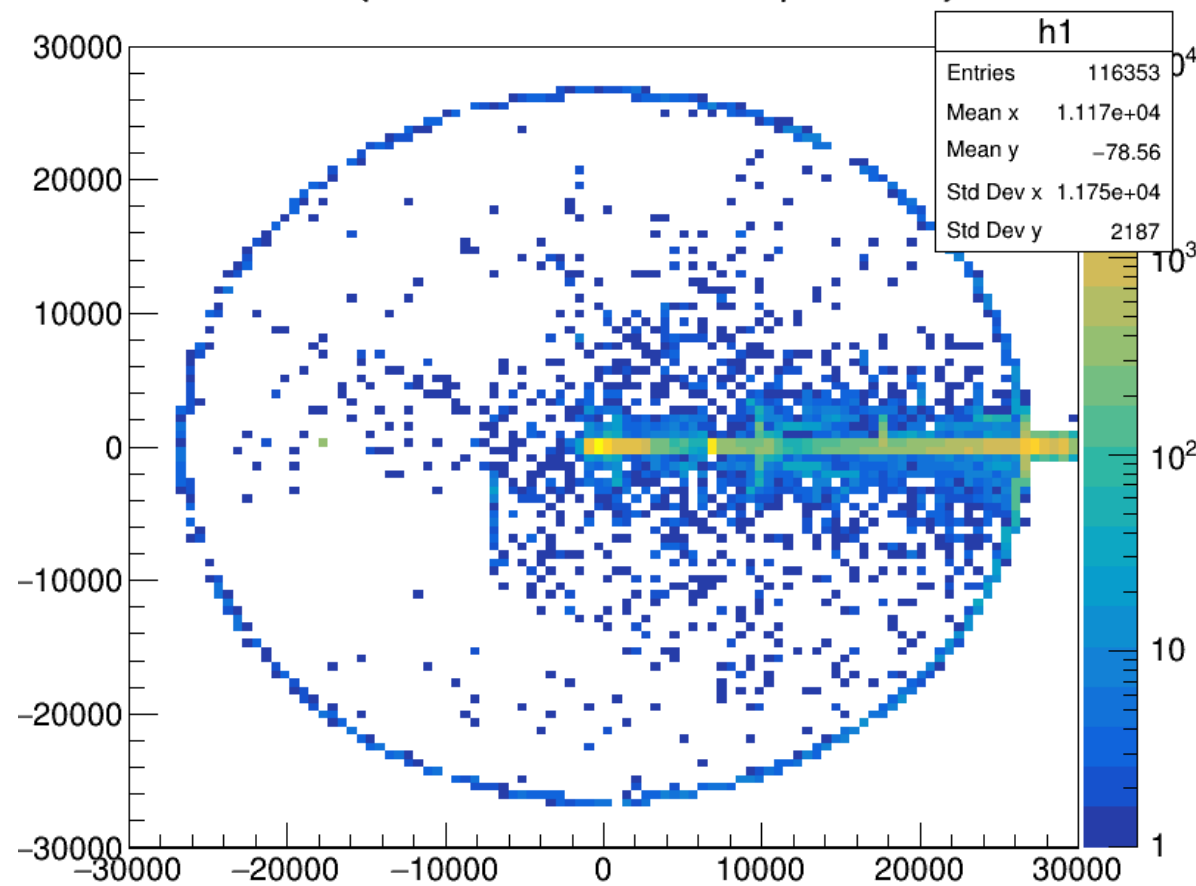
Baseline (no SAMs)

Cylindrical Endcap

x0:z0 {volume==1006 && Edeposit>0.1}



x0:z0 {volume==1006 && Edeposit>0.1}

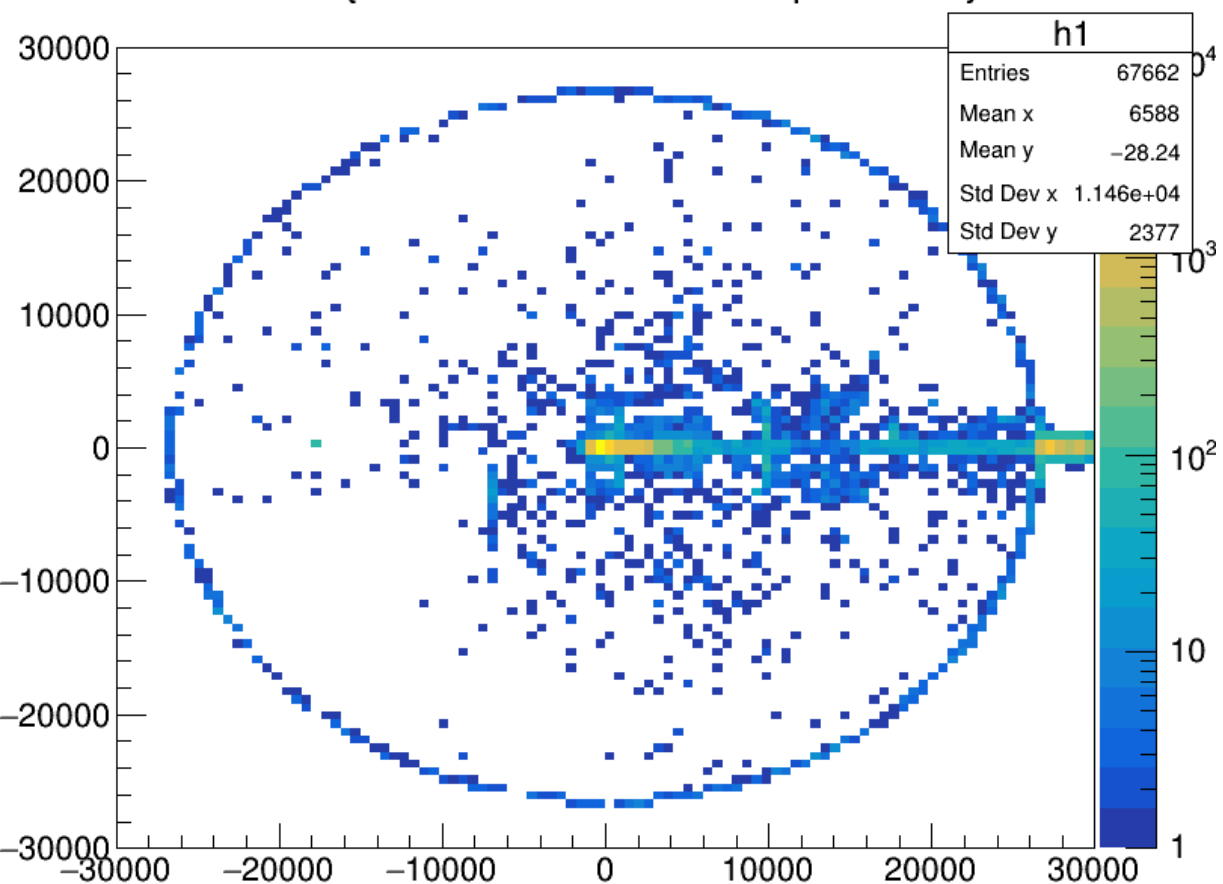


# Vertices hitting Roof

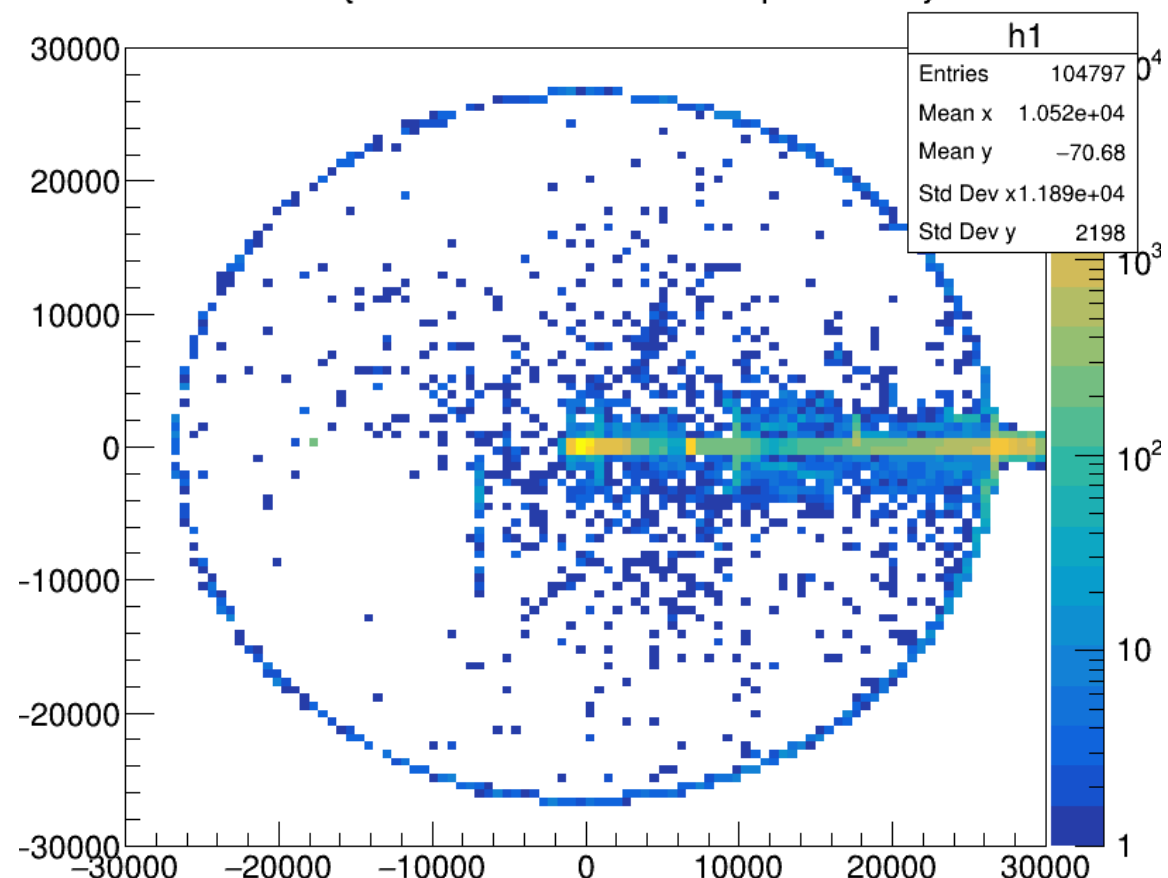
Baseline (no SAMs)

Spherical Endcap

x0:z0 {volume==1006 && Edeposit>0.1}



x0:z0 {volume==1006 && Edeposit>0.1}

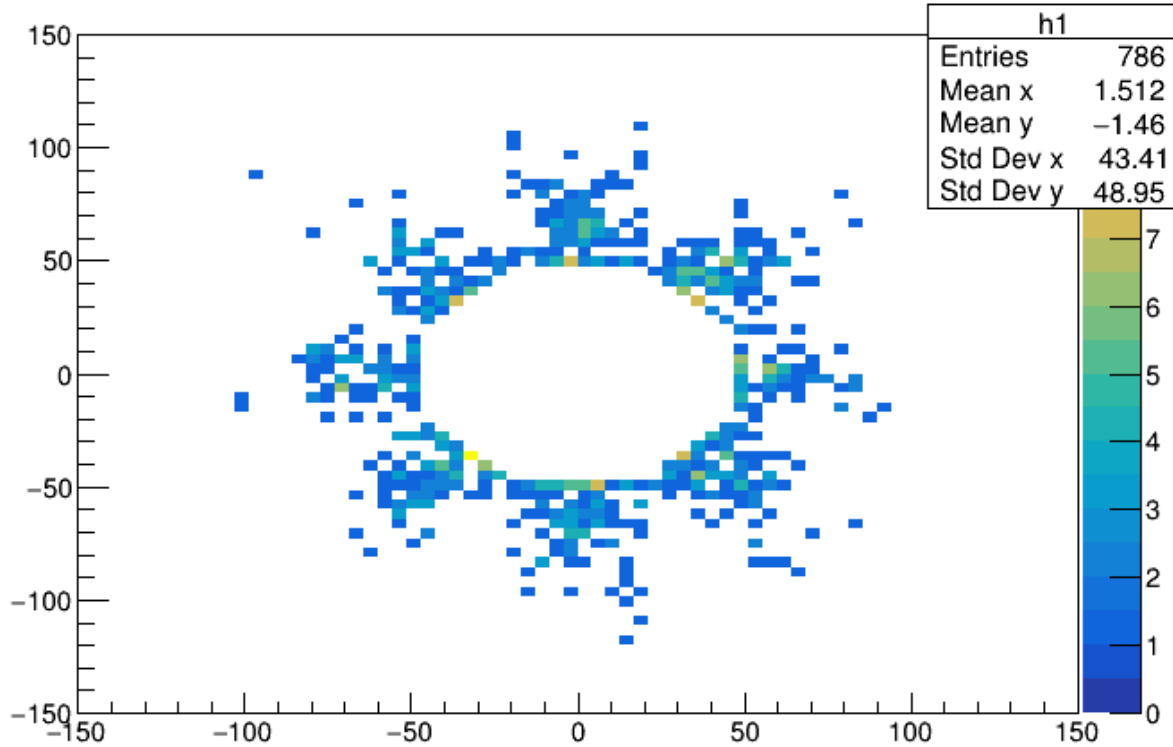


# Vertices from SAMs hitting HRS

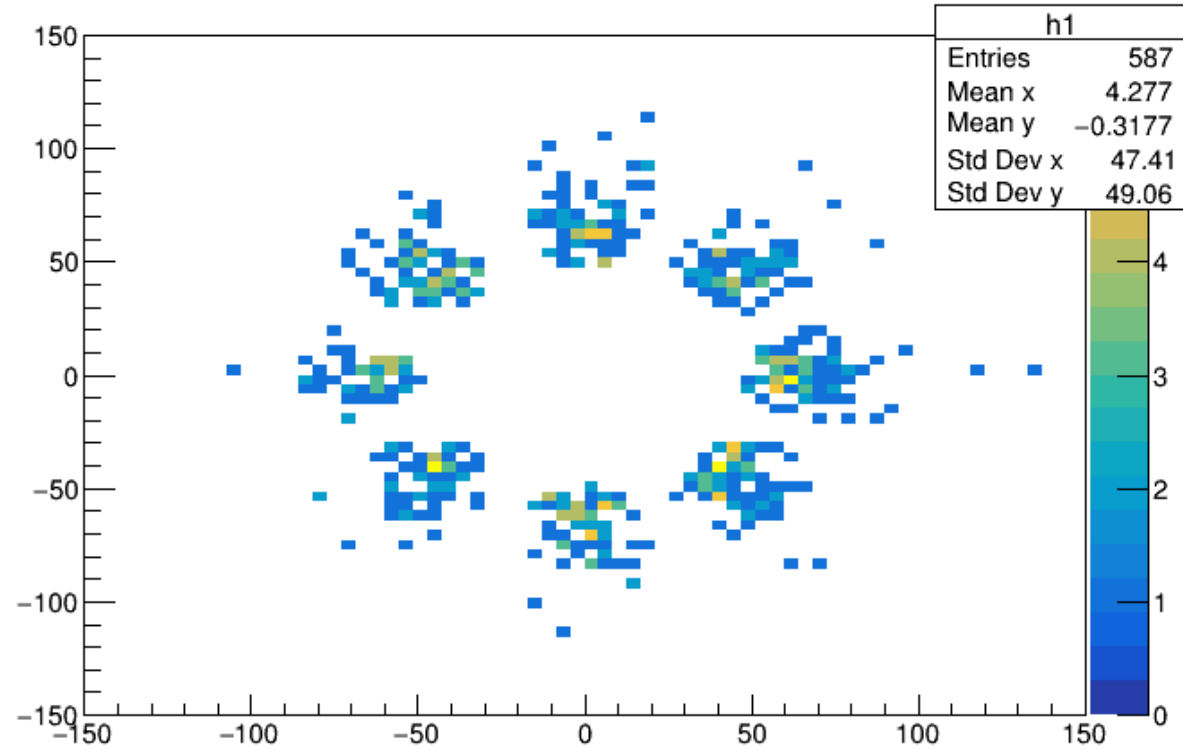
Cylindrical Endcap

Spherical Endcap

y0:x0 {z0>6950 && z0<7050 && volume==1001}



y0:x0 {z0>6950 && z0<7050 && volume==1001}



Note color scale is rescaled by factor of 2 from left to right

Counts of E>30MeV neutron hits on Roof, HRS, and O-ring coming from everywhere in the hall (54 Million Events)

(cylindrical is the current physical geometry)

	No SAMs	Cylindrical	Spherical	No Quartz	No Al Lightguide
• Roof:	32k	37k	36k	36k	34k
• HRS:	1.1k	2.0k	1.8k	1.6k	1.5k
• O-Ring:	3.3k	6.5k	5.8k	5.3k	4.3k

(low energy)