ACTS meeting

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Modify Resolution

❖ Introduction : resolution inside acts is not fully consistent with resolution in CDR

❖ CDR

#1   2.8um
#2   6um

	Layer Index	R (mm)	half z (mm)	sigma 1 (um)	sigma 2 (um)	volume_id	layer_id
					CEPC baseline Tracker		
				note: sigma 1 and sigma 2 are the local resolutions, x-y for silicon detector			
Beampipe		14.25	2470			2	
VTX Barrel	#1	16	62.5	3	3	25	2
	#2	18	62.5	4	4	25	2
	#3	37	125	4	4	25	4
	#4	39	125	4	4	25	4
	#5	58	125	4	4	25	6
	#6	60	125	4	4	25	6
SIT Barrel	#1	160	371.3	7	9999	28	2
	#2	310	665	7	9999	31	2
SET Barrel	#1	1831	2350	7	9999	36	2

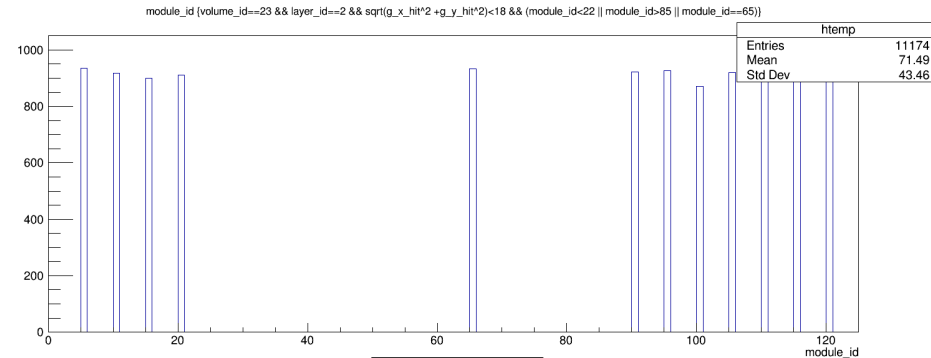|	Layer Index	Rmin (mm)	Rmax(mm)	Z (mm)	sigma 1 (um)	sigma 2 (um)	volume_id (posit	layer_id
FTD Endcap	#1	39	151.9	220	3	3	26;24	2
	#2	49.5	151.9	371	3	3		4
	#3	70.1	298.9	644.9	7	9999	29;19	2
	#4	79.1	309	846	7	9999	32;14	2
	#5	92.6	309	1057.5	7	9999		4
ETD	#1	419.2	1822.8	2420	7	9999	37;6	2
TPC	#1	400.1	1767.9	2340	r-phi (100um)	z (5000um)	34	1-222

❖ Previous ACTs

◇ VTX : 3um,4um,4um
◇ SIT & FTD(expect first 2 layers): x:5um;y:250um

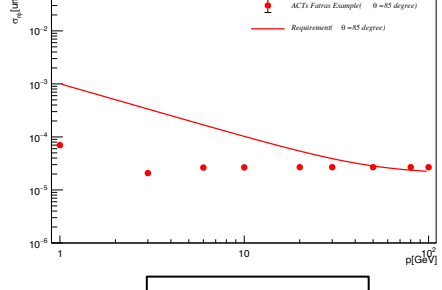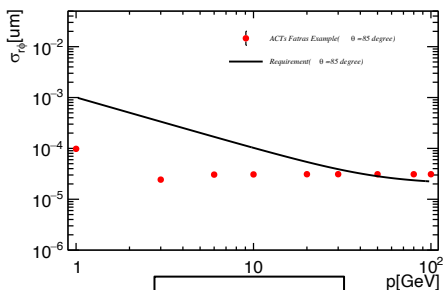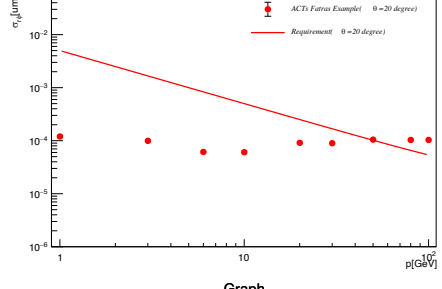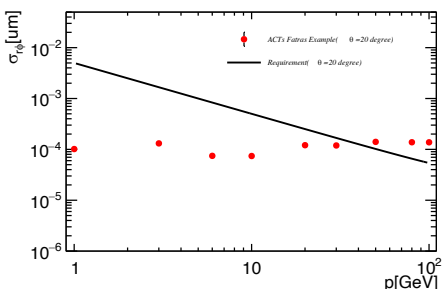# How it implemented

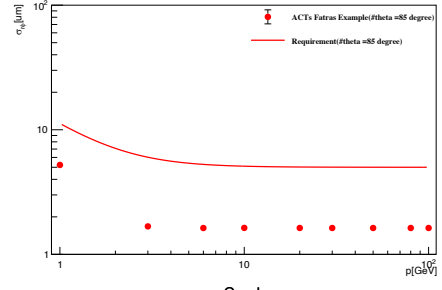❖recognize vtx layer1 and layer2 by Module ID
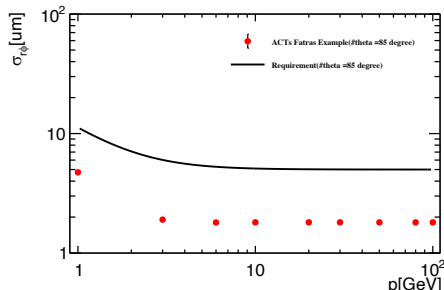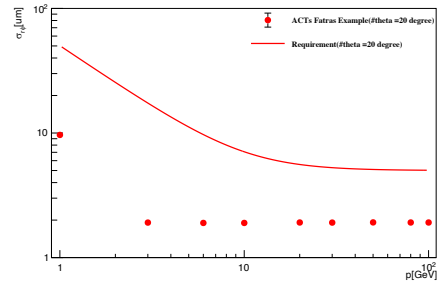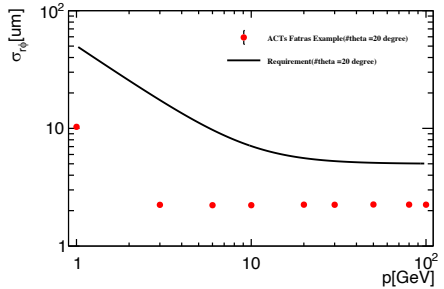

layer2

layer1

```
switch (hit.geometryId().volume()){
case 23:{
            if(hit.geometryId().layer() == 2) {
                        if(hit.geometryId().sensitive()>85 || hit.geometryId().sensitive()<22 || hit.geometryId().sensitive()==63 ||
            hit.geometryId().sensitive()==65){…}
            }
}
```
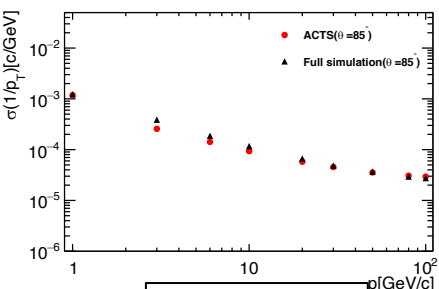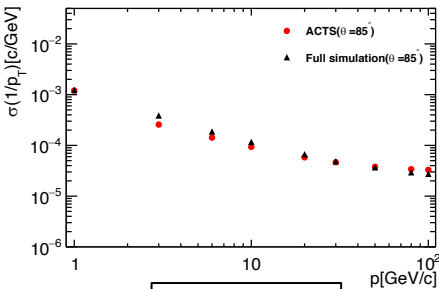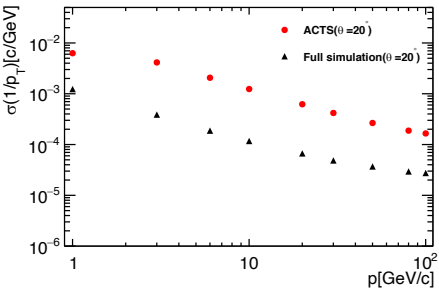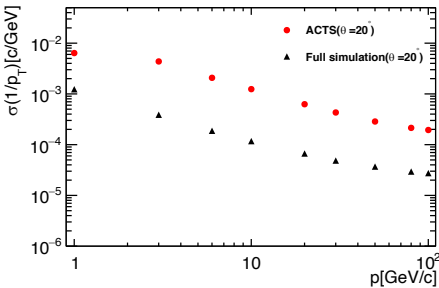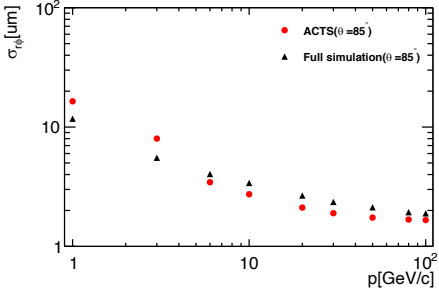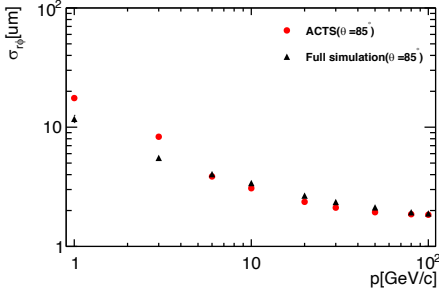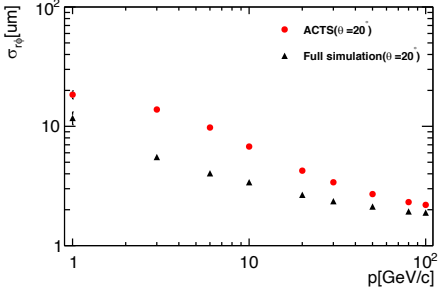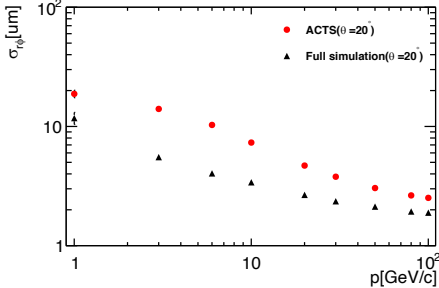
Without material：acts, requirement

current

previous

With material: acts, full simulation

current

previous