New Geometry Implementation

	Cathode	only honeycomb		
	material	thickness	fill factor	% of X0
faraday	copper	3	1	0.021
cage	kapton	50	1	0.0175
	epoxy	15	1	0.0044
	honeycomb	1800	1	0.0144
	epoxy	15	1	0.0044
cathode	kapton	50	1	0.0175
circuit	copper	3	1	0.021

GEM			
material	thickness	fill factor	% of X0
copper	5	0.77	0.02695
kapton	50	0.77	0.013475
copper	5	0.77	0.02695
		Tot GEM1	0.067375
		Tot 3 GEM	0.202125

	Anode			
	material	thickness	fill factor	% of X0
ground	kapton	50	1	0.0175
plane	copper	5	1	0.035
	epoxy	15	1	0.0044
	carbon fiber	70	1	0.024997
	epoxy	15	1	0.0044
	honeycomb	3800	1	0.0304
	epoxy	15	1	0.0044
	carbon fiber	70	1	0.024997
	epoxy	15	1	0.0044
anode	kapton	25	1	0.00875
circuit	epoxy	25	1	0.00733333
	copper	5	0.87	0.03045
	kapton	50	0.2	0.0035
	copper	5	0.2	0.007
			Tot Anode	0.20752733

TOT Layer 1	0.50985233

NEW L1

Figure 8 - Layer 1 stratigraphy.

Cathode			
material	thickness	fill factor	% of X0
kapton	12.5	1	0.004375
epoxy	15	1	0.0044
rohacel	1000	1	0.007
epoxy	15	1	0.0044
kapton	12.5	1	0.004375
epoxy	15	1	0.0044
rohacel	1000	1	0.007
epoxy	15	1	0.0044
kapton	50	1	0.0175
copper	5	1	0.035
		Tot Cathode	0.09285

GEM			
material	thickness	fill factor	% of X0
copper	5	0.77	0.02695
kapton	50	0.77	0.013475
copper	5	0.77	0.02695
		Tot GEM1	0.067375
		Tot 3 GEM	0.202125

Anode			
material	thickness	fill factor	% of X0
kapton	50	1	0.0175
copper	5	1	0.035
epoxy	15	1	0.0044
rohacel	2000	1	0.014
epoxy	15	1	0.0044
kapton	12.5	1	0.004375
epoxy	15	1	0.0044
rohacel	2000	1	0.014
epoxy	15	1	0.0044
kapton	25	1	0.00875
epoxy	25	1	0.00733333
copper	5	0.87	0.03045
kapton	50	0.2	0.0035
copper	5	0.2	0.007
		Tot Anode	0.15950833

Tot Layer 2	0.45448333

Figure 9 - Layer 2 stratigraphy.

Cathode	honeycomb + carbon		
material	thickness	fill factor	% of X0
carbon fiber	70	1	0.024997
epoxy	15	1	0.0044
honeycomb	1800	1	0.0144
epoxy	15	1	0.0044
kapton	50	1	0.0175
copper	3	1	0.021
		Tot. cathode	0.086697

GEM			
material	thickness	fill factor	% of X0
copper	5	0.77	0.02695
kapton	50	0.77	0.013475
copper	5	0.77	0.02695
		Tot GEM1	0.067375
		Tot 3 GEM	0.202125

Anode			
material	thickness	fill factor	% of X0
copper	3	1	0.021
kapton	50	1	0.0175
copper	5	1	0.035
epoxy	15	1	0.0044
carbon fiber	70	1	0.024997
epoxy	15	1	0.0044
honeycomb	3800	1	0.0304
epoxy	15	1	0.0044
carbon fiber	70	1	0.024997
epoxy	15	1	0.0044
kapton	25	1	0.00875
epoxy	25	1	0.00733333
copper	5	0.87	0.03045
kapton	50	0.2	0.0035
copper	5	0.2	0.007
		Tot Anode	0.22852733

TOT Layer 3	0.51734933

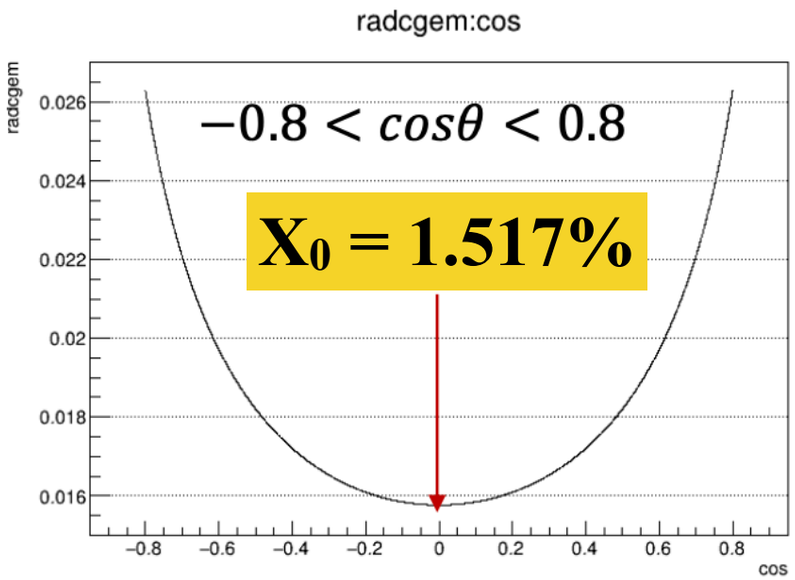
NEW L3

Figure 10 - Layer 3 stratigraphy.

New Geometry Implementation: radiation length

Update results of X [effdesity]

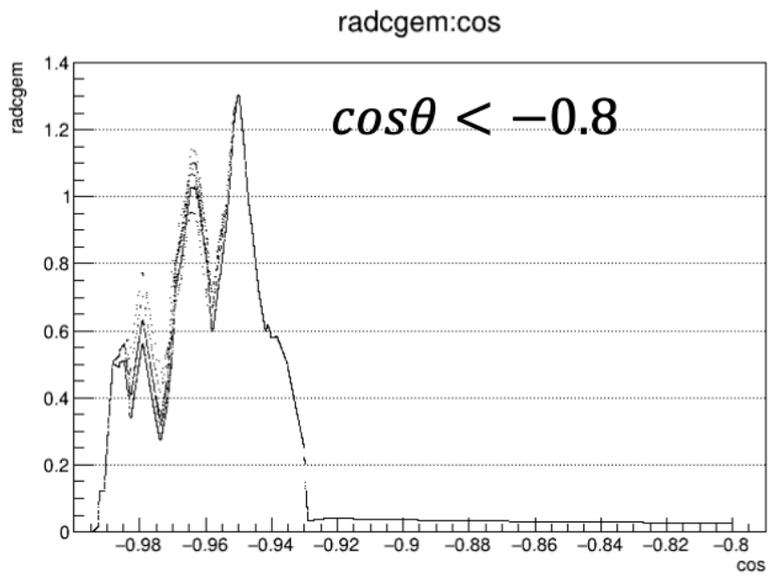
Barrel

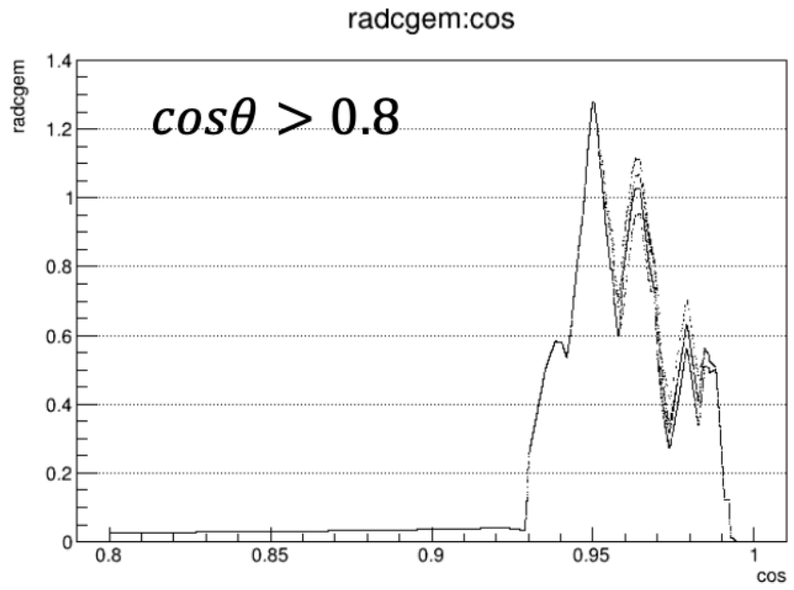


- ✓ CGEMBOSS 6.6.5.f
- ✓ BesSim-00-04-16
- ✓ [update Stepping, Event, Run]

CGEM

Endcap





(Contribution from separator is already subtracted)

New Geometry Implementation: radiation length

	X_0 (%)	
tot X_0 (CGEM+shield)	1.824	
CGEM only	1.517	
Air	0.0245	(CGEM-Air) = 1.49%
ArIso	0.0265	(CGEM-Air-gas) = 1.47%

X_0 calculation = 1.48%

Summary and conclusion

- Geometry updated successfully (available on CVS)
  - CgemGeomSvc-00-00-32
  - CgemSim-01-00-33
  - CgemGeomSvc.UseEffectiveDensity = false; (default)
- Radiation length studies completed