CGEM-IT geometry
Final stratification and radiation length studies

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Layer 1 right stratification

	LAYER 1	material	thickness	fill factor	rad length			
	cathode	copper	3	1	0,0002089	0,0011326	x1	0,00113255
		kapton	50	1	0,0001750			
		epoxy	15	1	0,0000442			
fixed		honeycomb	1900	1	0,0001448			
		epoxy	15	1	0,0000442			
*New**		kapton	25	1	0,0000875			
		epoxy	15	1	0,0000442			
		kapton	50	1	0,0001750			
		copper	3	1	0,0002089			
	gem	copper	5	0,66	0,0002298	0,0006396	x3	0,00191893
		kapton	50	0,81	0,0001417			
		copper	5	0,77	0,0002681			
	anode	copper	5	0,88	0,0003064	0,0019977	x1	0,00199773
		kapton	50	0,2	0,0000350			
		copper	5	0,2	0,0000696			
		epoxy	25	1	0,0000736			
		kapton	25	1	0,0000875			
		epoxy	15	1	0,0000442			
fixed		carbonfiber	60	1	0,0002143			
		epoxy	15	1	0,0000442			
fixed		honeycomb	3900	1	0,0002972			
		epoxy	15	1	0,0000442			
fixed		carbonfiber	60	1	0,0002143			
		epoxy	15	1	0,0000442			
		copper	5	1	0,0003482			
		kapton	50	1	0,0001750			
								0,00504921

Layer 2 stratification

no changes

LAYER 2	material	thickness	fill factor	rad length			
cathode	kapton	12,5	1	0,0000437	0,0009324	x1	0,00093239
	epoxy	15	1	0,0000442			
	rohacel	1000	1	0,0000725			
	epoxy	15	1	0,0000442			
	kapton	12,5	1	0,0000437			
	epoxy	15	1	0,0000442			
	rohacel	1000	1	0,0000725			
	epoxy	15	1	0,0000442			
	kapton	50	1	0,0001750			
	copper	5	1	0,0003482			
gem	copper	5	0,66	0,0002298	0,0006396	x3	0,00191893
	kapton	50	0,81	0,0001417			
	copper	5	0,77	0,0002681			
anode	copper	5	0,88	0,0003064	0,0016058	x1	0,00160584
	kapton	50	0,2	0,0000350			
	copper	5	0,2	0,0000696			
	epoxy	25	1	0,0000736			
	kapton	25	1	0,0000875			
	epoxy	15	1	0,0000442			
	rohacel	2000	1	0,0001451			
	epoxy	15	1	0,0000442			
	kapton	12,5	1	0,0000437			
	epoxy	15	1	0,0000442			
	rohacel	2000	1	0,0001451			
	epoxy	15	1	0,0000442			
	copper	5	1	0,0003482			
	kapton	50	1	0,0001750			
							0,00445716

NEW L3 stratification

fixed

*New**

fixed

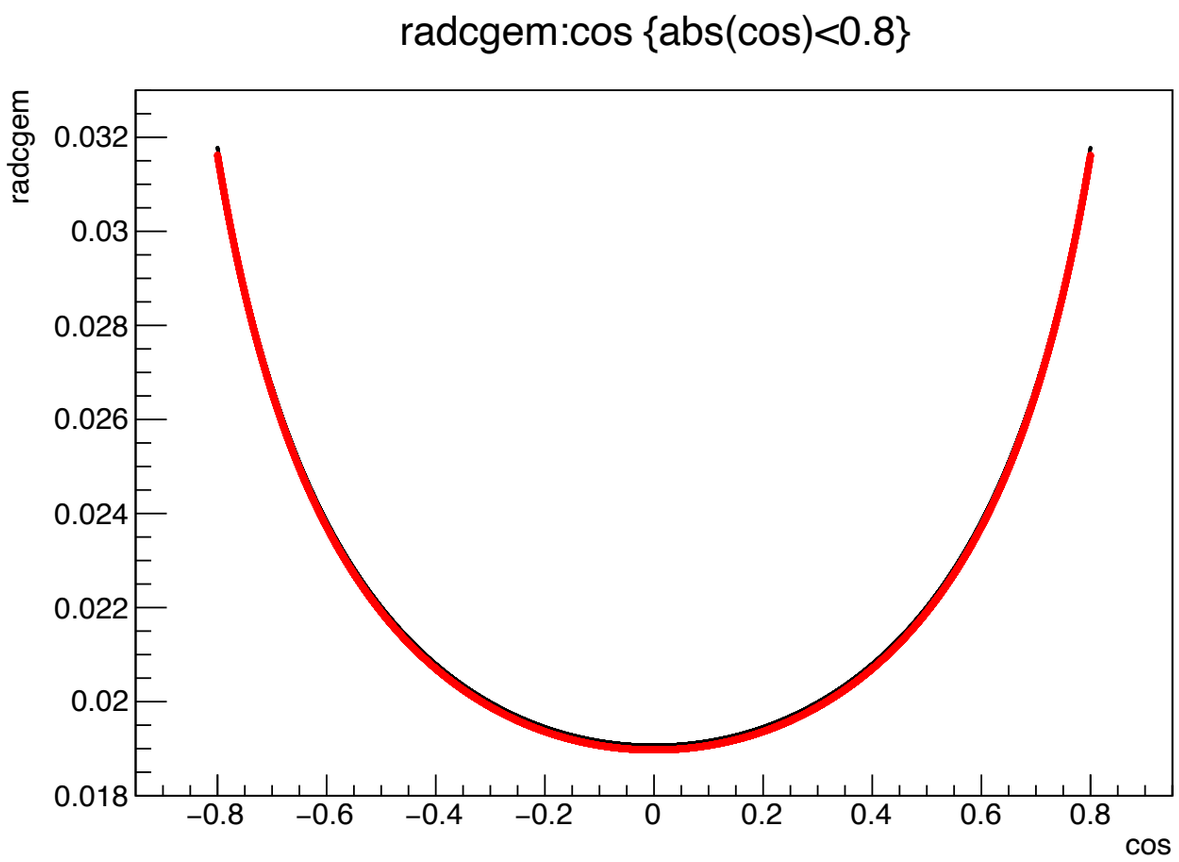
LAYER 3	material	thickness	fill factor	rad length			tot
cathode	kapton	25	1	0,000087489	1,18E-03	1	1,18E-03
	epoxy	15	1	0,000044170			
	carbonfiber	60	1	0,000214286			
	epoxy	15	1	0,000044170			
	honeycomb	1900	1	0,000144773			
	epoxy	15	1	0,000044170			
	kapton	50	1	0,000174978			
	epoxy	15	1	0,000044170			
	kapton	50	1	0,000174978			
	copper	3	1	0,000208914			
gem	copper	5	0,66	0,000229805	0,000639643	3	0,00191893
	kapton	50	0,81	0,000141732			
	copper	5	0,77	0,000268106			
anode	copper	5	0,88	0,000306407	5,72E-04	1	0,002744
	kapton	50	0,2	0,000034996			
	copper	5	0,2	0,000069638			
	epoxy	25	1	0,000073616			
	kapton	25	1	0,000087489			
	epoxy	15	1	0,000044170	0,001125575	1	
	kapton	125	1	0,000437445			
	epoxy	15	1	0,000044170			
	honeycomb	3900	1	0,000297165			
	epoxy	15	1	0,000044170			
	carbonfiber	60	1	0,000214286			
	epoxy	15	1	0,000044170			
	copper	5	1	0,000348189	0,000523168	1	
	kapton	50	1	0,000174978			
	kapton	50	1	0,000174978	0,000523168	1	
	copper	5	1	0,000348189			
							TOT
							0,00584508

From calculation: X0 = 1.535%

From simulation (geantino simulation): 1.9%
(effective density flag ON)

- **0.02418% AIR contribution**
- **0.02681% CgemGas**
- **0.31% shield**

1.539%



Comparison between last meeting results and FINAL configuration

NEW L3 implementation: conclusion

- Check overlaps done
- Study of the new radiation length: done
- BhaBha simulation: done