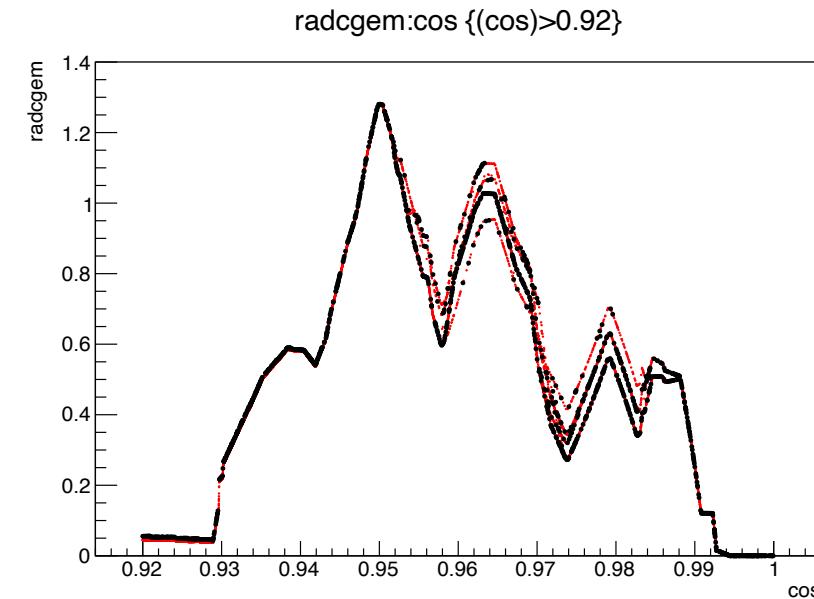
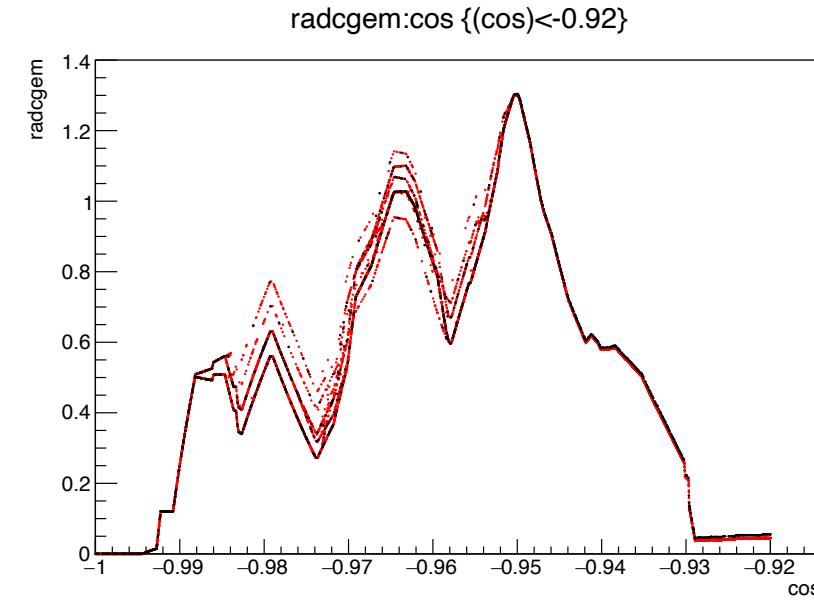
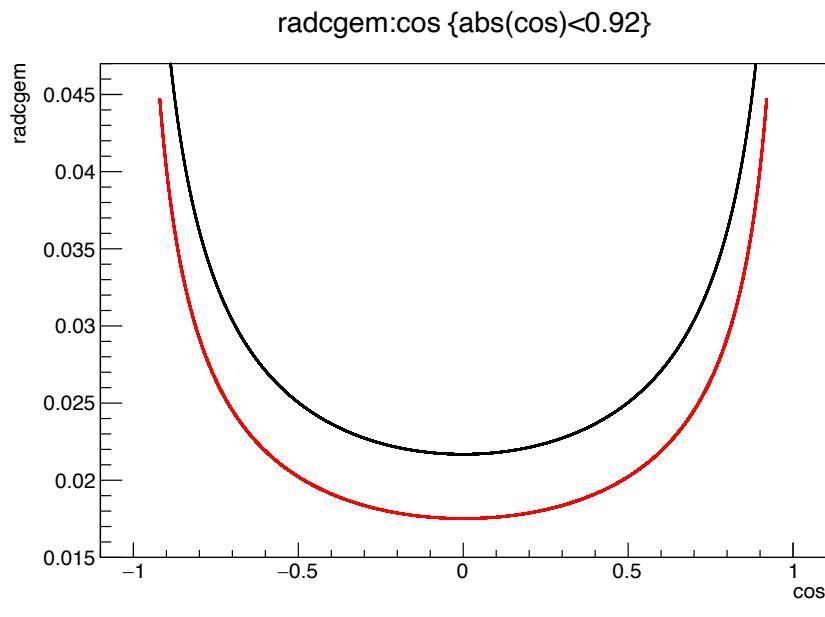


CGEM Geometry versions

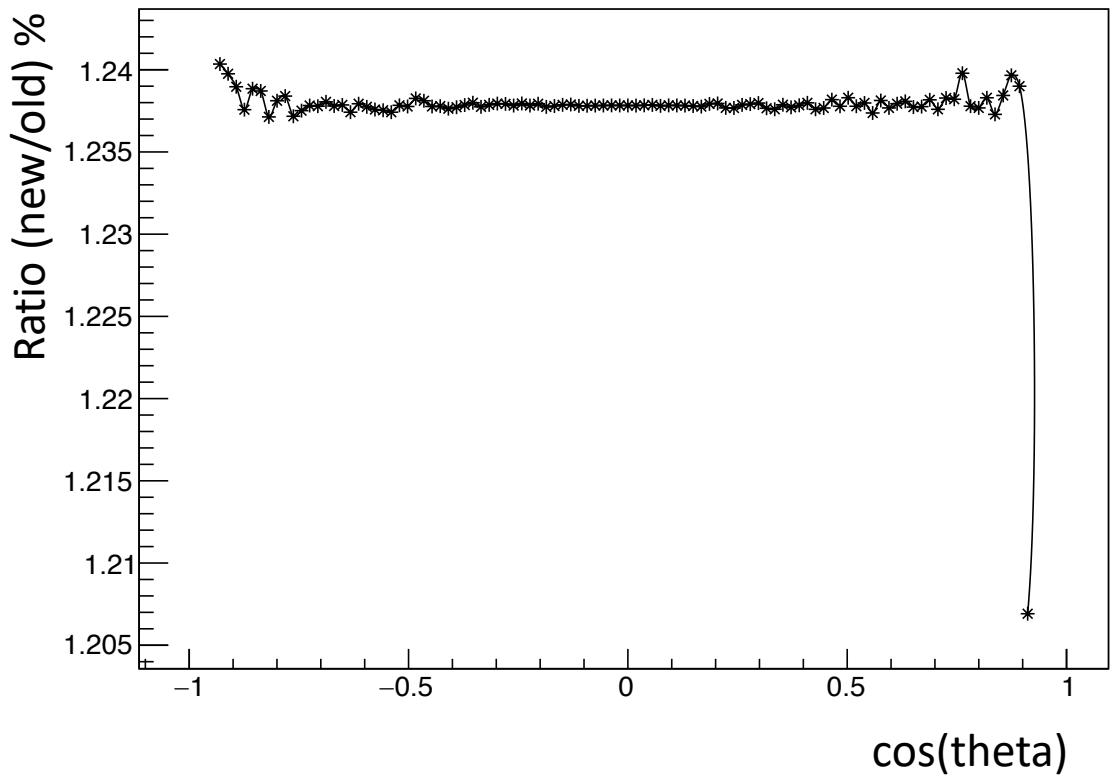
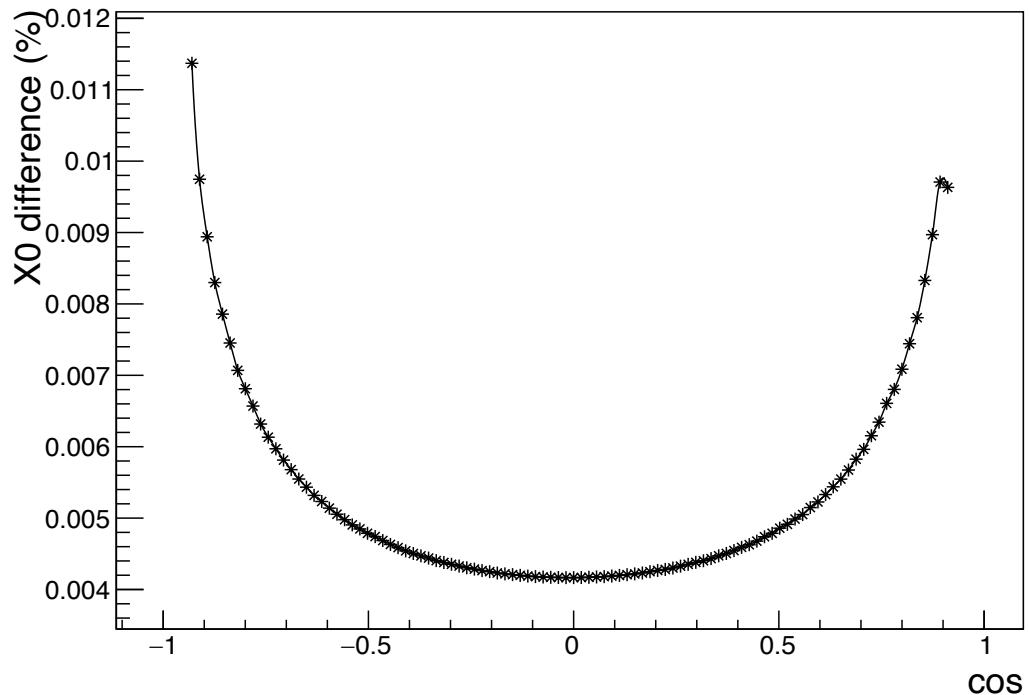
- **CgemBoss665f (default) (red points):** CgemGeomSvc-00-00-31-p01, CgemSim-01-00-32
“old geometry, passive elements fixed, effective density off by default”
- CgemBoss665f, CgemGeomSvc-00-00-35, CgemSim-01-00-34 (black points)
“new geometry, passive elements fixed”

	Create holes	Effective Density for Holes	Effective Density for Strips	CGEM X0 @ cosθ=0 (w/o separator)
CgemBoss665f (default)	false	false	false	1.44%
CgemBoss665f, CgemGeomSvc-00-00-35, CgemSim-01-00-34	false	false	false	1.8%

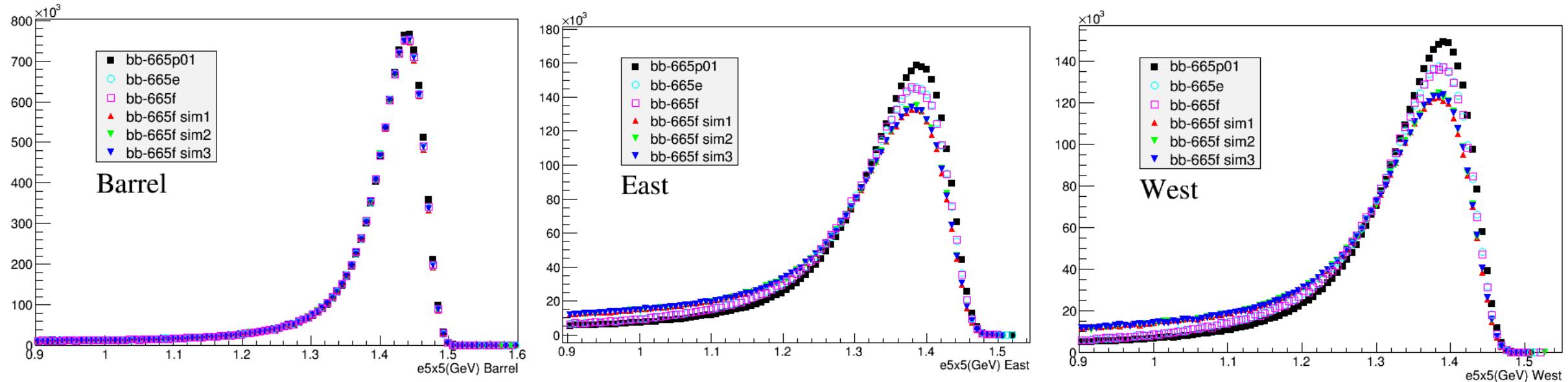
- Separator contribution included in both versions (0.31%)
- the passive elements are the same in both simulation → passive elements are fixed in cgemboss665f version



Difference in the barrel region



Test different CGEM versions by Bhabha MC



From Chunxiu

CGEM Geometry versions

- **CgemBoss665e**
“old geometry, passive elements aluminum”
- **CgemBoss665f** (default): CgemGeomSvc-00-00-31-p01, CgemSim-01-00-32
“old geometry, passive elements aluminum+permglas, effective density off by default”
- New versions and configurations:
CgemBoss665f, CgemGeomSvc-00-00-35, CgemSim-01-00-34
“new geometry, passive elements fixed”

	Create holes	Effective Density for Holes	Effective Density for Strips	CGEM X0 @ cosθ=0 (w/o separator)
Sim 1	false	false	false	1.8%
Sim 2	false	true	true	1.5%
Sim 3	true	false	true	

- EMC barrel: $|\cos\theta| < 0.83$
- EMC endcaps: $0.85 < |\cos\theta| < 0.93$
- CGEM sensitive part: $|\cos\theta| < 0.93$
- CGEM insensitive part (passive elements): $0.93 < |\cos\theta|$
- Please compare X_0 vs $\cos\theta$ (-0.93~0.93) between old and new CGEM geometry?