

Inner tracker endcap: design considerations

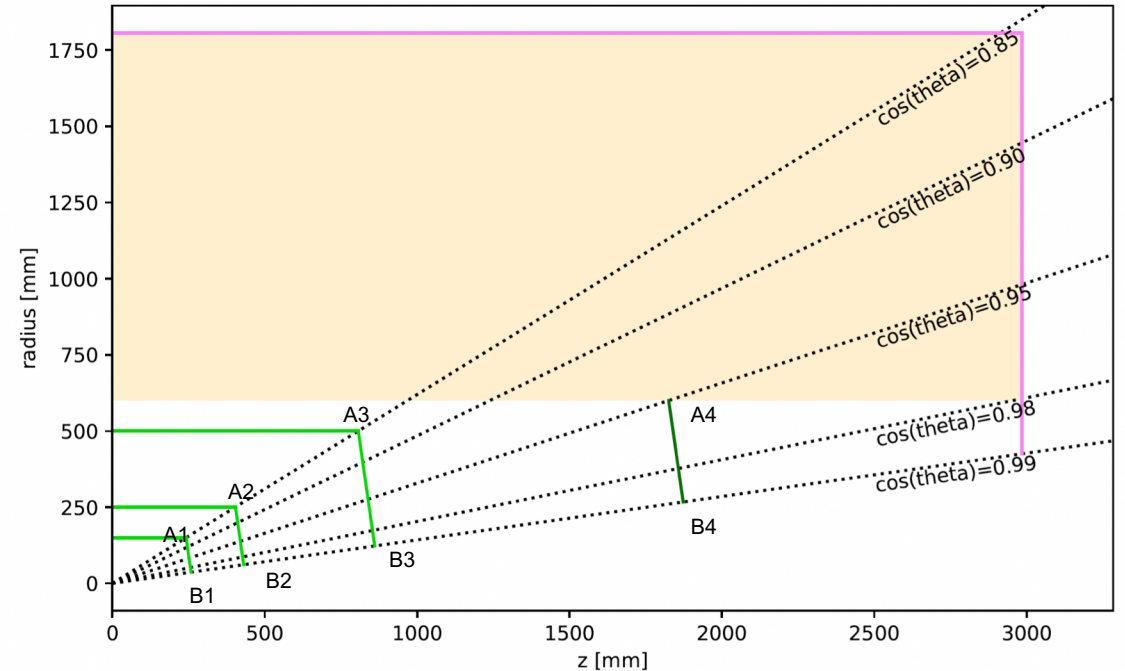
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CEPC rTDR tracker meeting

31 May 2024

Tracker layout

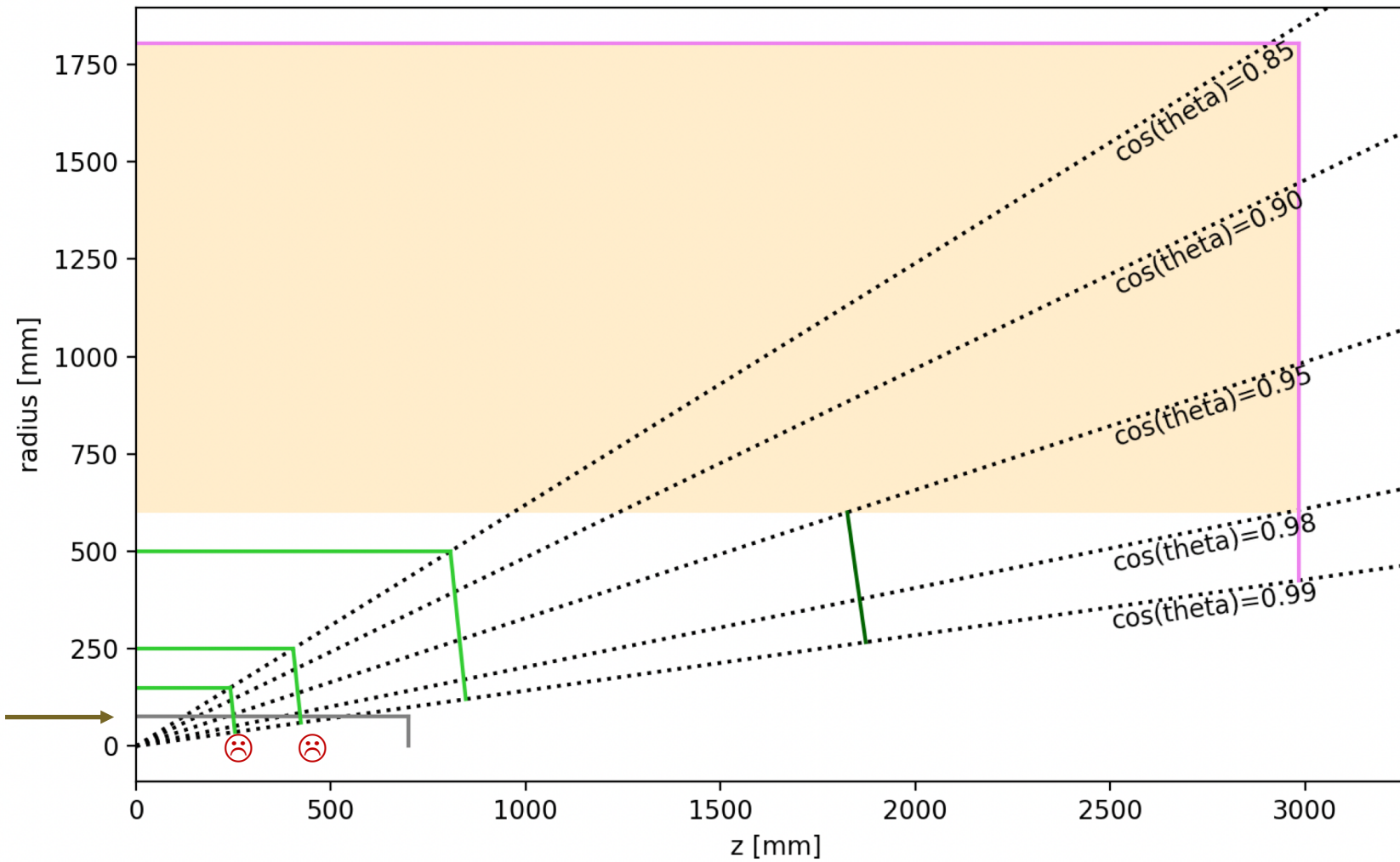
- Three barrel radii fixed to **[150, 250, 500]mm** for a starting point
 - According to Qinglin' s previous study
 - Subject to change – the innermost layer may move inward if VTX adopts long-barrel option
- **Barrel length now ending at $\cos(\theta) = 0.85$ line**
 - Three endcap starting from end of barrel
- Endcap innermost radii at $\cos(\theta) = 0.99$
 - Endcap disk perpendicular to $\cos(\theta) = 0.99$
- Add an additional disk
 - Starting from $\cos(\theta) = 0.95$ (random choice)



	R(A)	Half Z(A)	AB	# modules*
1	150	242	114	3
2	250	404	191	5
3	500	807	381	10
4	600	1825	337	9

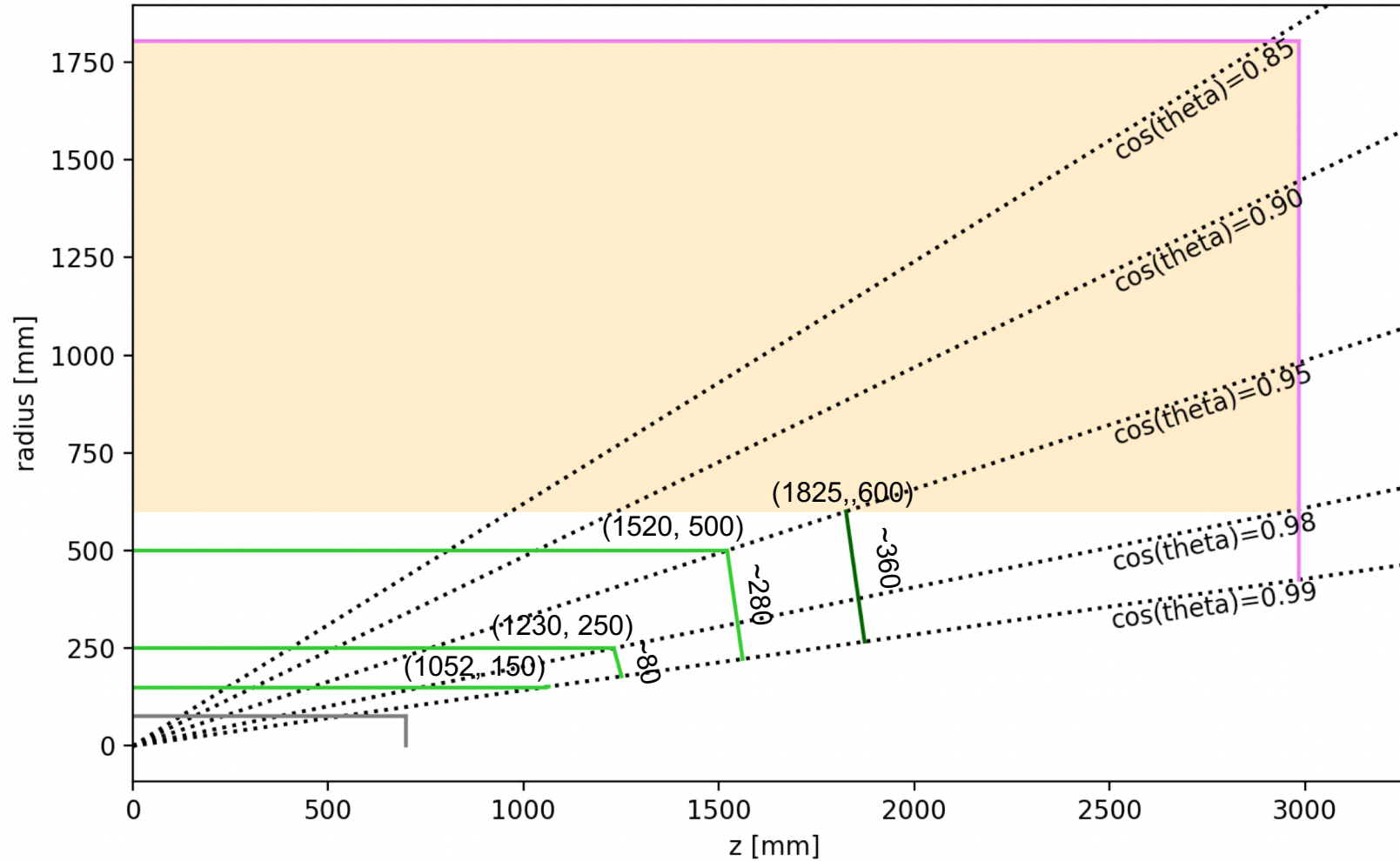
*assuming 40mm × 40mm quad-module

More boundary condition from VTX installation

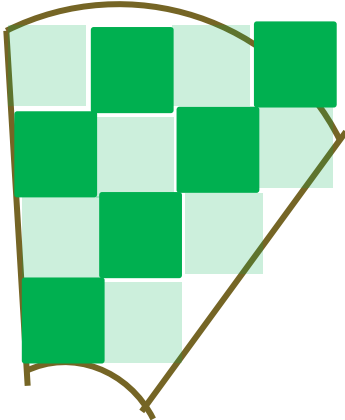
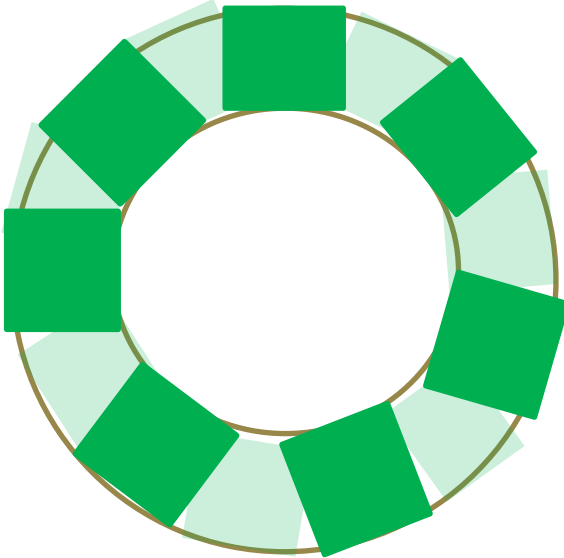


Clearance for vtx installation within the radius

A possible layout for ease of installation



Basic mechanical unit: Ring vs. petal?



front



back