CEPC Silicon Strip Outer Tracker

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On behalf of the SDD Tracker Team

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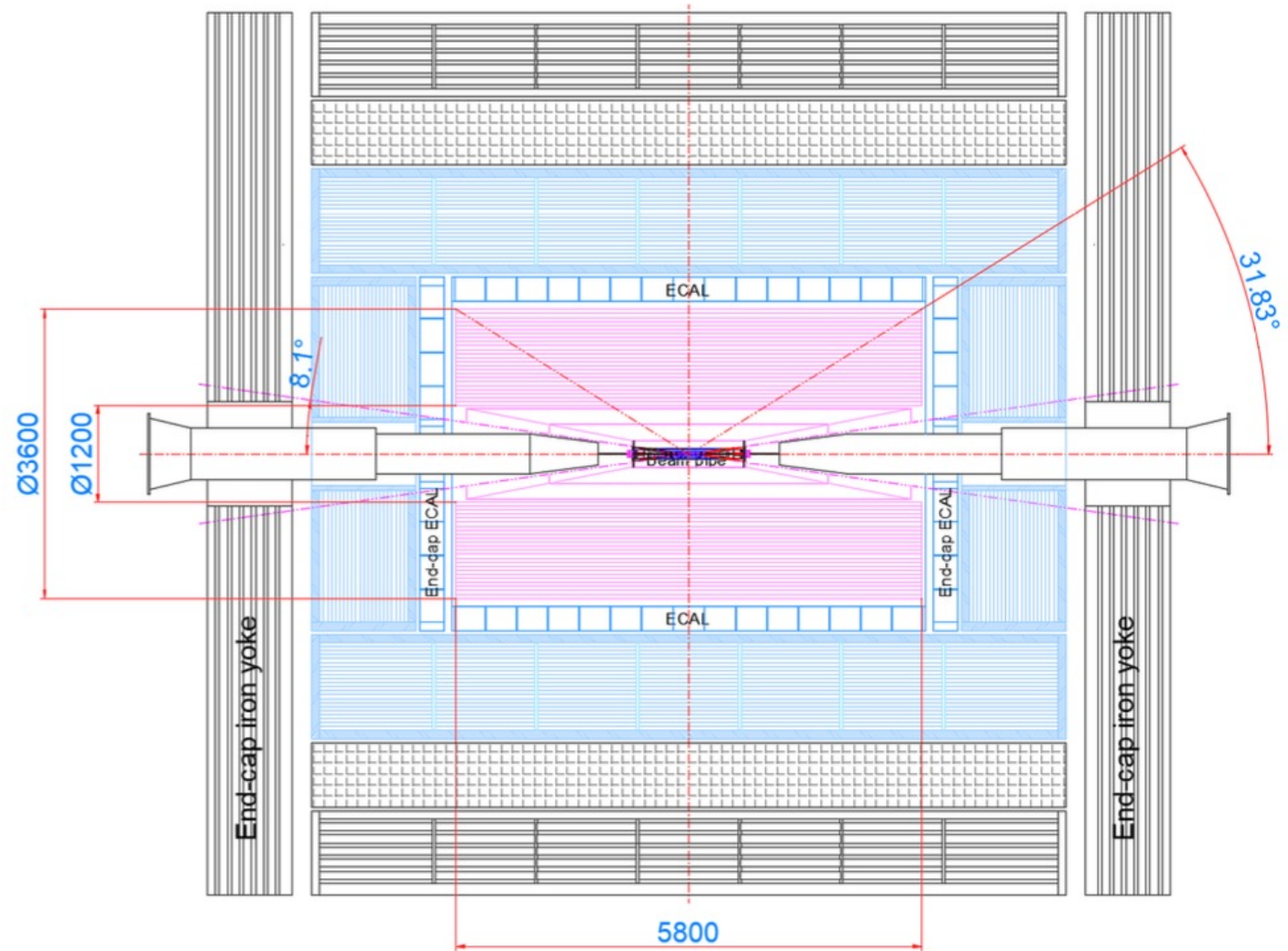
Tracker Design V0

Ø1200 mm = r 0.6 m
Ø3600 mm = r 1.8 m
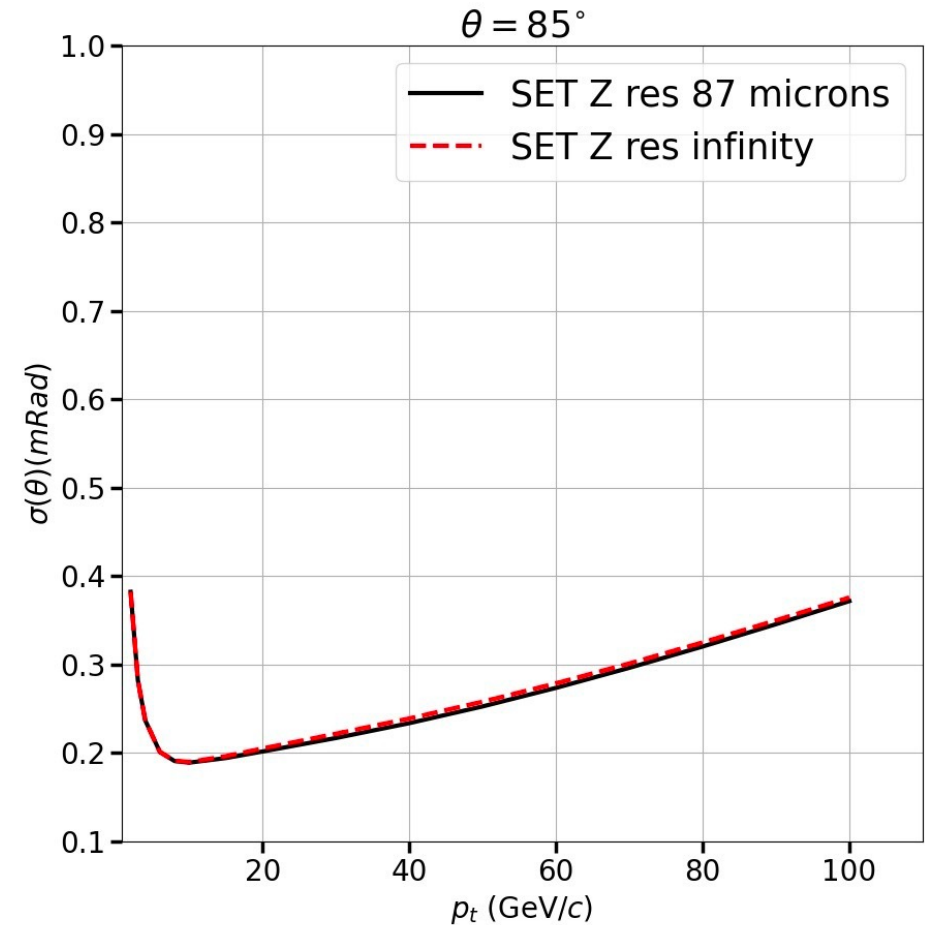长度：5800 mm (arccos0.85)

Silicon Tracker：三层

Layer: Single or Double?

- Single or double layer influence the Z resolution, which may influence physics performance
- Shown that Z res concerns little about theta res and pz res
- When theta = 85 degree, it shows no difference in theta res though Z res changes.
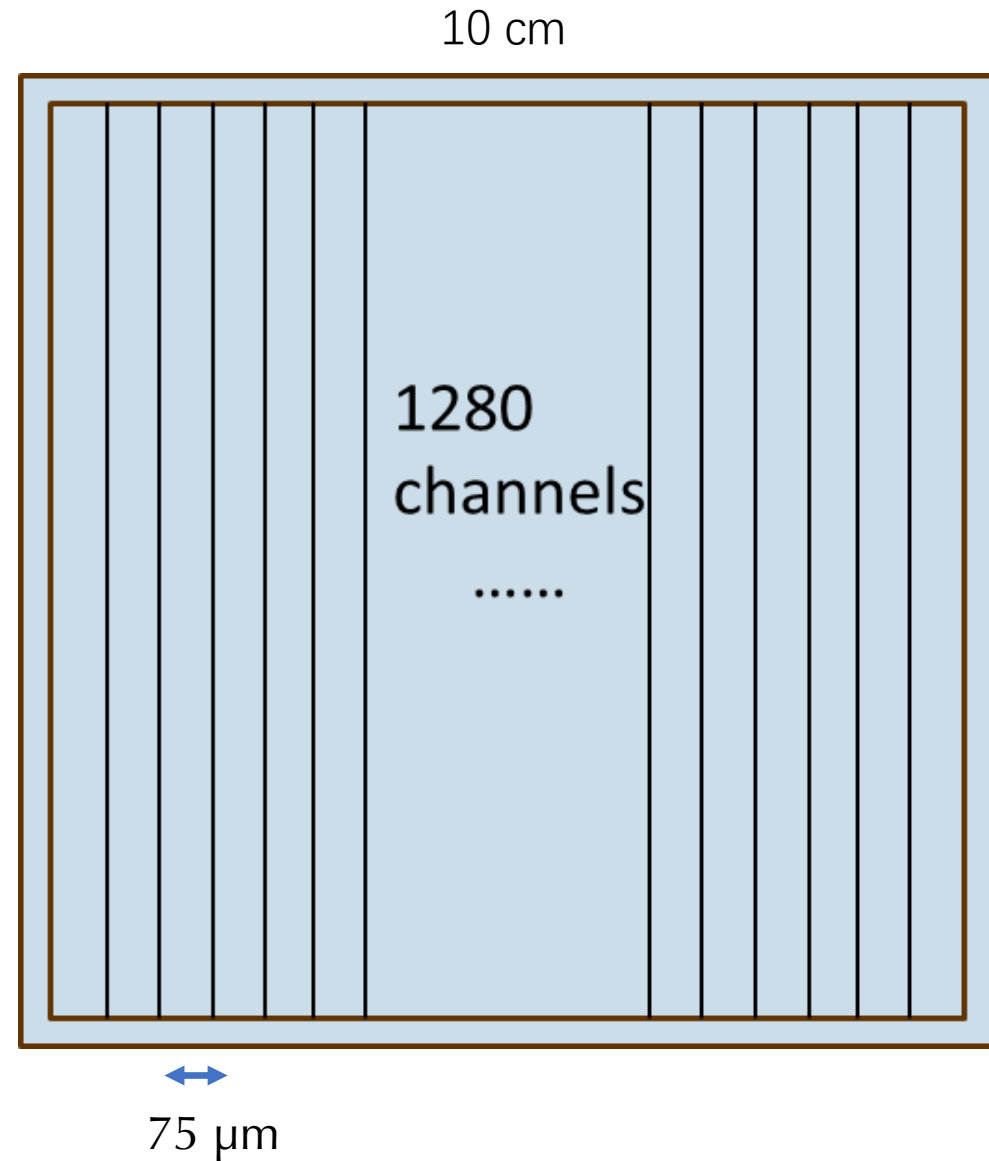
- **Single layer is acceptable**

Gang Li

3

Zhan Li

SET Module

- Strip length 10cm
- Strip pitch 75um
  - hard to wire-bonding with 50um
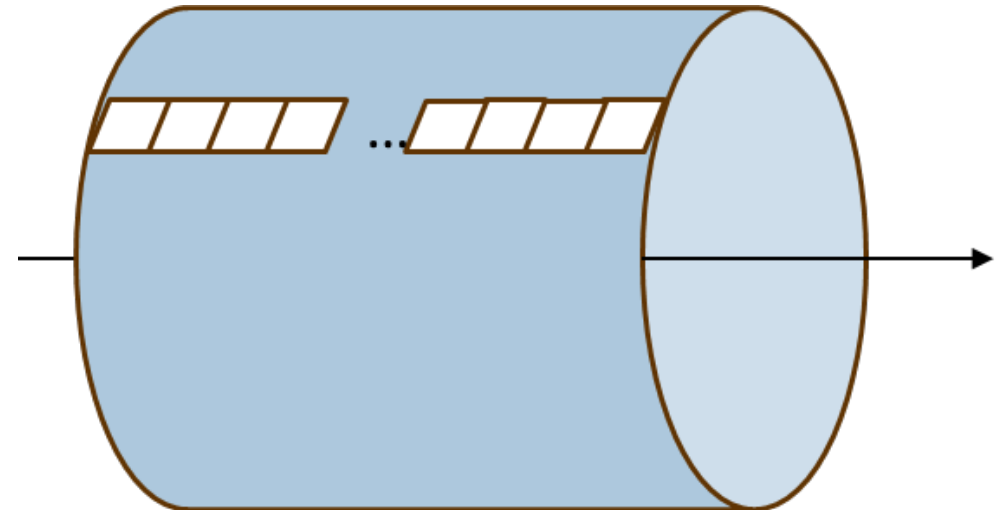- 1280 channels per module
  - Compatible with ASIC design

Single Module	
Area	10cm*10cm
Strip pitch	75um
# channels	1280

10 cm

1280 channels
......

75 μm

Zhan Li

Number of Modules

- Total length in z direction: 5.8 m

- Surface area: ~ 66 m^2

- Number of modules: ~ 6610

- Number of channels:
  - 6610*1280 = 8.4 M channels

SET	
Radius	1811mm
+/- z	2904mm
Strip Length	~10cm
Strip Pitch	75um

Next Steps

- Converge on the Front-end electronics design (Xiongbo)
- Simulation of HitMap with CEPCSW (Zhan)
- Mechanical design of stave structure (Jinyu)
- End-Cap …