

# SET Estimation

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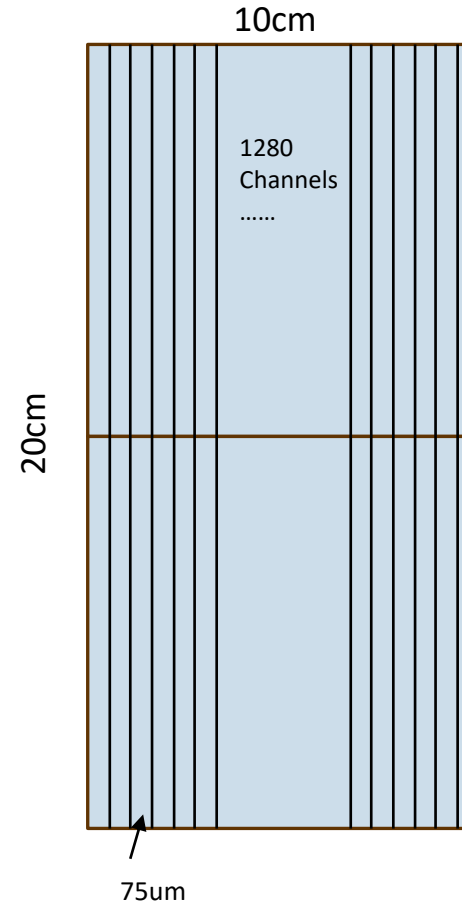
ZHAN LI

2024/3/22

# Number of modules and channels

- 10 modules on every stave
- Number of modules: 3420
- Number of channels:
  - $3420 * 1280 = 4377600 \sim 5e6$

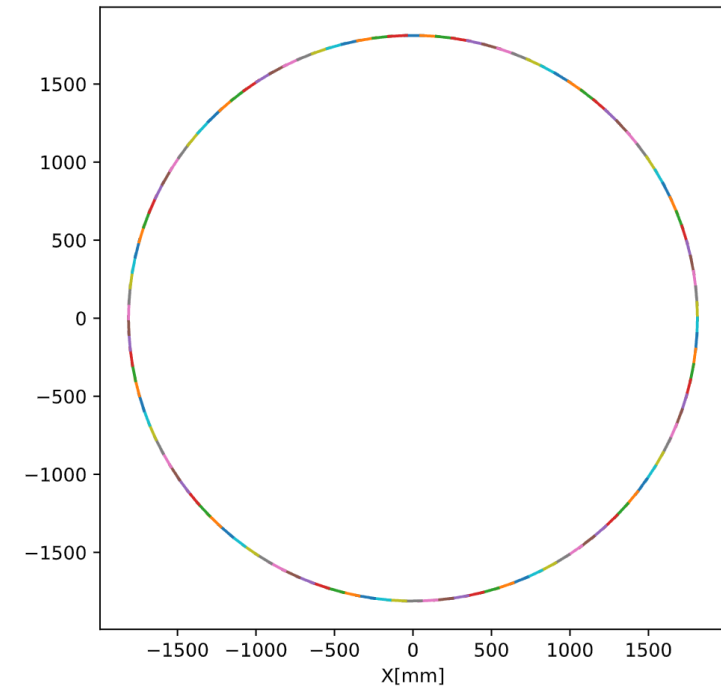
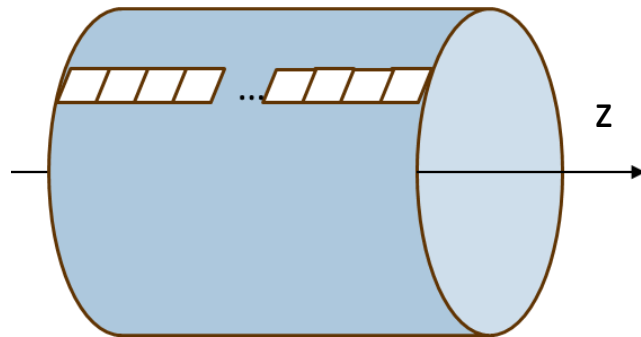
SET	
Radius	1811mm
+/- z	2904mm
Strip Length	~20cm
Strip Pitch	75um
Channels	1280



# Number of Ladders

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- Estimated number of ladders: 114
- Total length  $\sim 5.8\text{m}$ , 6 staves in z direction
  - Each stave  $\sim 1\text{m}$
- Number of staves: 684



R=1811mm  
N=114

# Rough cost estimation (only FEE, barrel)

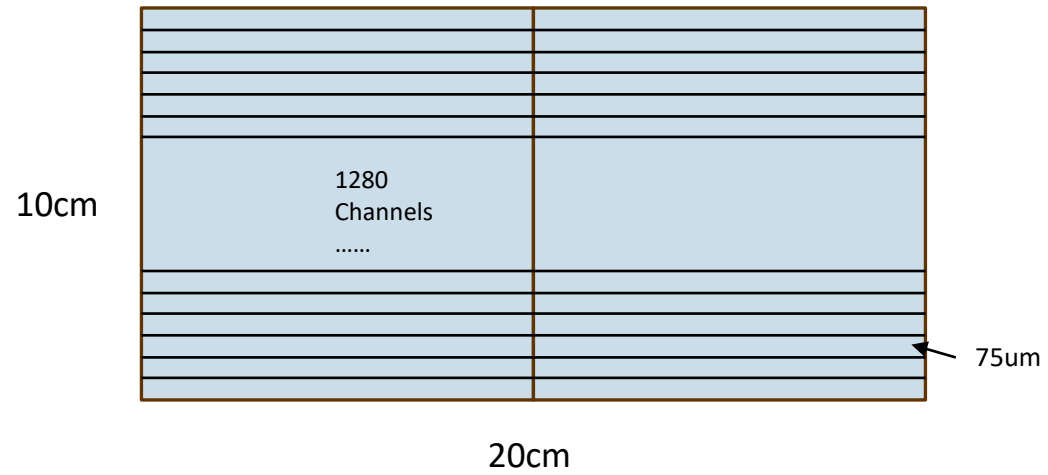
Items	Unit	Unit Cost(RMB)	Quantity	Total cost (10k rmb)
FEE板PCB	块	200	3420	69
FEE ASIC	通道	0.09	4377600	40
汇总板+柔性板	块	700	684	48
光纤	根	200	684	14
Connector (光纤)	对	2000	684	137
Connector (柔性板)	对	100	3420	35
Cables	根 (20m)	400	684	28
Necessary R&D				1460
Elec Total				1831

R&D只含原材料成本，电子学不含封装和打线

Source: Xiongbo Yan

# Rough cost estimation

Items	Unit	Unit Cost(RMB)	Quantity	Total cost (10k rmb)
Elec Total				1831
Sensors	块	5500	6840	3762
Elec+Sensor+R&D				5593



# Next Steps

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- Simulation of physical events and beam background with CEPCSW (Zhan)
- Impact of Simulation with new geometry(Zhan)
- Mechanical design of stave structure (Jinyu)
- End-Cap ...

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Thank you!