Status of optimizing the tracking system

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PID tracker

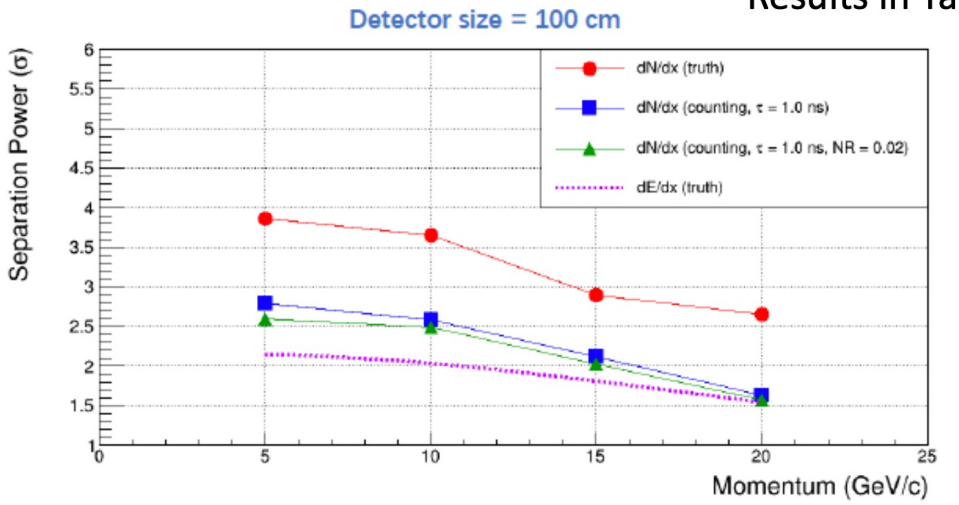
- ✓ **Aims both EW & flavor physics**
- ✓ **PID: boundary conditions**
  - **Tracker volume, # of layers, gaseous pressures, and so on**
- ✓ **To optimize tracker layout according to *p* and *ip* resolutions, as well as the constrain of hardware**

PID

Linghui & Shuiting

- Δ R = 1 m drift chamber provide 100 measurements

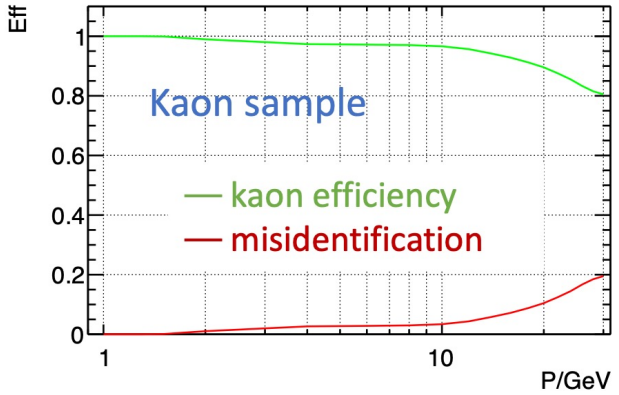
Results in Yangzhou workshop

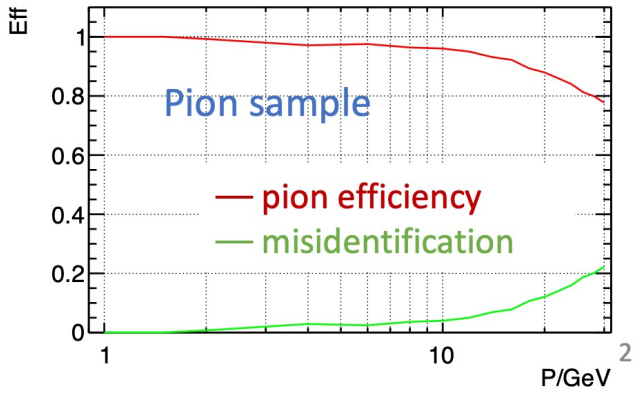


Fast simulation of PID efficiency in CEPCSW

Thickness of DC = 1m

Shuiting





Tracking system

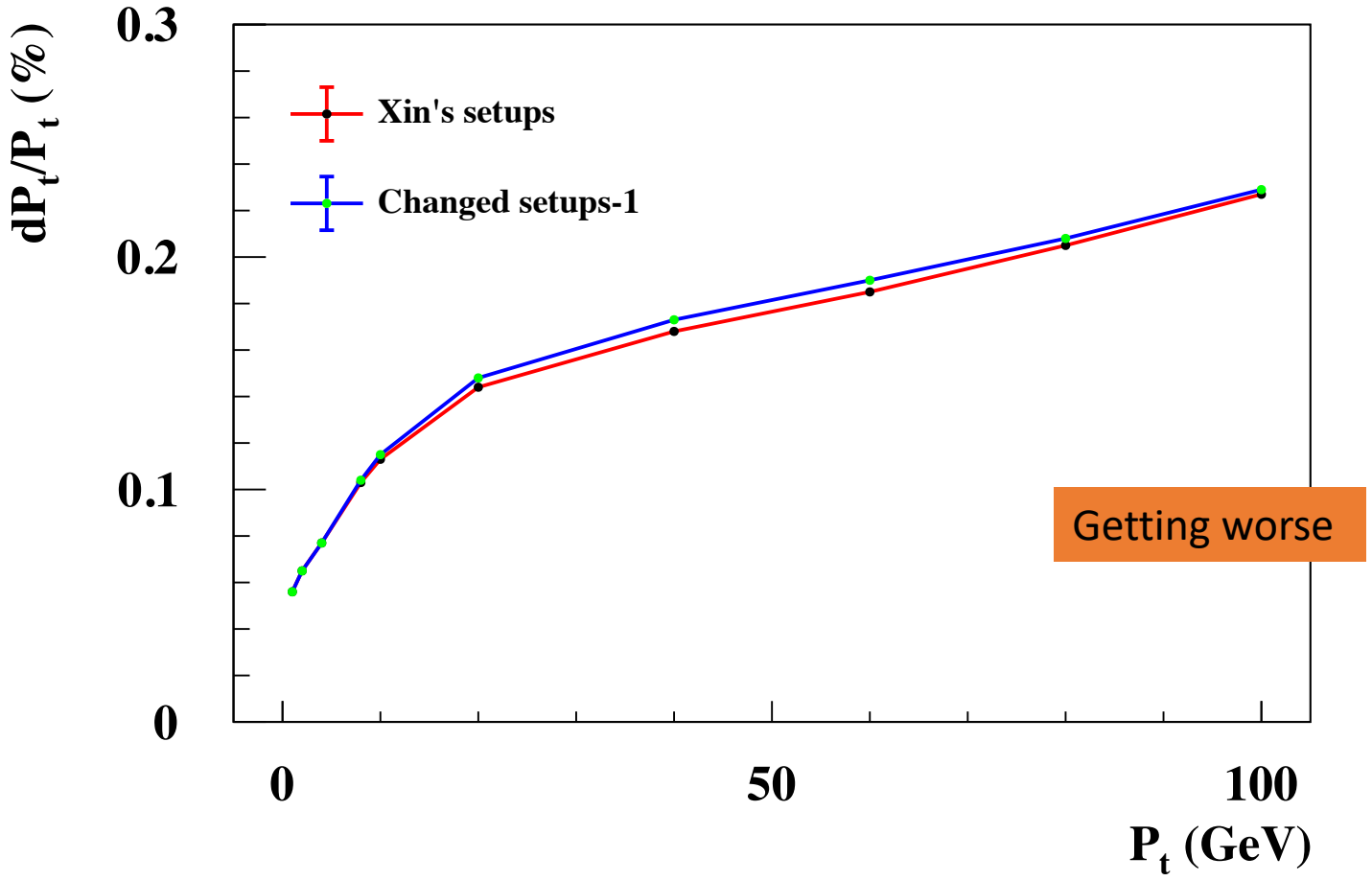
From Xin's Yangzhou talk, starting point

Sub detector	N layers	Resolustion (μm)		Material budget (%X_0)
		r-ϕ	z	
VXD	6	2.8 / 6 / 4 / 4 / 4 / 4	2.8 / 6 / 4 / 4 / 4 / 4	0.15 per layer
SIT	4	7.2	86.6	0.65 per layer
DC (cell 1x1cm^2)	100	100	2000	1.2
SET	1	7.2	86.6	0.65
Total	111	--	--	5.35

Goal: optimal layout
- Tracking & PID
- Barrel & End cap
- Input for detector paper

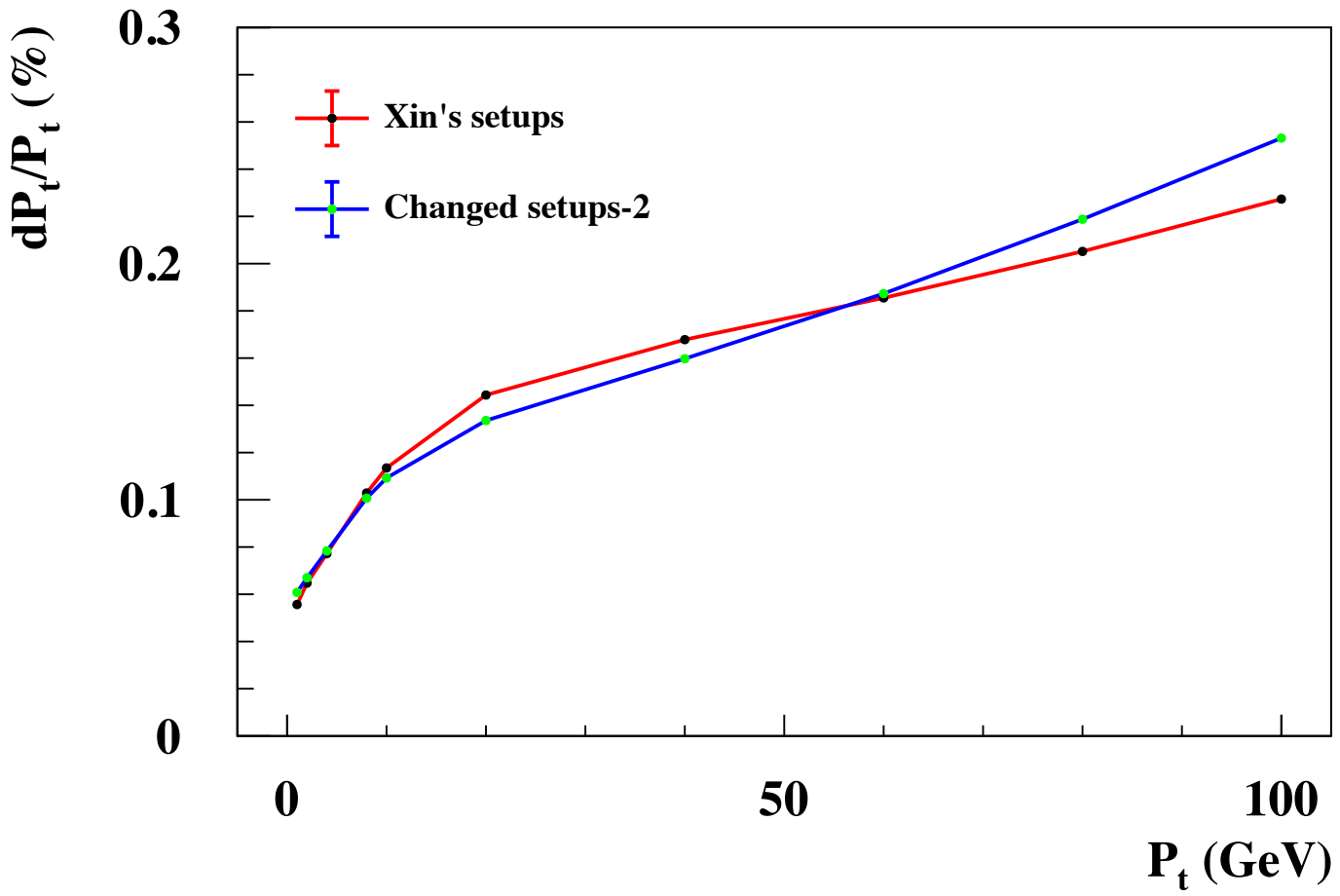
Variance -1

- ✓ Move CMOS layers near to MDC inner wall



Variance-2

✓ Move one CMOS layer outside MDC 3 CMOS | MDC | 2 CMOS



Plan

- Understand the role in momentum measurement
- Provide several options
- Validate them with CEPCSW