# Residual distribution of opt at different Pt with fast simulation

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# Global layout of tracking system

VXD		ІТКЕ & ОТКЕ				ІТКВ & ОТКВ			ТРС			20	2000 -				1	-	I	
layer	Half- Z	R	layer	Inner- R	Outer -R	Z	laye r	Half- Z	R	Inne r-R	Half- Z	Outer-R	15	500						
L11	130	12.4 59	ITKE 1	75	240	50 0.5	ITK B1	500. 5	240	600	2900	1800								
L12	130		ITKE 2	101.9	350	71 5	ITK B2	715	350					000						
L21	247	27.8 92	ITKE 3	142.6	600	10 01	ITK B3	1001	600				γ- α <del>,</del>	500 -				KERC2	, 	KED04
L22	247		ITKE 4	214	600	15 00	ОТ КВ	2900	1800				,	REDOR	MIDO)		KEDER	уре 		
L31	374. 5	43.7 92	ОТК Е	405.7	1810	29 03								0		XIXL: VIX34 X	<b>YI8</b> 56			
L32	374. 5												-5	500 —	-500	0	500	 1000 z-ax	is [mm]	1500

 $\theta_2$ =31.94deg

2000

2500

模拟中入射的角度选为10°,即只穿过VTX和端盖部分。把ITKE和OTKE的hit效率分别设为1.00,0.95,0.90三个不同的值,观察在不同动量下,动量分辨的残差分布。

### residual distribution of $\sigma$ Pt



## events ratio within $3\sigma$

 $events_{(between \pm 3\sigma)} / events_{(total)}$ 

Pt eff	2	5	10	20	50	100	100 99 99 
100%	99.8%	99.8%	99.8%	99.7%	99.7%	99.8%	98 97 97
95%	99.2%	99.04	98.8%	98.2%	97.7%	97.6%	96
90%	98.4%	98.04	97.6%	96.5%	95.3%	94.8%	95 0 20 40 60 80 100

pt分辨的残差分布未观察到明显拖尾现象, 3σ 范围内事例数占比随效率和动量增加而降低。

# z of ITKE4: 1500mm→1800mm



### events ratio within $3\sigma$ for 4 endcaps

z of ITKE4: 1500mm→1800mm



#### z of ITKE3、ITKE4: 1001mm、1500mm→1301mm、1800mm



#### events ratio within $3\sigma$ for 4 endcaps

z of ITKE3、ITKE4: 1001mm、1500mm→1301mm、1800mm

 $events_{(between \pm 3\sigma)} / events_{(total)}$ Pt 99.5 2 5 20 10 50 100 eff=1.00 eff **99** eff=0.95 eff=0.90 98.5 99.78% 99.78% 99.75% 99.74% 99.66% 99.71% 80 (%) 80 (%) 80 (%) 100% 99.29% 95% 99.47% 99.41% 98.79% 98.15% 97.90% 97 96.5 99.07% 98.87% 98.57% 97.76% 96.29% 95.74% 90% 96 100 Pt[GeV/c] 20 40 60 80 0

#### residual distribution of σPt for 3 endcaps(no ITKE2)



# events ratio within $3\sigma$ for 3 endcaps

 $events_{(between \pm 3\sigma)} / events_{(total)}$ 



backup

