Studies of Silicon Forward Tracking Efficiency

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Starting point with phoenix-tracks

Tracks

All	Possible	Nominate	Candidate	Found	
275	197	157	91	68	
	0.72	0.57	0.33	0.25	% of all
		0.8	0.46	0.35	% of possible

possible : min(5 hits & 2 hits3D & vertex)
nominate : straight line **cut1** on z, pt
candidate : helix fit **cut2** on z, pt

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In KalSiliconStandaloneTracker

Cut 1 :

$\Delta z < 5cm$ (tcl-switch)

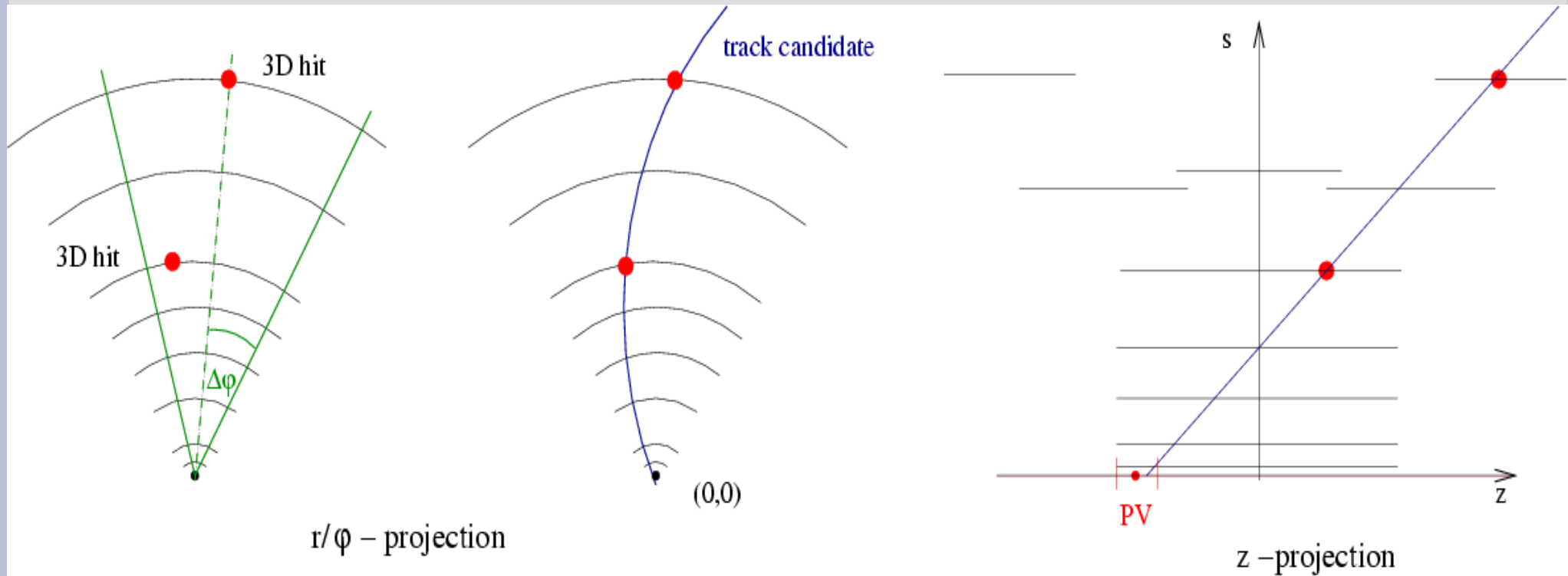
$\Delta phi < \pi/20$ (~ pT > 50 MeV)

Cut 2 :

$\Delta z < 0.8cm$ (tcl-switch)

$\eta < 4$

pT > 0.2 GeV (tcl-switch)



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Done

- correct the z-coordinate of the track-beam intersection to the beamposition (was fixed at 0,0)
- added vertices from ZVertexCollection
- call SVXBeam-Database for each run
- include a switch for

ZvertexCollection	:	ZverDescrip
SVXBeam-Database	:	SVXBeamOff

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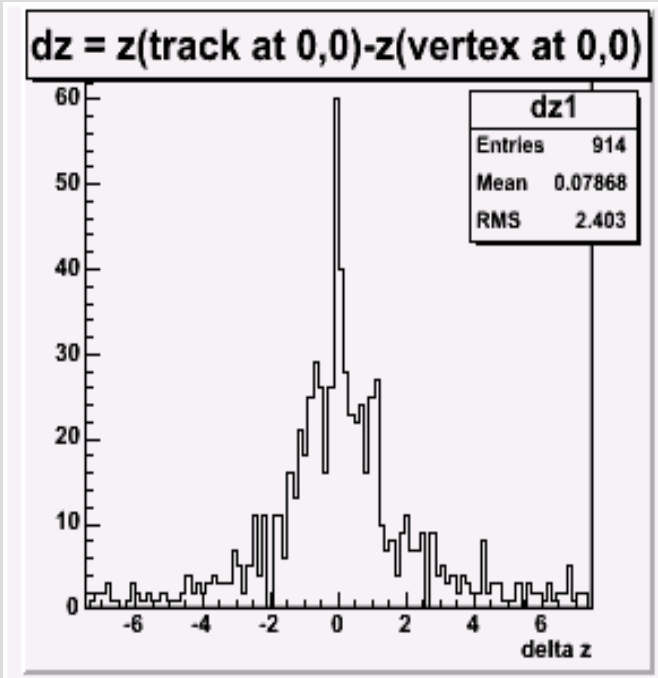
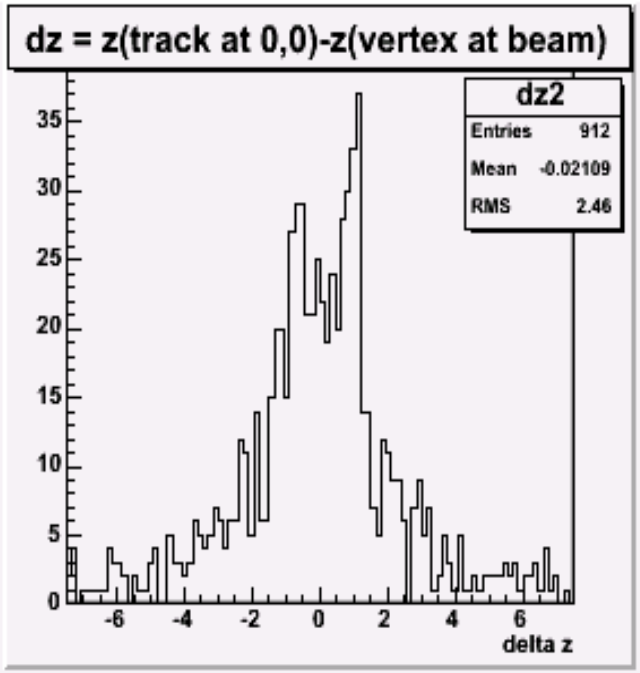
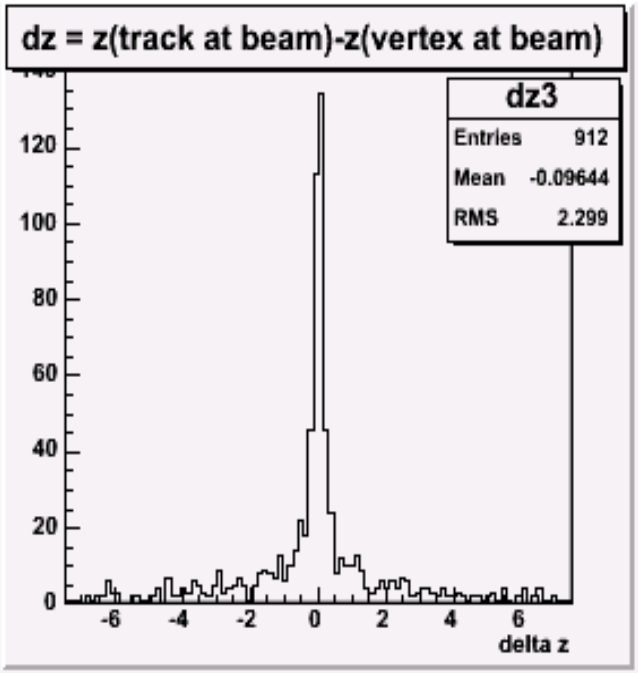
cut1 - nominates







Calculation of the **cut1**-value **dz** at beamposition improves StandaloneTracking

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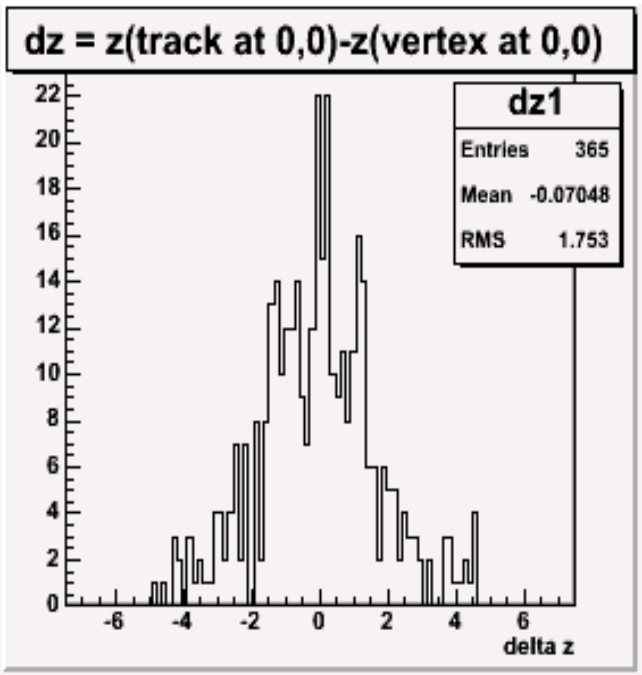
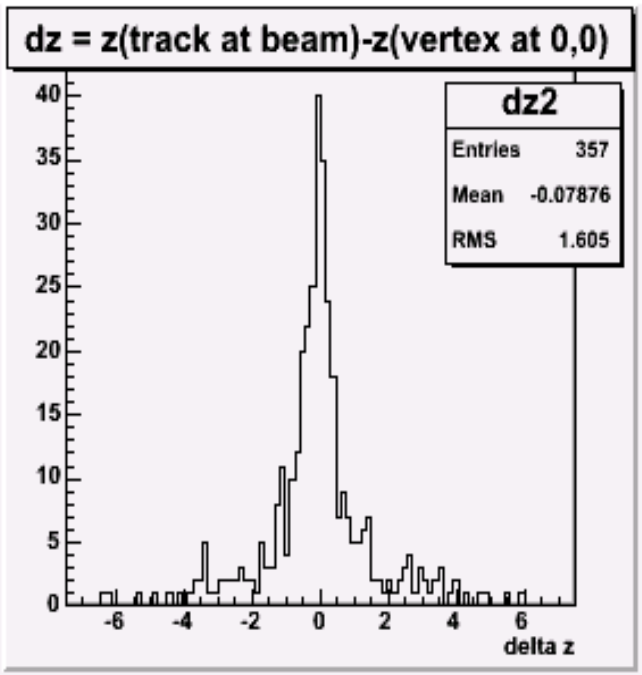
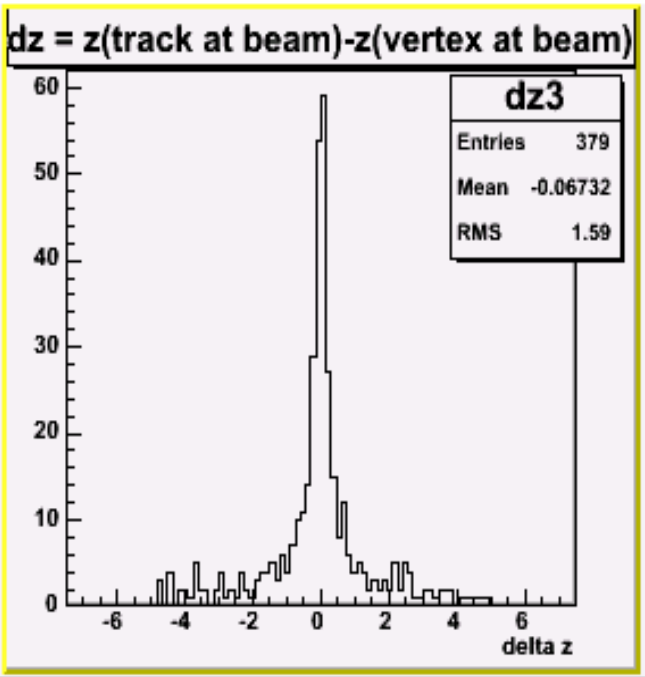
cut2 - candidates







Calculation of the **cut2**-value **dz** at beamposition improves StandaloneTracking

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Tracks

Possible	Nominate	Cut 2	Candidate	Found		
208	202	0.8 cm	188	167		
0.76	0.73		0.68	0.61	%	Of all
				0.8	%	Of possible
		1.6 cm	199	178		
			0.72	0.65	%	Of all
				0.86	%	Of possible
		2.0 cm	200	179		
			0.73	0.65	%	Of all
				0.86	%	Of possible

with Zvertex, FastZVertex and Z at real beamposition !

Conclusion

- now KalSiliconStandaloneTracker is able to find more tracks, especially for high η-values
- the beamposition from SVXBeam-Database is used
- Vertices from the ZVertexCollection are possible to include