

Combined MinBias/Cosmcis Alignment Studies

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DESY

Hamburg Alignment Meeting
July 7th, 2009

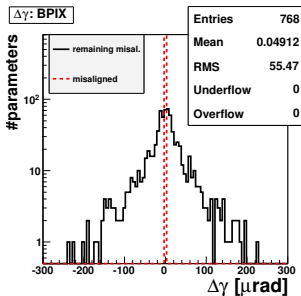
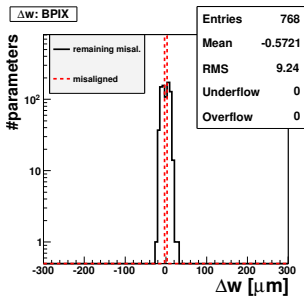
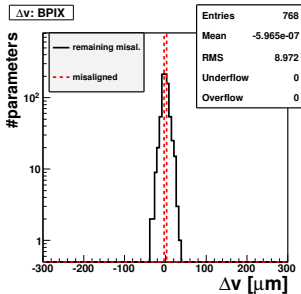
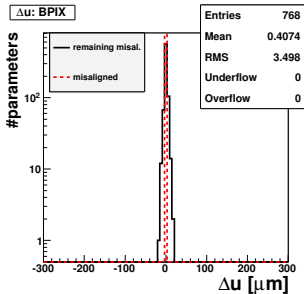
- $3.5 \cdot 10^6$ Cosmics (pede),
 $p > 5 \text{ GeV/c}$,
 $N_{hit} \geq 14$, $N_{2D-hit} \geq 3$
- $4.9 \cdot 10^6$ MinBias tracks,
 $p_t > 2.5 \text{ GeV/c}$,
 $N_{hit} \geq 10$, $N_{2D-hit} \geq 3$
- SurveyLASOnlyScenario,
but TPB ideal
- TPB as reference
- u, w, γ for strip units
- in TIB also α , β
- u, v, w, γ in TPB
- u, v, w in TPE
- $\sigma_{pre} = 500 \mu\text{m}/\mu\text{rad}$

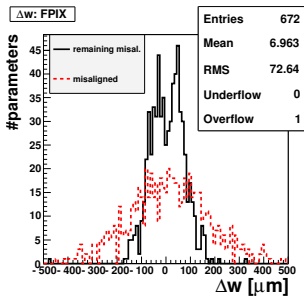
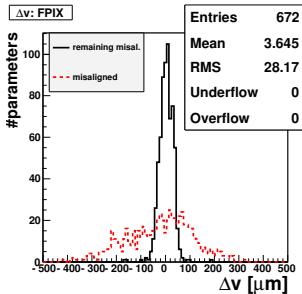
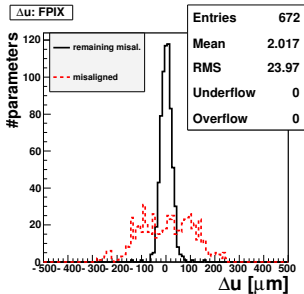
55836 free Parameters

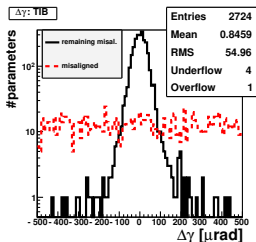
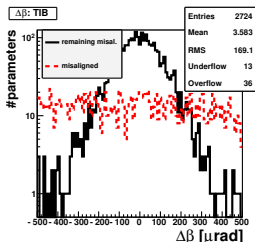
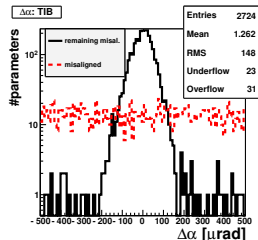
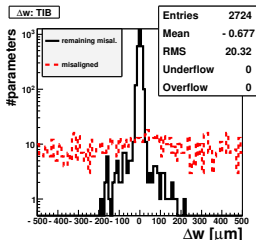
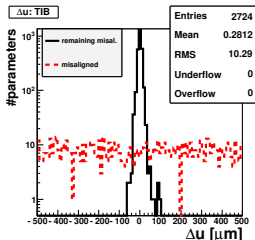
```
'PixelHalfBarrelDets,rrr00r',  
'TrackerTPEModule,111000',  
'TIBSSDets,101111',  
'TrackerTIBModuleUnit,101111',  
'TOBSSDets,101001',  
'TrackerTOBModuleUnit,101001',  
'TIDDets,101001,endCapSS',  
'TrackerTIDModuleUnit,101001',  
'TECDets,101001,endCapSS',  
'TrackerTECModuleUnit,101001'
```

New Pede (3 iterations)

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'regularisation 1. 0.1',  
'savespace', 'entries 50',  
'chisqcut 30.0 4.5'
```

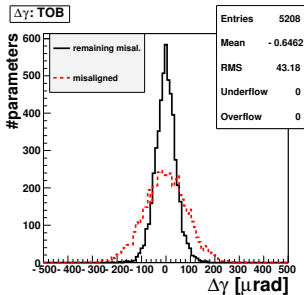
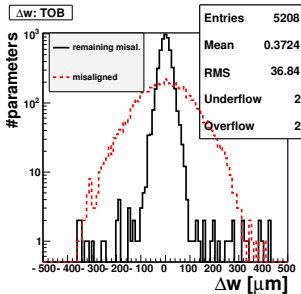
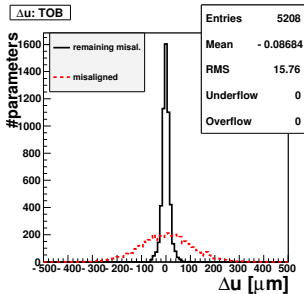


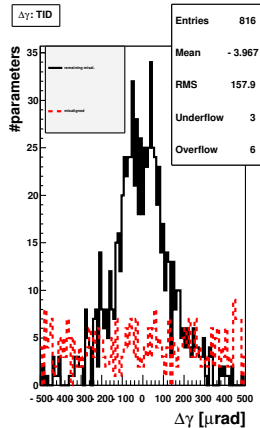
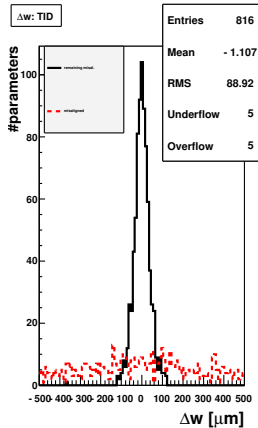
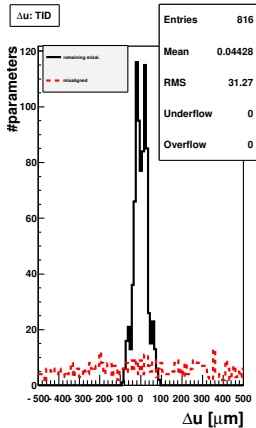


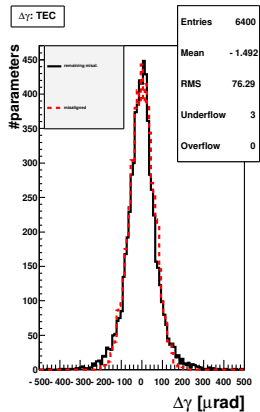
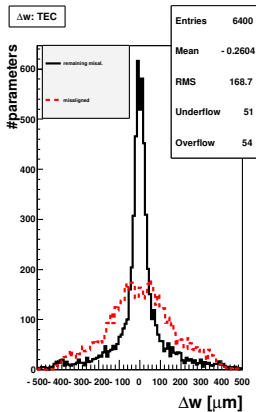
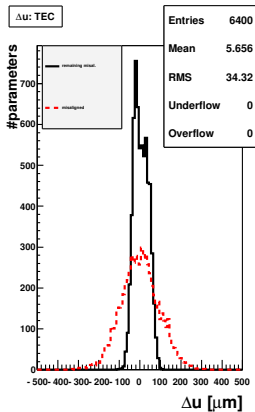


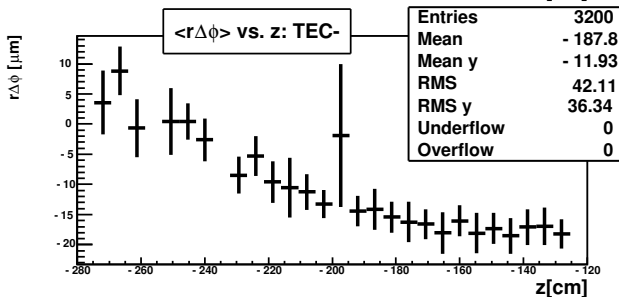
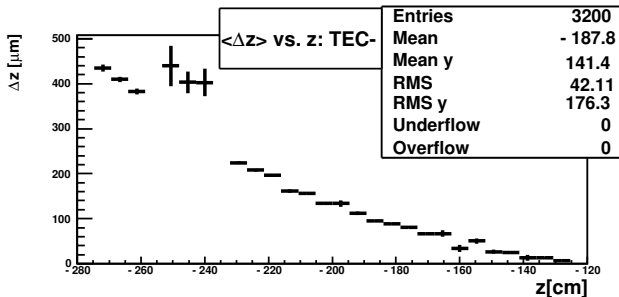
α, β outliers below 1.5 mrad

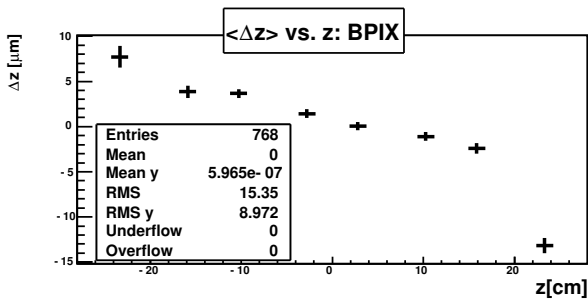
γ , outliers below 1.0 mrad (everywhere)



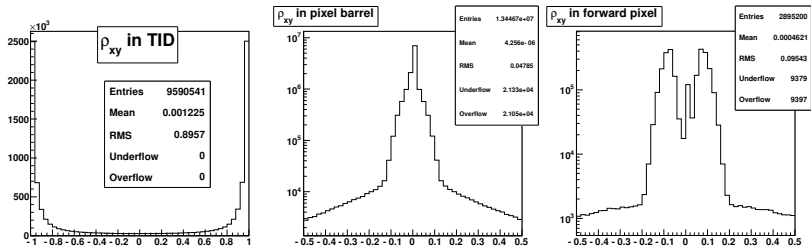








xy-Hit Correlations



- TID/TEC: expect large correlations due to wedge shaped modules
- if $\rho > 0.05$: diagonalise, assuming $r\Delta\phi \sim x$
- TPB: large values probably due to material effects shuffled onto hit errors
- TPE: double peak??
related to template hit reco being wrong in FPIX?