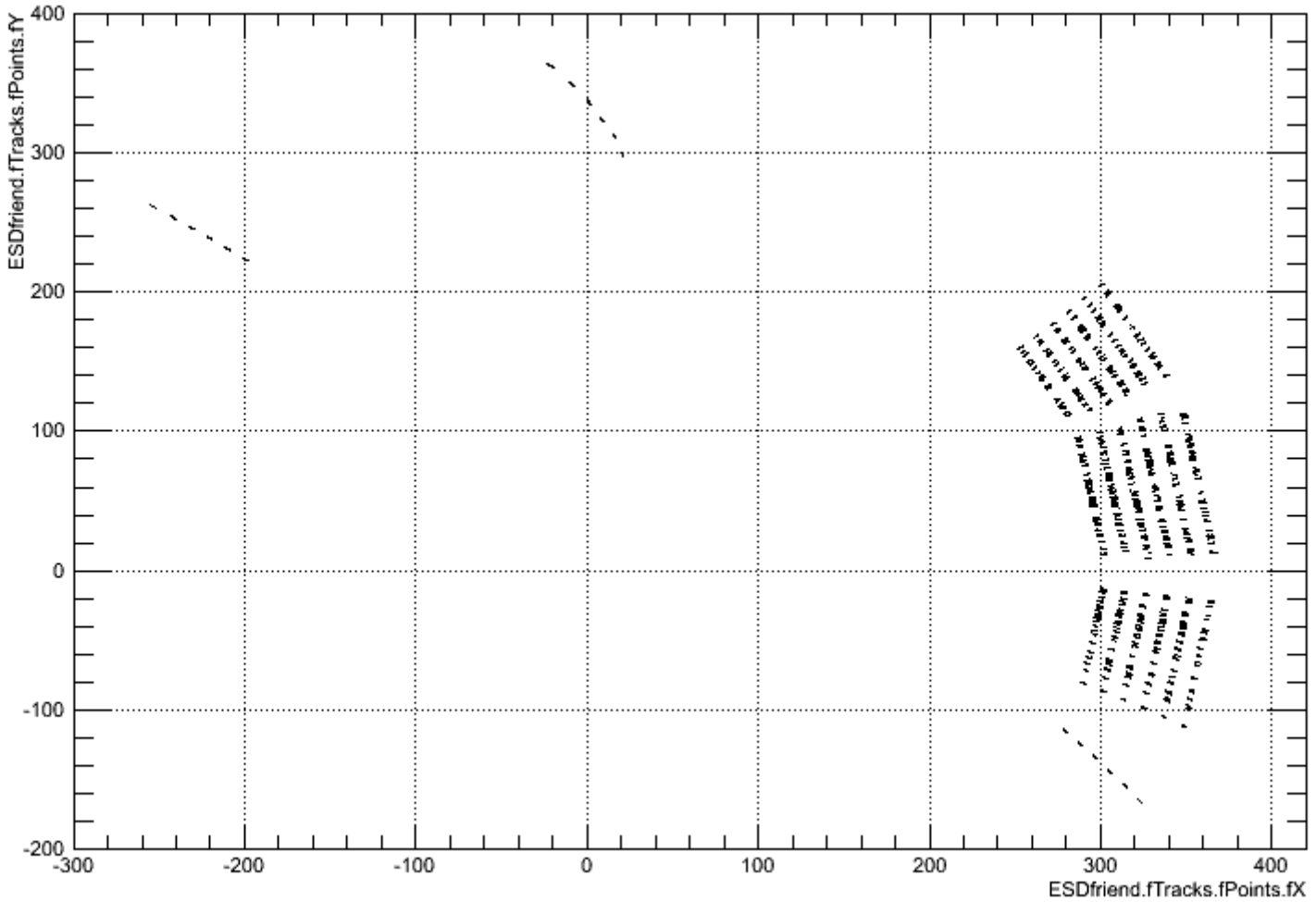
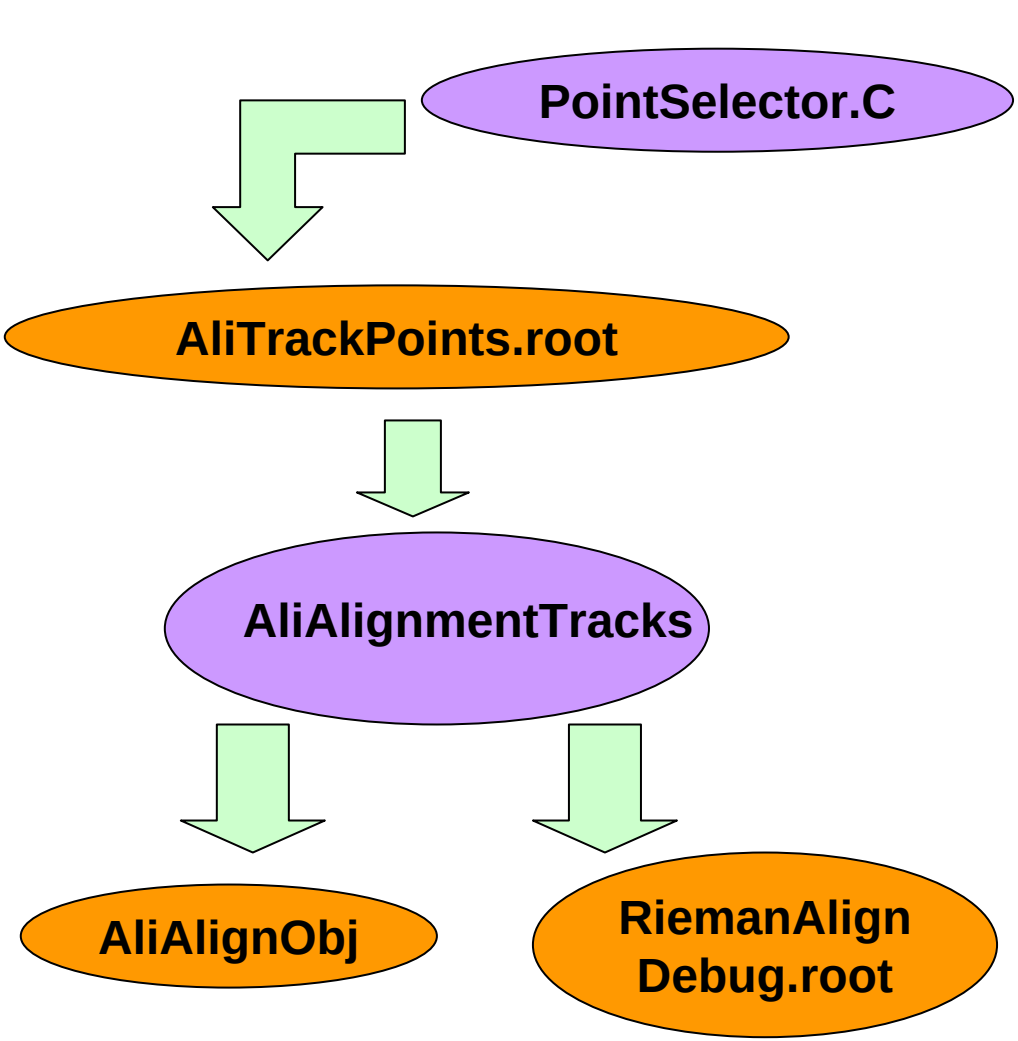
TRD alignment status, March 2007

- **cosmic data, converted to AliRoot format;** ongoing effort to get the standard offline reconstruction and alignment run on it
- **rough survey of chambers in Supermodule 8** done before installation, will be used for verifying the cosmic alignment
- **rough survey of Supermodule 8** in Dec-2006, good for practicing the procedures, not good for true alignment
- **AliTRDalignment** - new tool for manipulating TRD alignment sets

on the way to analyze cosmics in AliRoot – standalone TRD tracking (here still with simulated data)

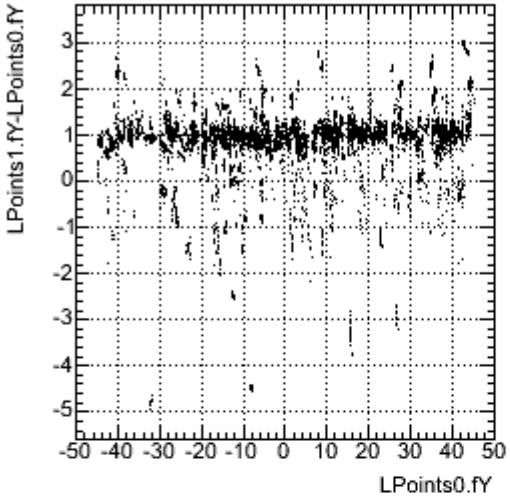


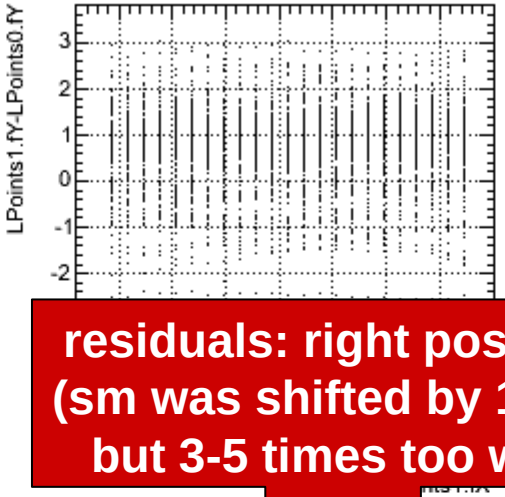
central barrel alignment procedure applied to TRD

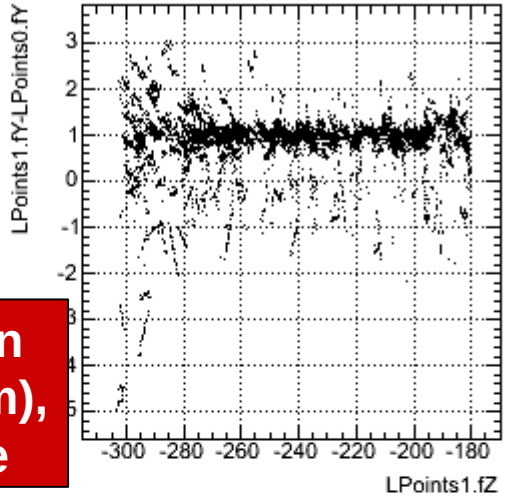


- it works, in principle, but…
- resolution about 3-5 times worse than in the standard reconstruction
- sometimes wrong recommendations as to what and where to shift

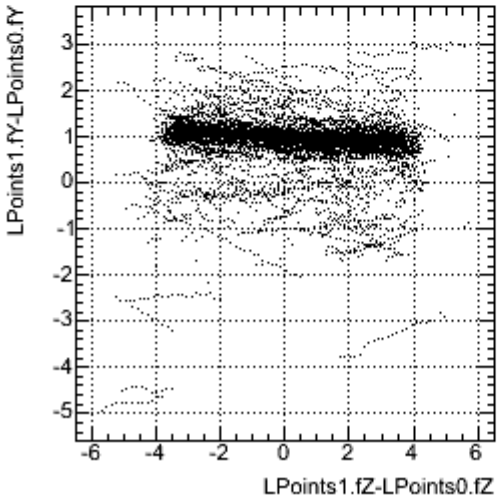
central barrel alignment procedure applied to TRD

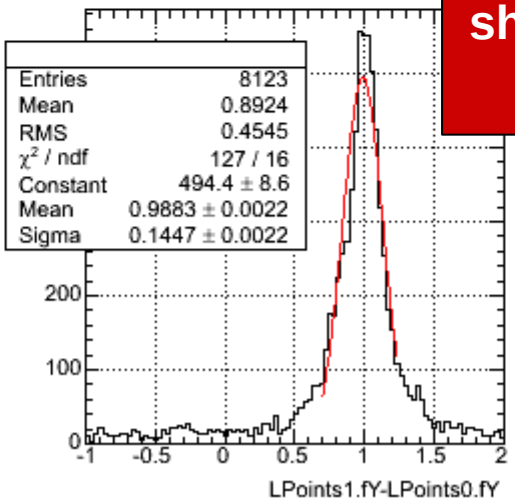






residuals: right position (sm was shifted by 1 cm), but 3-5 times too wide





shift recommendations: entirely wrong

ndcapC/Sector1/InnerChamber)
capC/Sector1/OuterChamber)

Result

shift in phi	2.815
shift in r	2.016
shift in z	4.927
tilt in phi	0.6320
tilt in r	0.6170
tilt in z	-0.1149

rough survey of chambers in the first supermodule - chamber displacements ΔX in mm in phi

A-side

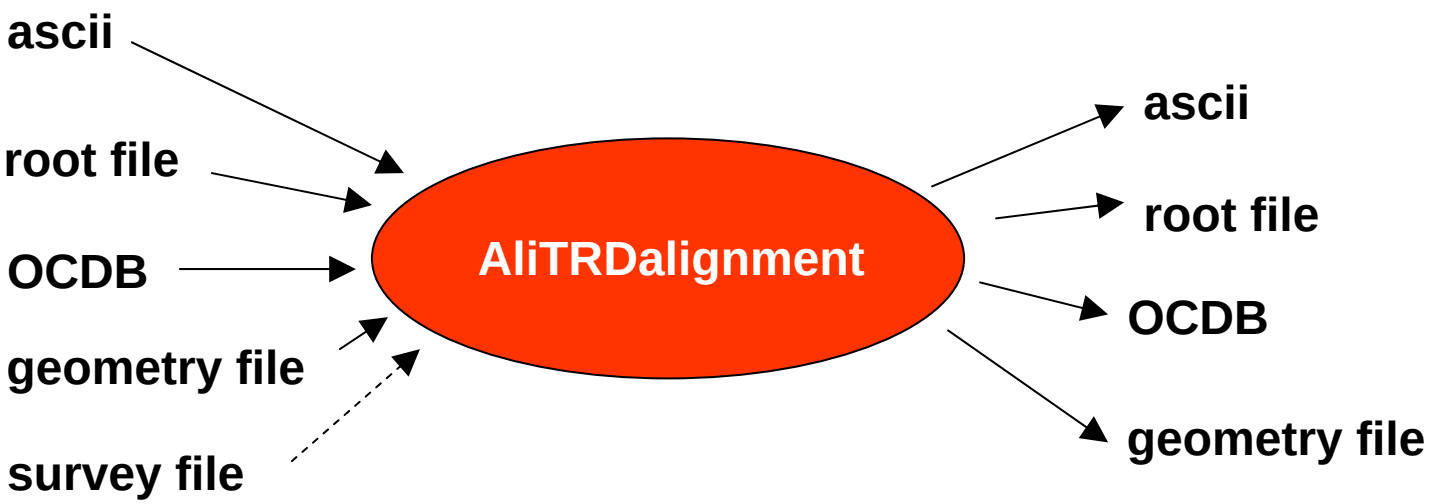
	A	B	B'	C	D
L5			2.47 ± 0.23		
L4					-3.0 ± 2.2
L3		-2.93 ± 0.71		-2.16 ± 0.25	-3.0 ± 1.4
L2		0.15 ± 0.35			0.5 ± 1.4
L1		2.10 ± 0.21		1.76 ± 0.52	
L0		-1.55 ± 0.88		-2.33 ± 0.35	

C-side

	A	B	B'	C	D
L5			-4.22 ± 0.12		

- **somewhat worse than the expected ΔX=1 mm**
- **parallel shift of a whole layer rather than rotation**

AliTRDalignment class - new tool to manipulate TRD alignment sets



- converting between different file formats (s. above)
- generating random sets for simulation
- reporting and visualization