

BEAM TEST DATA ANALYSIS IN BOLOGNA

SuperB beam test (Sept 2011)

Summary

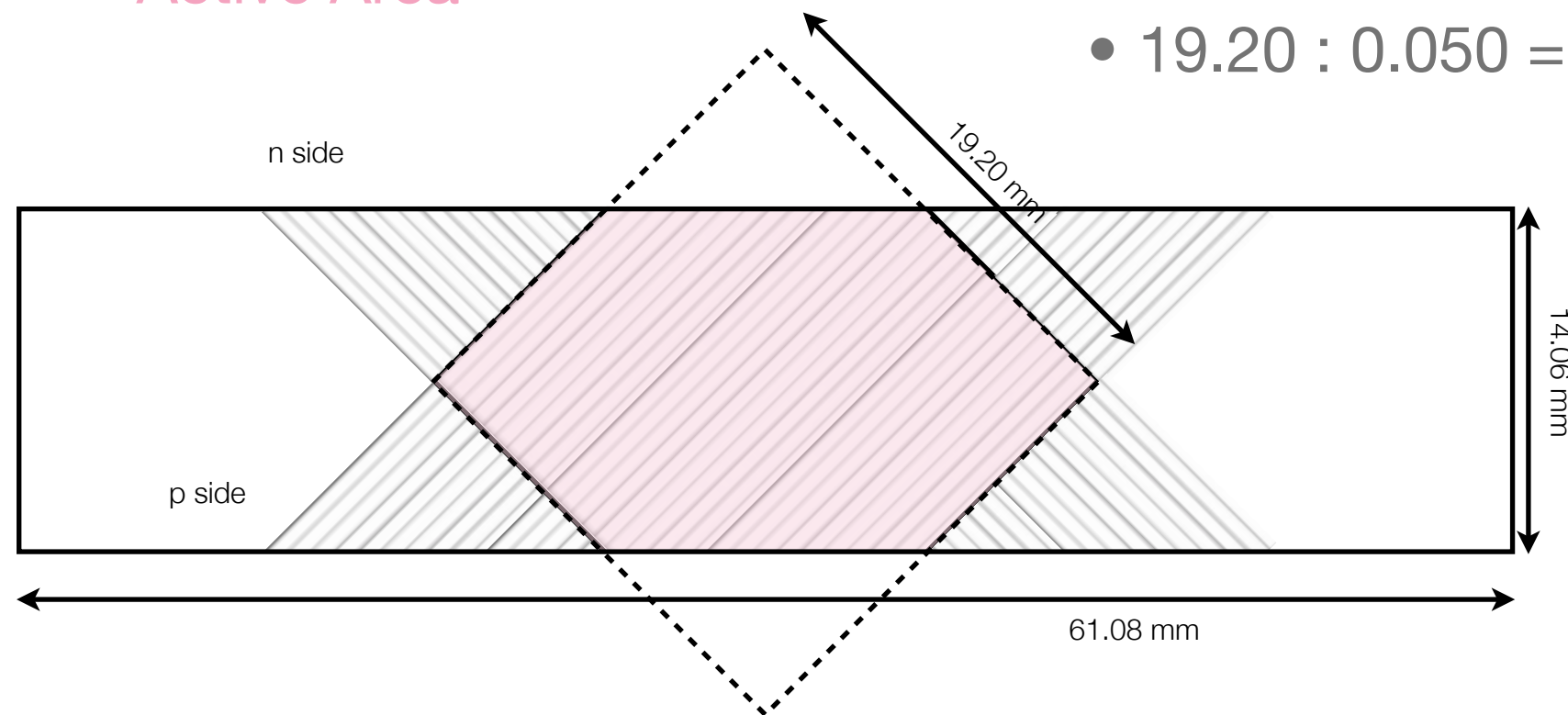
- Info collection
- Alignment
- Analysis

STRIPLETS GEOMETRY - from Lorenzo

Active Area

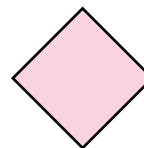
- pitch = 50 μm

- $19.20 : 0.050 = 384$ channels

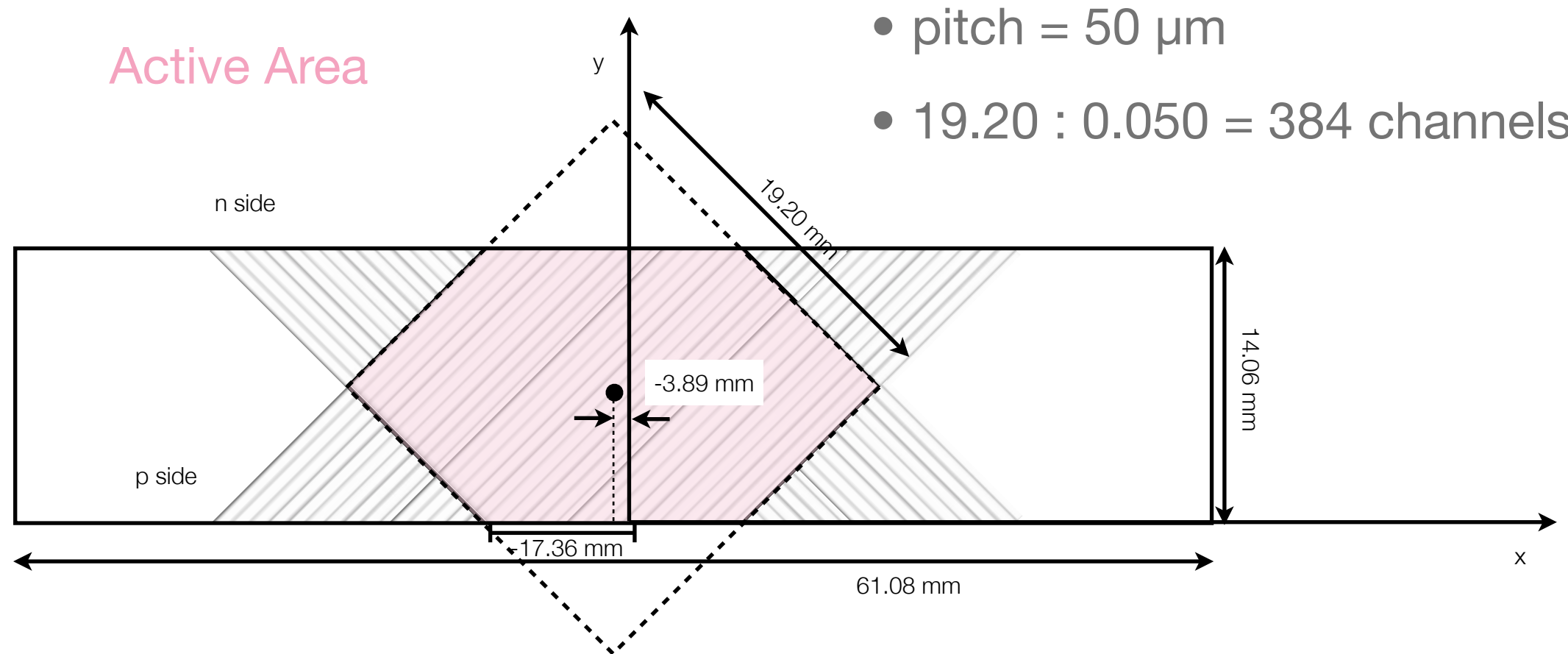


# type id	3
# type of detector (strip, pixel, striplet)	striplet
# half-dimensions of detector x, y, z	3. .645 0.0150
# range of active area U	-.960 .960
# range of active area V	-.960 .960
# range of active area U'	-3. 3.
# range of active area V'	-.645 .645
# material	silicon
# pitch u, pitch v	.0050 .0050
# angle u, angle v	45 135
# offset u, offset v	0 0

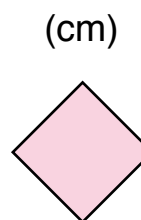
(cm)



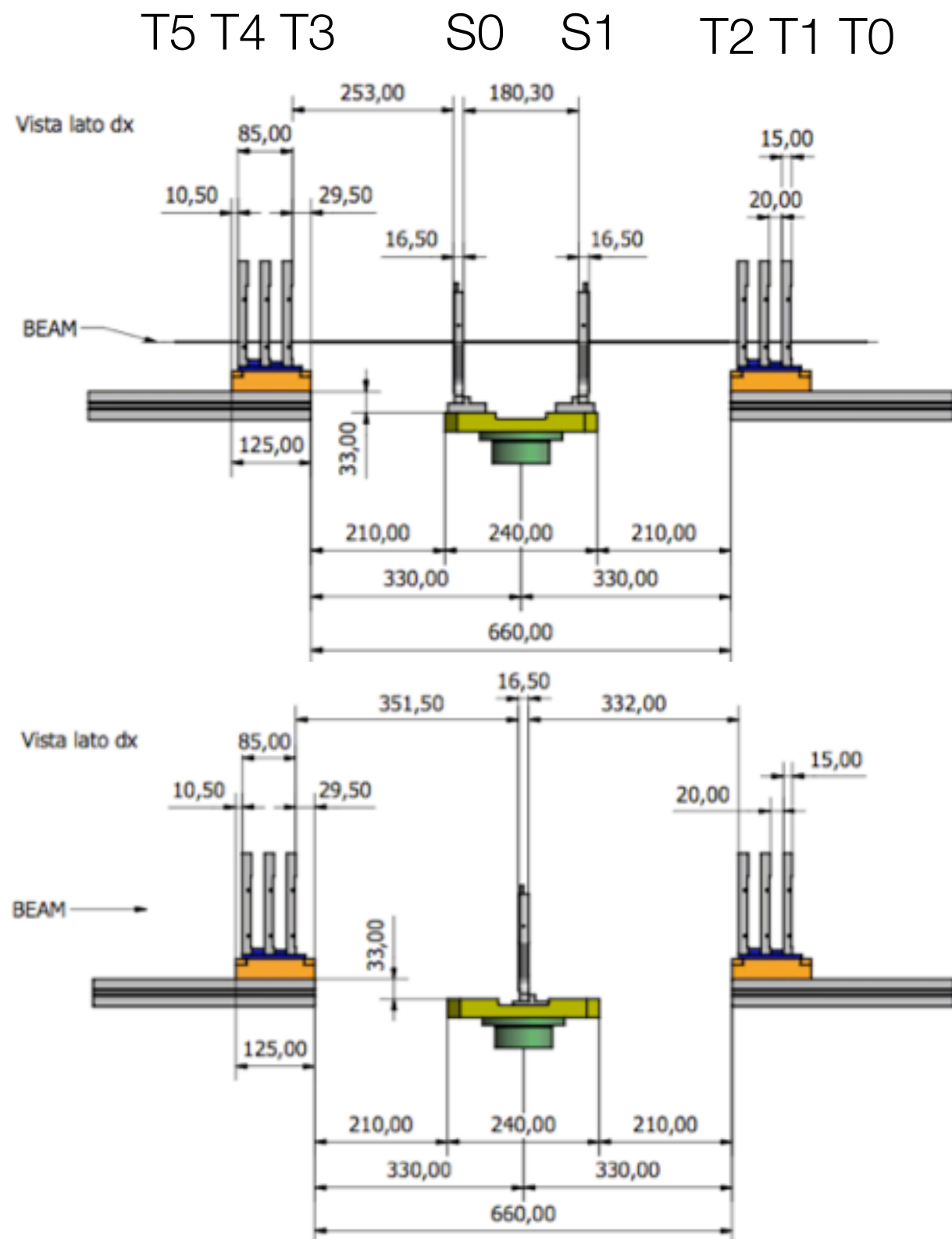
STRIPLETS GEOMETRY - from Lorenzo



# type id	3
# type of detector (strip, pixel, strip)	triplet
# half-dimensions of detector x, y, z	3. .645 0.0150
# range of active area U	-.960 .960
# range of active area V	-.960 .960
# range of active area U'	-3. 3.
# range of active area V'	-.645 .645
# material	silicon
# pitch u, pitch v	.0050 .0050
# angle u, angle v	45 135
# offset u, offset v	0 0



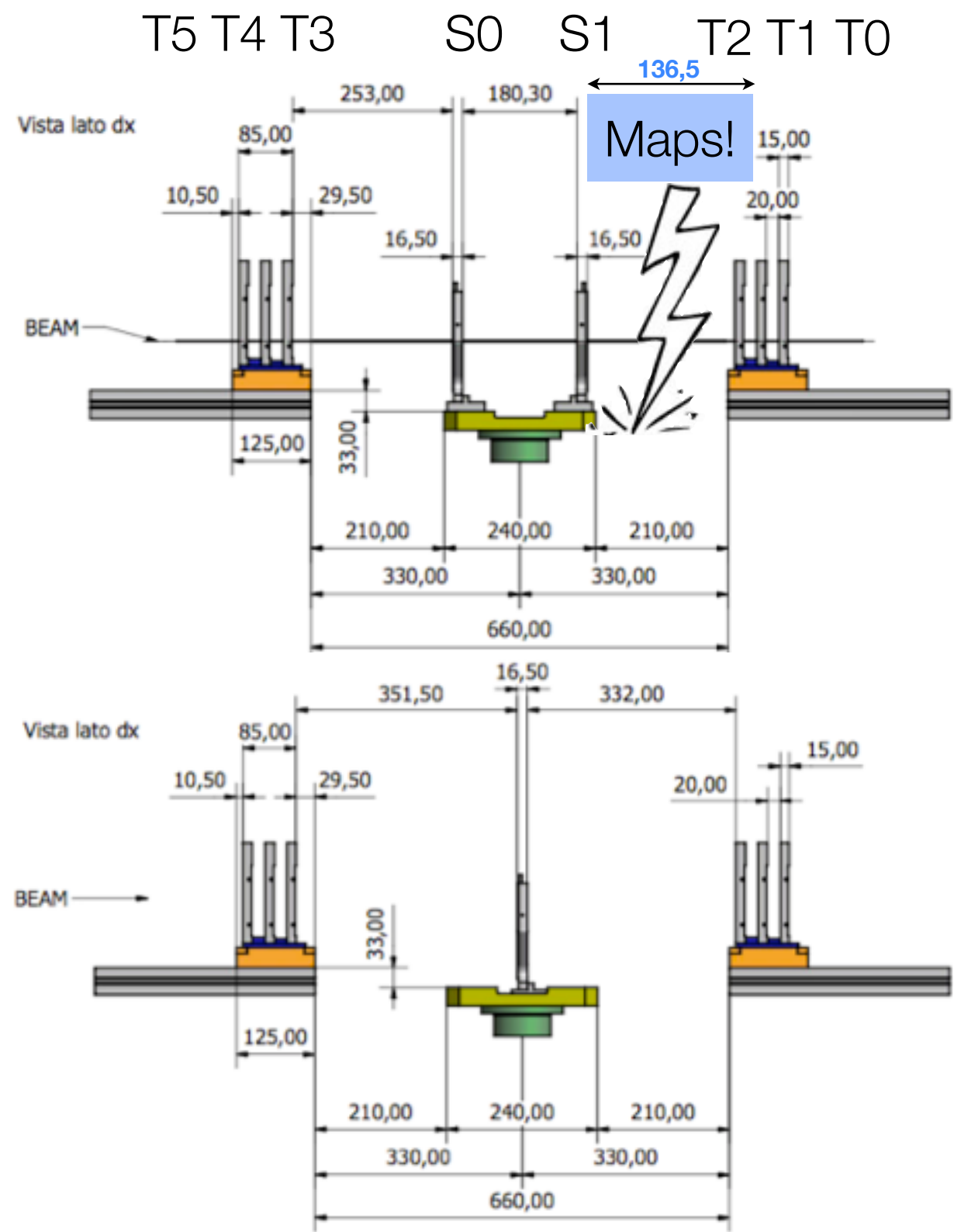
SETUP - STRIPLET DUTs



DET	Z (mm)	Z _{config}
T5	0	0
T4	35	35
T3	70	70
T2	785	920
T1	820	955
T0	855	990
2 striplet DUTs		
S0	337.1	
S1	535.7	
1 striplet DUT		
S1	435.6	



SETUP - STRIPLET DUTs



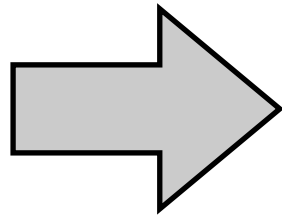
DET	Z	Z _{maps}	Z _{congif}
T5	0	0	0
T4	35	35	35
T3	70	70	70
T2	785	921.5	920
T1	820	956.5	955
T0	855	991.5	990
2 striplet DUTs			
S0	337.1		
S1	535.7		
1 striplet DUT			
S1	435.6	524.95	434.0

from Lorenzo

Was 2 DUTs support used for single striplet test too? Which runs?

List of runs with triplets

- Good run list



from Carla

- Edro mapping

Date	Time	Run Number	Run Type	# of events	trigger type (3=tele)	# di layer	hit per layer	Minimum multiplicity	angle	Soglia	commenti
20-9-11	13:27:28	1945	Physics	7455334	3	4	1	4	0	non pervenuta	
24-9-11	8:44:27	2238	Physics	1129851	3	8	1	8	0	19	tra questo run e il precedente ci son stati run di pixels: DUT non nella stesa posizione
24-9-11	9:16:17	2241	Physics	1020689	3	8	1	8	0	non pervenuta	primo run con area trigger per 5ttc 54 0x43
24-9-11	9:40:48	2242	Physics	1132920	3	8	1	8	0	18	
24-9-11	9:58:40	2243	Physics	1001672	3	8	1	8	0	17	
24-9-11	10:30:05	2245	Physics	1053009	3	8	1	8	0	16	
24-9-11	10:39:57	2246	Physics	1099828	3	8	1	8	0	15	
24-9-11	13:33:16	2257	Physics	1087716	3	8	1	8	0	low	S1 ricentrato su fascio rispetto run precedenti
24-9-11	13:40:46	2258	Physics	1250303	3	8	1	8	-15	low	
24-9-11	13:50:51	2259	Physics	1110071	3	8	1	8	-30	low	
24-9-11	13:58:26	2260	Physics	1094737	3	8	1	8	-45	low	
24-9-11	14:05:04	2261	Physics	1133926	3	8	1	8	-60	low	
24-9-11	14:09:39	2262	Physics	1119466	3	8	1	8	-60	low	
24-9-11	14:14:16	2263	Physics	1097755	3	8	1	8	-60	low	
24-9-11	14:19:27	2264	Physics	1083987	3	8	1	8	-60	low	
24-9-11	14:27:51	2265	Physics	1089384	3	8	1	8	-60	low	
24-9-11	14:39:29	2266	Physics	1092216	3	8	1	8	-70	low	
24-9-11	14:43:20	2267	Physics	1133258	3	8	1	8	-70	low	
24-9-11	14:47:39	2268	Physics	1091658	3	8	1	8	-70	low	
24-9-11	14:51:37	2269	Physics	1129801	3	8	1	8	-70	low	
24-9-11	14:56:18	2270	Physics	1090736	3	8	1	8	-70	low	
24-9-11	15:01:44	2271	Physics	1092903	3	8	1	8	-45	low	
24-9-11	15:05:14	2272	Physics	183330	3	8	1	8	-45	low	
24-9-11	15:07:34	2273	Physics	1098622	3	8	1	8	-30	low	
24-9-11	15:12:39	2274	Physics	1108057	3	8	1	8	-15	low	
24-9-11	15:17:41	2275	Physics	1102077	3	8	1	8	0	low	
24-9-11	15:22:32	2276	Physics	1106710	3	8	1	8	0	nominal	
24-9-11	15:26:27	2277	Physics	1072699	3	8	1	8	0	nominal	
24-9-11	15:31:46	2278	Physics	1075580	3	8	1	8	0	nominal	
24-9-11	15:36:41	2279	Physics	1044868	3	8	1	8	-15	nominal	
24-9-11	15:50:11	2281	Physics	1096090	3	8	1	8	-45	nominal	
24-9-11	15:54:59	2282	Physics	1094620	3	8	1	8	-60	nominal	
24-9-11	16:01:21	2283	Physics	1062066	3	8	1	8	-60	nominal	
24-9-11	16:06:40	2284	Physics	1074747	3	8	1	8	-70	nominal	
24-9-11	16:09:46	2285	Physics	1033314	3	8	1	8	-70	nominal	
24-9-11	16:16:18	2286	Physics	1061135	3	8	1	8	-70	low	

Wrong
mapping



Angular scan,
S1 only
as DUT!
Elog entries
not so clear!

How to share information?

When an error is encountered 3 ways are possible:

- Correct the information in the database
 - ▶ no change notification;
 - ▶ everyone query the DB
- Ask a responsible (Carla?) to do that and notify the interested people
- Use the SVN repository for GoodRunLists

Step 0 -Alignment of run 2665

- repository configurations (v786)
- 50 000 evt

Laura

Alignment Parameters extracted from data
number of detectors
detElem ID
phi, theta, gamma (deg)
deltaX, deltaY, deltaZ (cm)
AlignmentParmsTag

4

1

0.271788 0 -0

-0.0246505 -0.0196675 0

2

0.288745 0 -0

-0.0134535 -0.0212168 0

3

0.00579918 0 -0

-0.0112255 -0.0032721 0

4

0.066994 0 -0

-0.0109648 -0.00313011 0

rep

Alignment Parameters extracted from data
number of detectors
detElem ID
phi, theta, gamma (deg)
deltaX, deltaY, deltaZ (cm)
AlignmentParmsTag

4

1

0.258223 0 -0

-0.0246577 -0.0196499 0

2

0.272616 0 -0

-0.0134526 -0.0212108 0

3

0.010902 0 -0

-0.0112197 -0.00327846 0

4

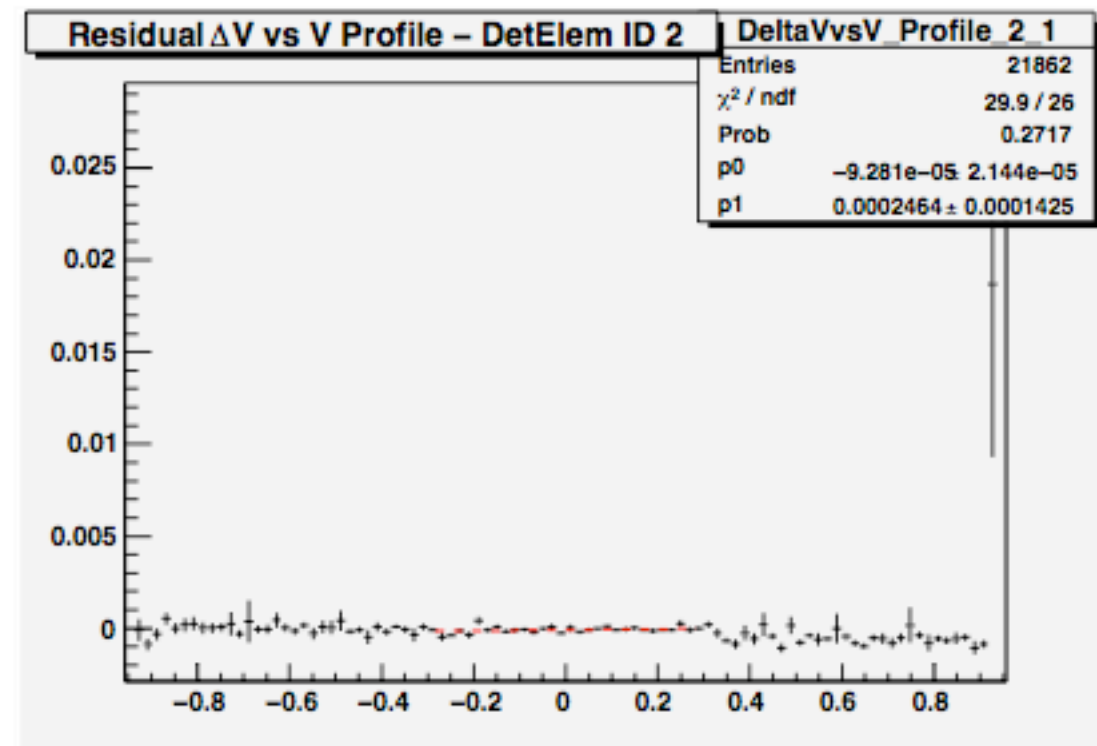
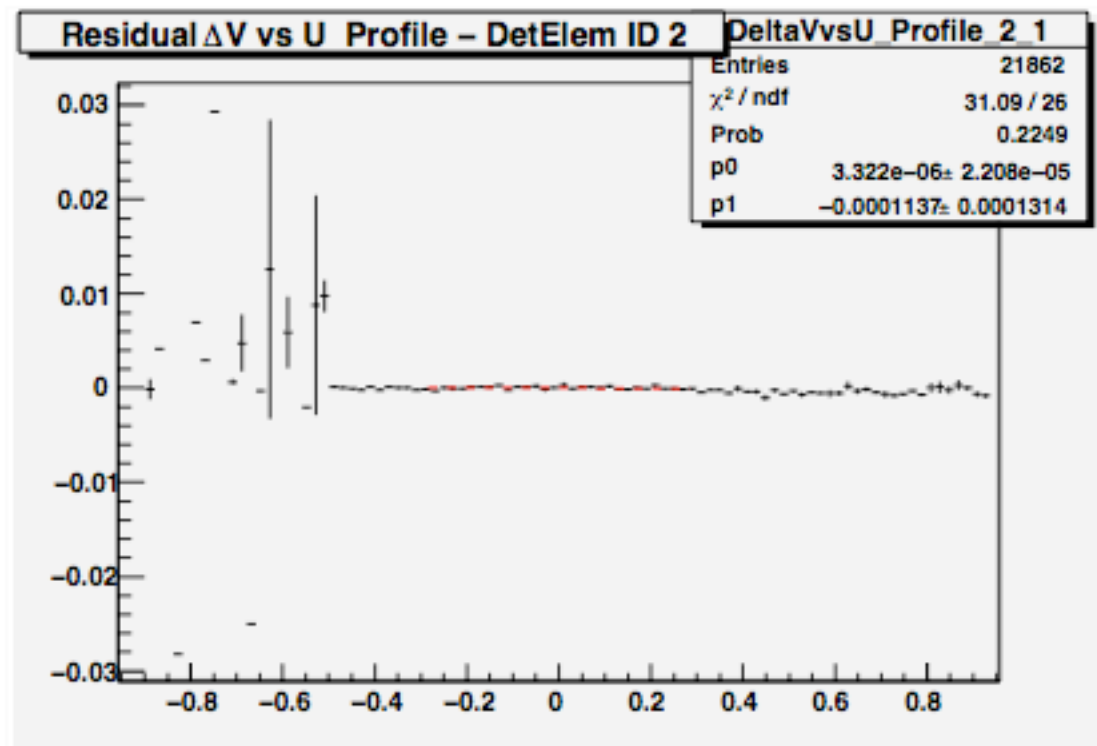
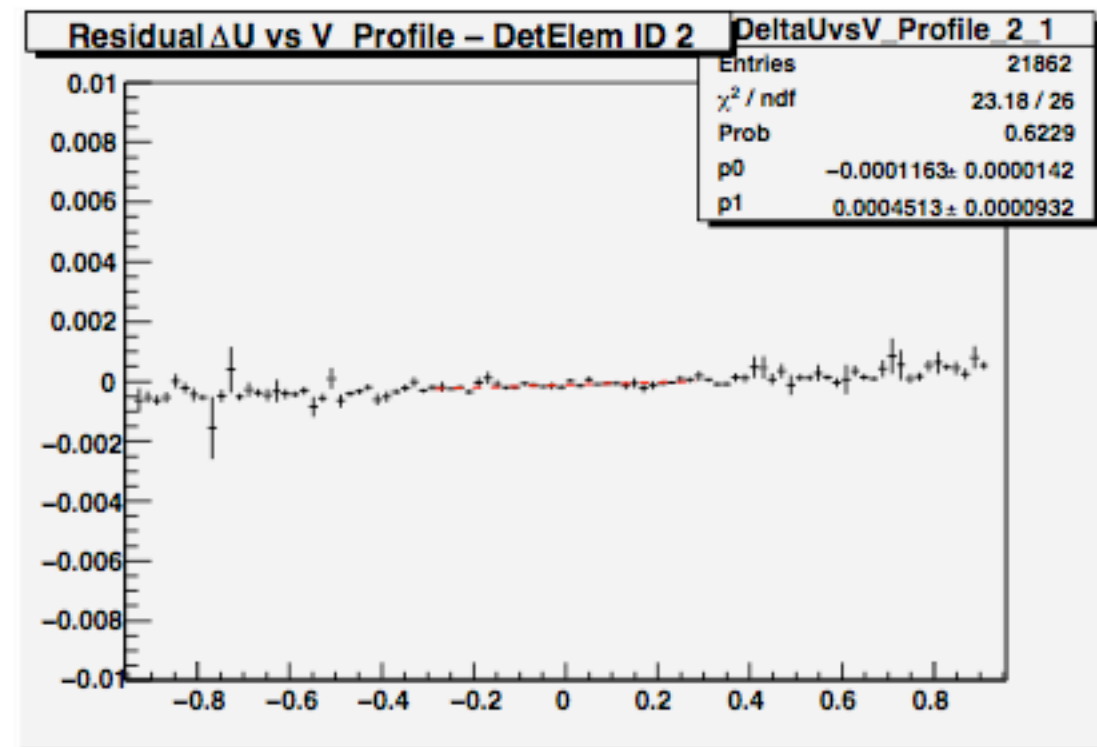
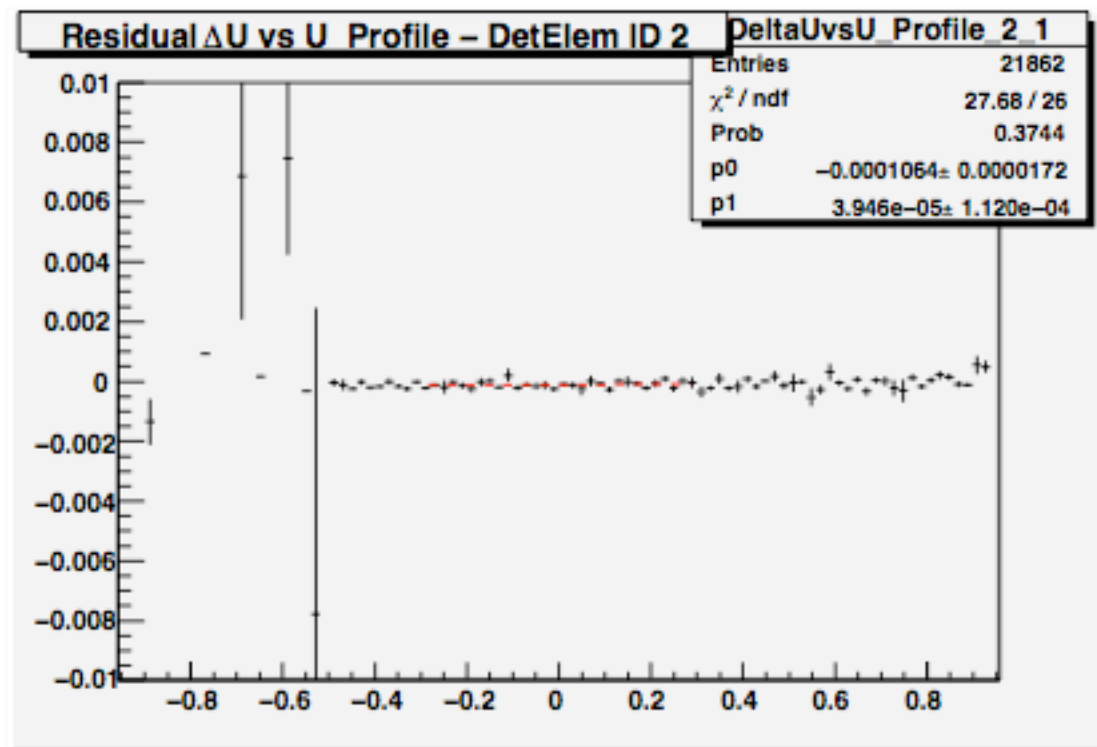
0.0623404 0 -0

-0.0109731 -0.00312442 0

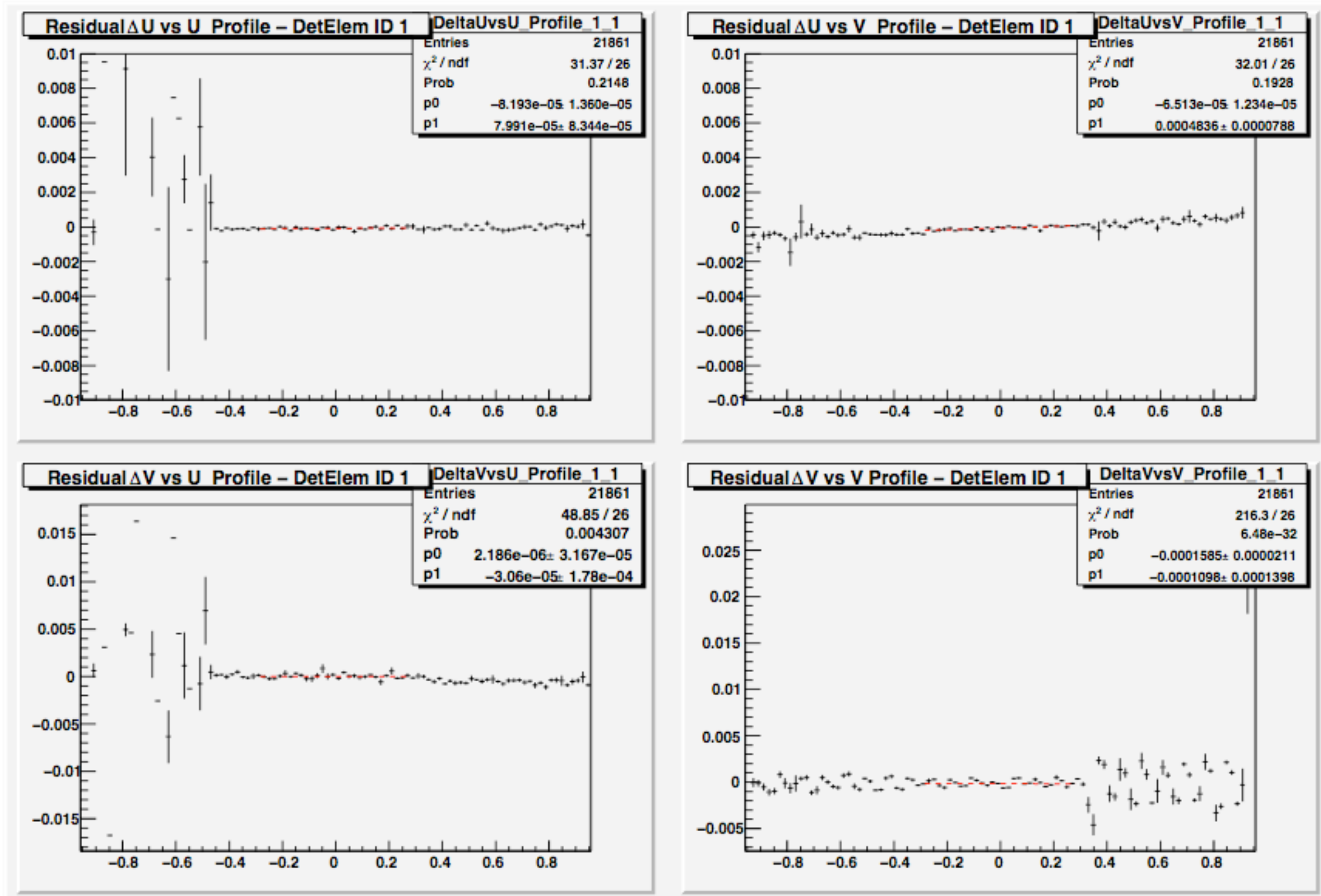
$\Delta x_{\text{rep-L}}$	$\Delta x/x$
-0.0136	5%
-0.016	6%
0.00510	47%
-0.00465	7%

what precision is requested ?

Residuals of telescope T2



Residuals of telescope T1



NEXT STEPS

- Keep the geometry under control
- Understand step 0
- Align and reconstruct runs with 1 triplets in nominal position and threshold
- Study angular scan