

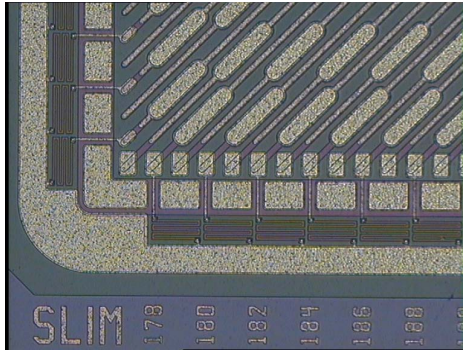


Short Update on Tripletts Analysis (Beam-Test Sept. 2011)

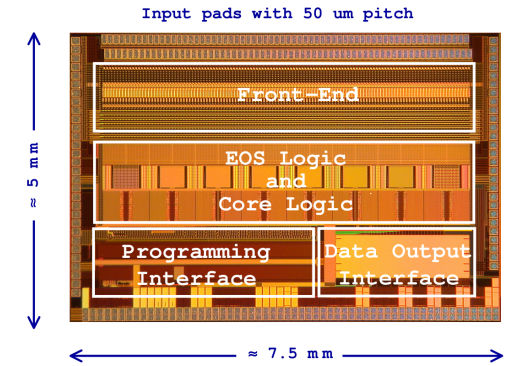
Lorenzo Vitale

University & INFN Trieste

Carlo Stella (Udine) & Laura Fabbri (Bologna)



Outline



- In Sept. 2011 Striplets with FSSR2 RO were put on Beam at CERN to check efficiency at large incident angles and lower threshold

News since last meeting:

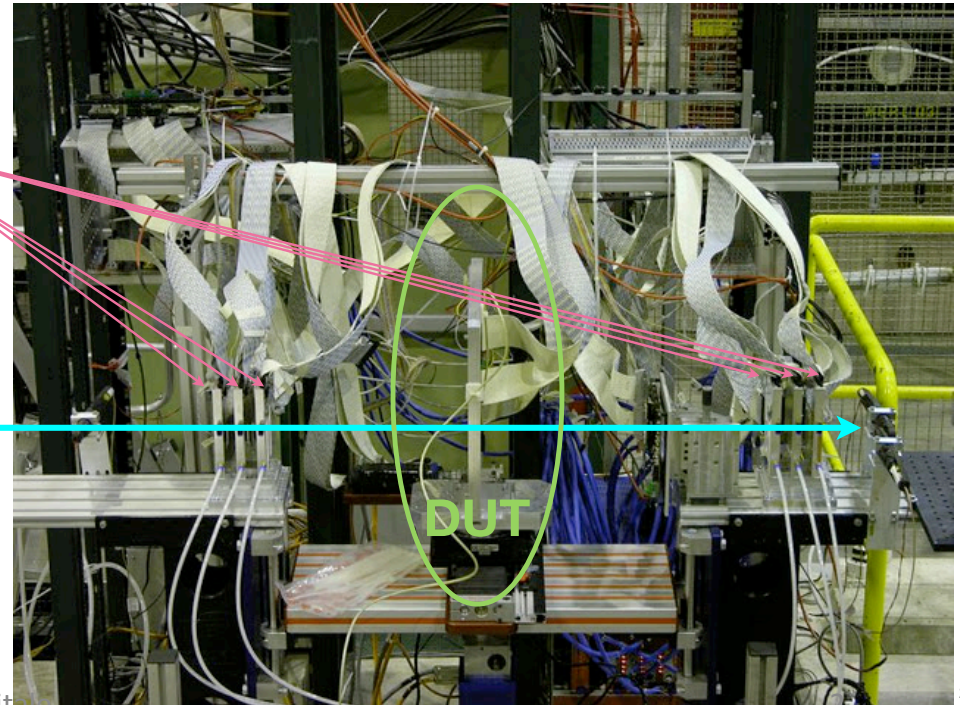
- now also 70° aligned
- Several cross checks
- Lower thr. runs ongoing

SPS@CERN

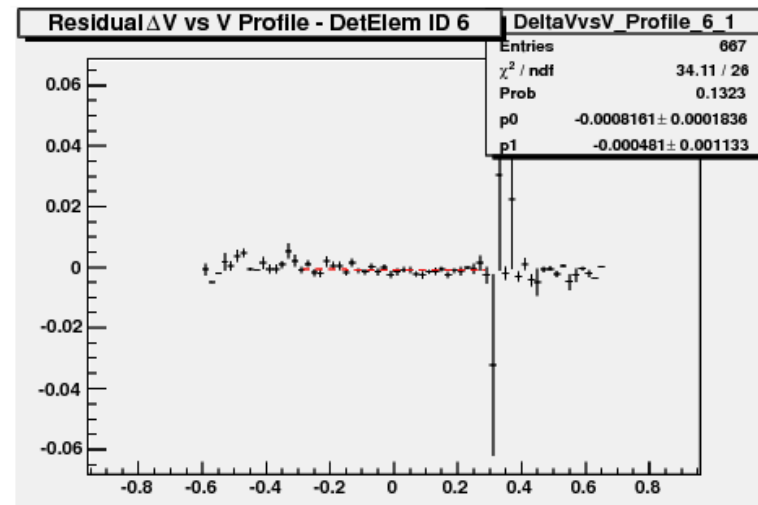
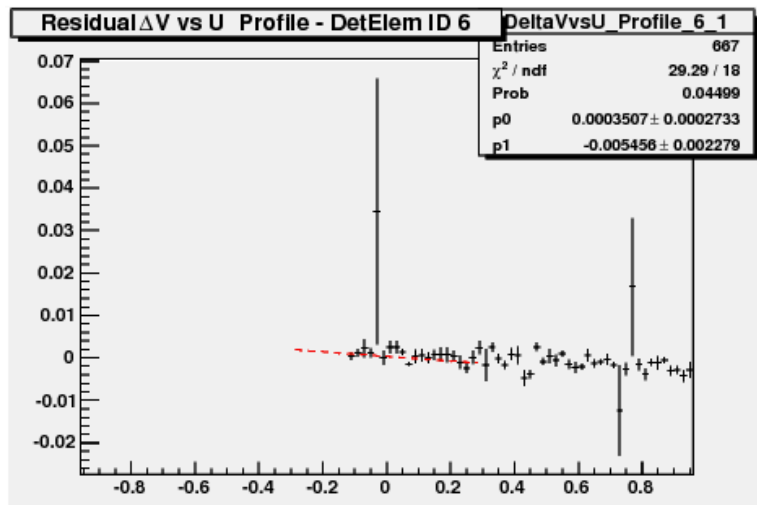
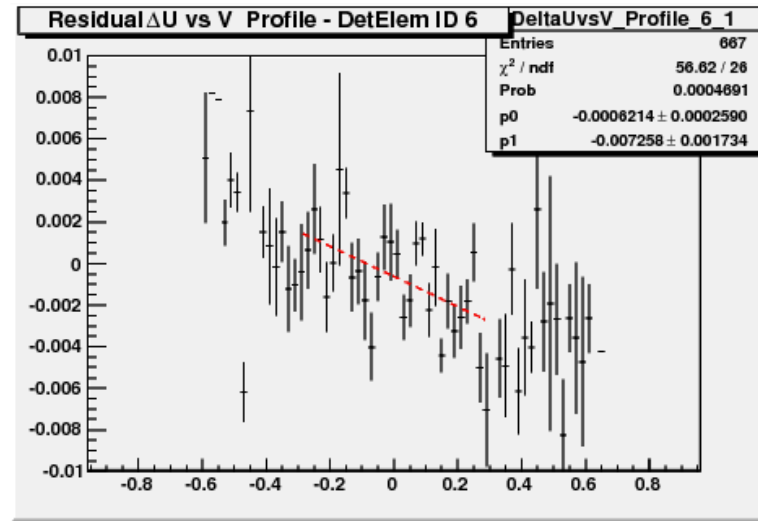
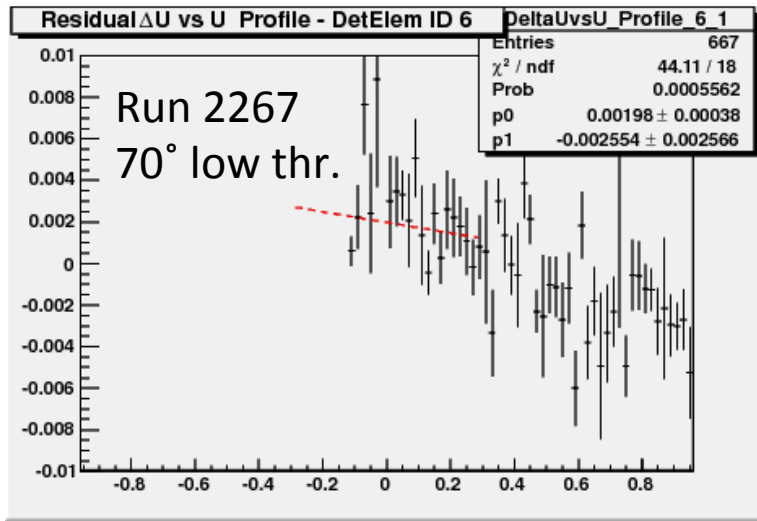
telescope

120 GeV π^{\pm}

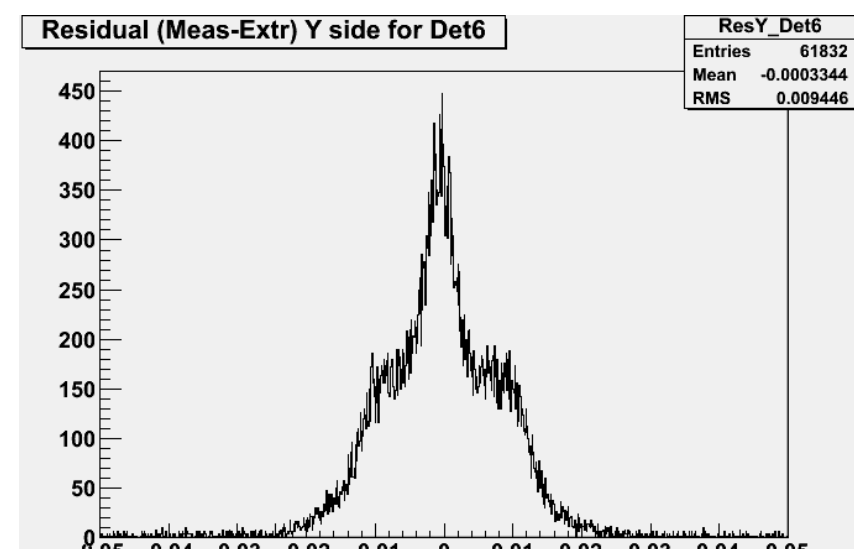
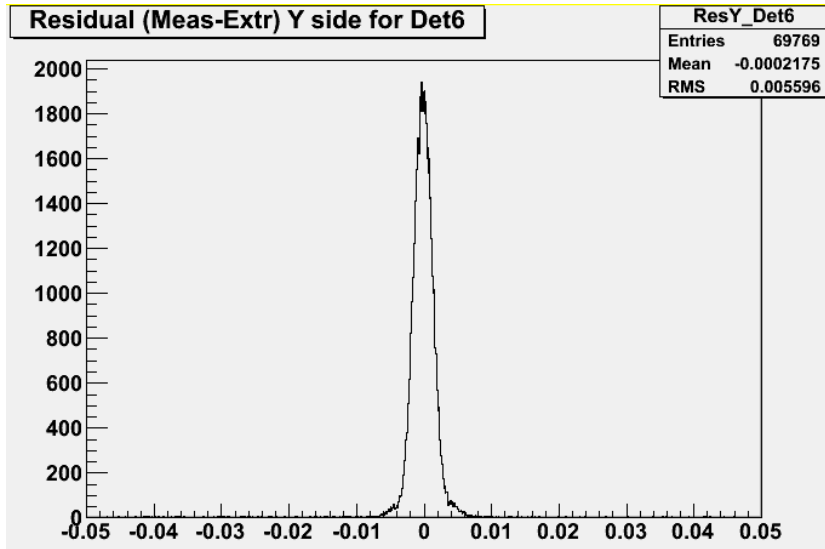
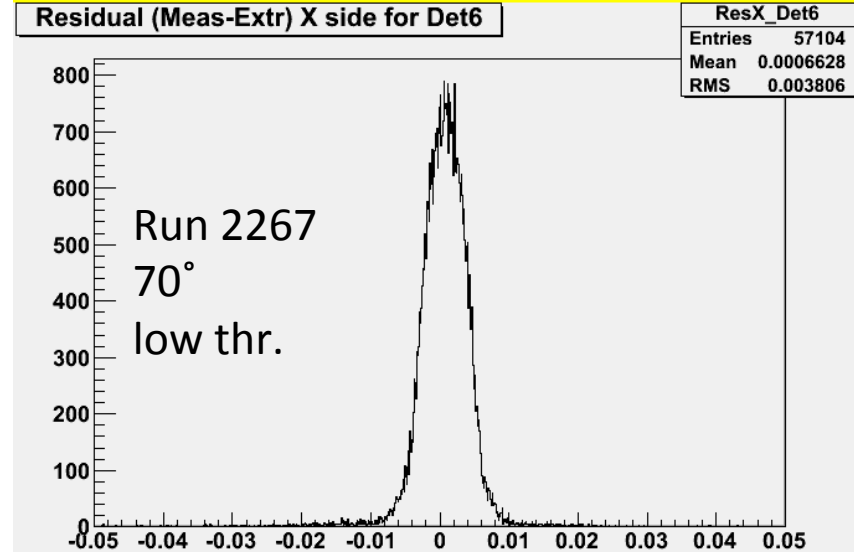
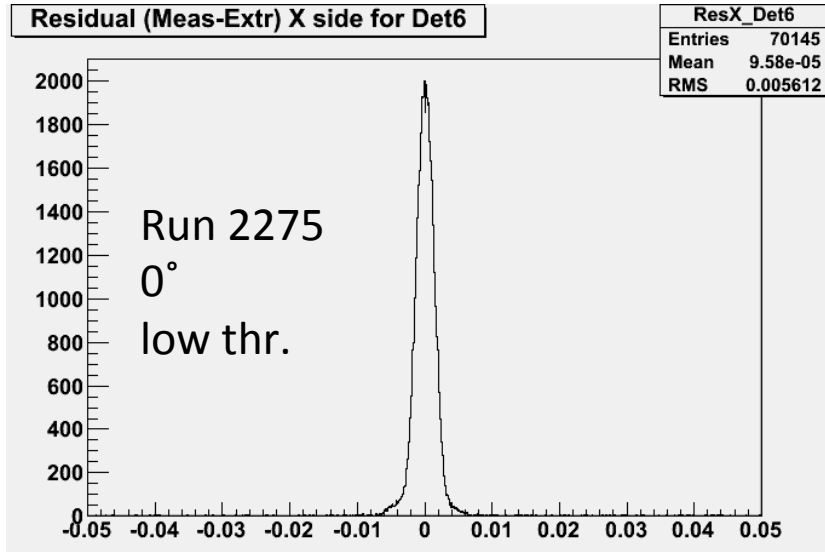
DUT



60-70 were hard to be aligned, now ~ok



Residuals



Efficiency procedure

- Exclude dead/noisy channels (+- 1 adjacent)
- Restrict in a fiducial region (see previous presentations)
- In U/V coordinates separately, select the closest cluster to the extrapolated track position
- Background seems to be very small even with low threshold (<0.02% from extrapolated fit of the tails)
- Allow angle dependent cut to account for larger cluster size (and worse resolution)

$$\epsilon_u = \frac{n_{\text{clusters}} \mid |\text{clustUpos} - \text{intUpos}| < 56\mu\text{m}/\cos(\text{angle})}{n_{\text{int}} \subset \text{active U region}}$$

Efficiencies (%) vs incident angle

Incident angle	Eff_U High thr.	Eff_U Low thr.	Eff_V High thr.	Eff_V Low thr.
0	99.6	99.6	99.4	99.6
15	99.6	99.6	99.5	99.7
30	99.6	99.7	99.5	99.7
45	99.8	99.7	99.4	99.7
60	99.8	99.7	99.2	99.7
70	99.9	99.9	99.7	99.9

Conclusions

- Analysis of 2011 Beam Test of a triplets module with FSSR2 RO at large incident angles and lower thresholds is progressing fine
- Efficiencies are above 99.2% at all incident angles and on both sides (above 99.6% with lower thresholds)
- Several cross done and some other ongoing
- Should we publish it soon?

Backup Slides

Eff./Reso. For Striplets in 2008 Beam Test

ϑ in degrees	p-side Eff within $80\mu\text{m}^*$ ($80/\cos\vartheta$)	n-side Eff within $80\mu\text{m}$ ($80/\cos\vartheta$)	p-side Spatial Resolution	n-side Spatial Resolution
0	98.2	98.3	13.6	14.1
5	97.2	97.9	12.9	13.2
10	97.7	97.8	11.5	12.3
20	97.8	97.9	7.8	9.8
30	98.0 (98.0)	98.2 (98.2)	9.0	10.4
45	98.0 (98.3)	96.7 (97.1)	15.7	17.8
60	95.5 (98.0)	90.5 (97.2)	To be defined	To be defined
70	78.9 (98.9)	78.8 (98.7)	To be defined	To be defined

At 45° start deteriorating