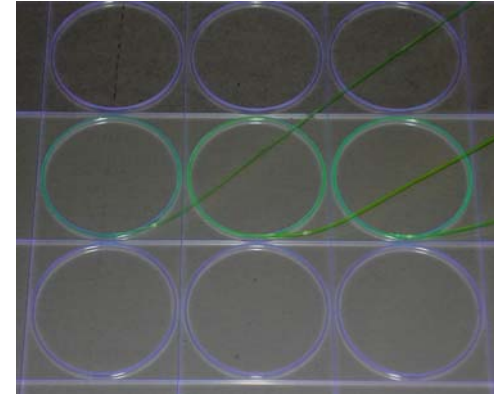


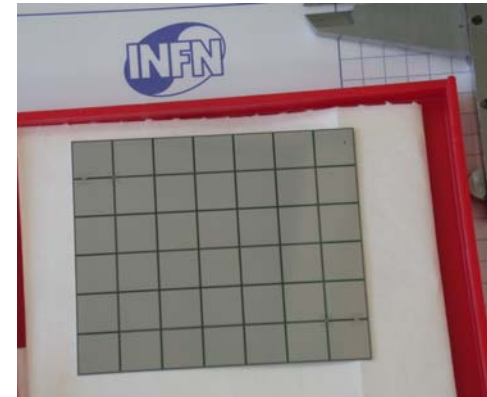
LCcal

Realizzati nel 2002:

- Produzione placche di scintillatore
- Lucidatura/piegatura fibre
- Montaggio primi 4 strati 2 (X_0)
con incollaggio fibre chiare (Test)



- Produzione primi rivelatori pad Si
- Montaggio completo Si su PCB con chip Read Out (Test)
- Test su Fascio (SPS), 2 X_0 + Si



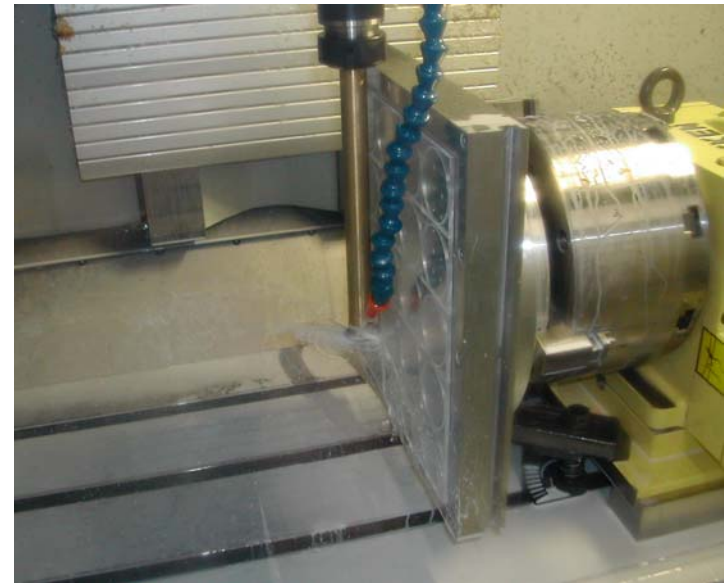
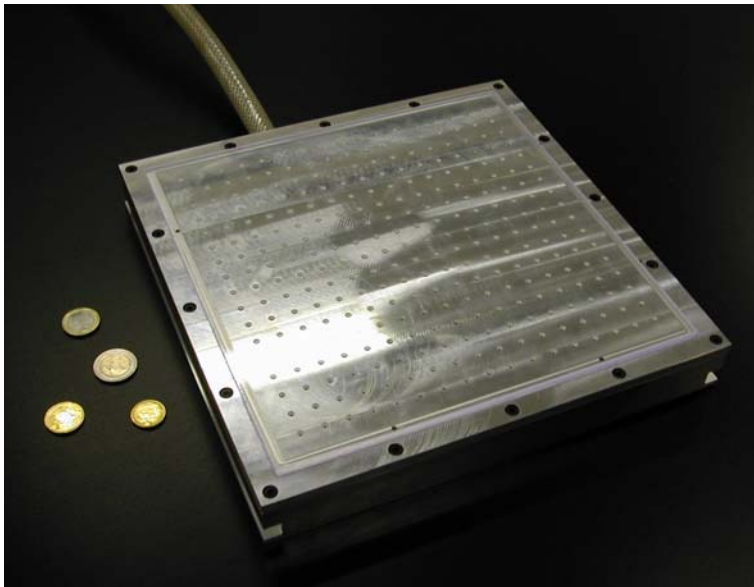
Stato della produzione

Scintillator tiles:

3 mm Kuraray SCSN-61 (25x25 cm²)

3 mm Bicron BC-408 (25x25 cm²)

Machined with vacuum plate as holder



Whole produzione (>50 tiles) done

Stato della produzione

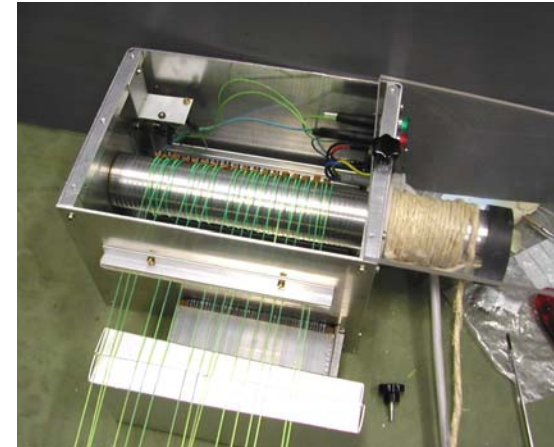
Fibres:

Kuraray 1mm d. Y11 300 ppm multicladding

Face polished and aluminized by
sputtering



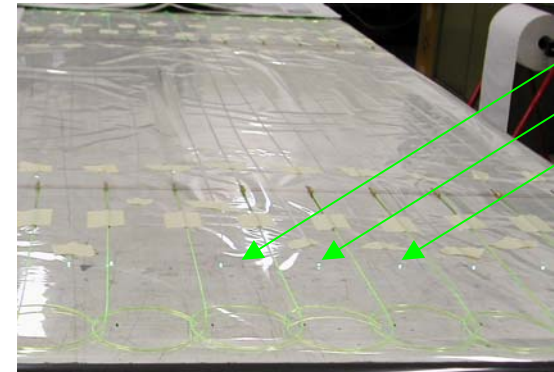
To make the 2.4 cm radius curvature :
middle temperature(50⁰-70⁰) oven



Splicing going on :

>3 ph e⁻ /m.i.p./tile obtained

stable in >30 day time



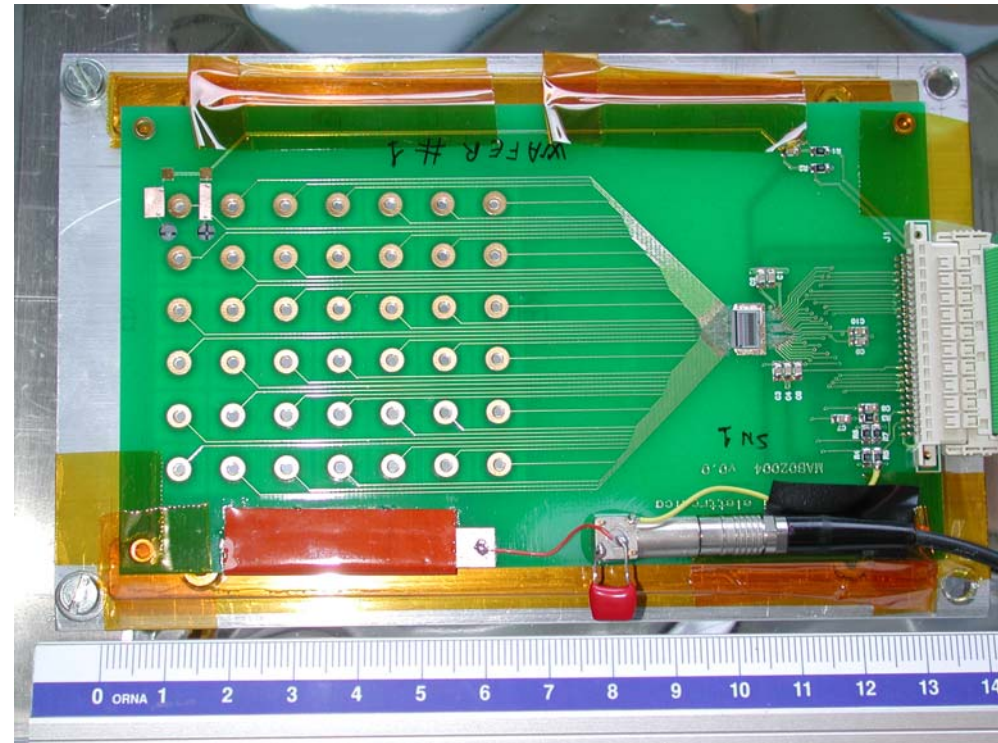
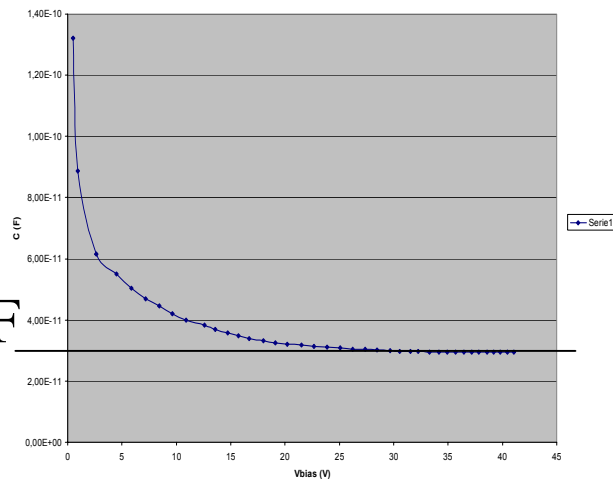
Stato della produzione

Si pad detectors:

1 detector fully mounted and tested

Full depletion at <30 V

C vs V_{bias}



20 detectors produced by ITE (Warsaw) with reasonable performance (under test now)

Stato della produzione

Detector assembling:

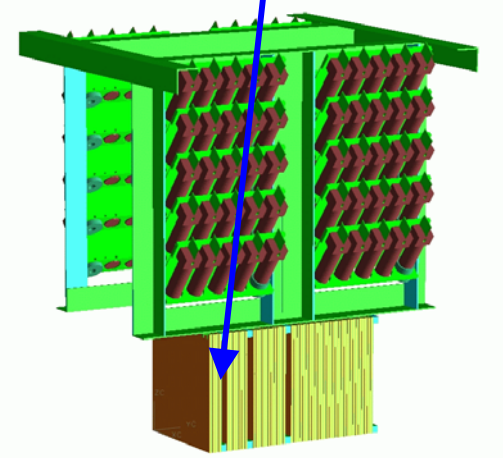
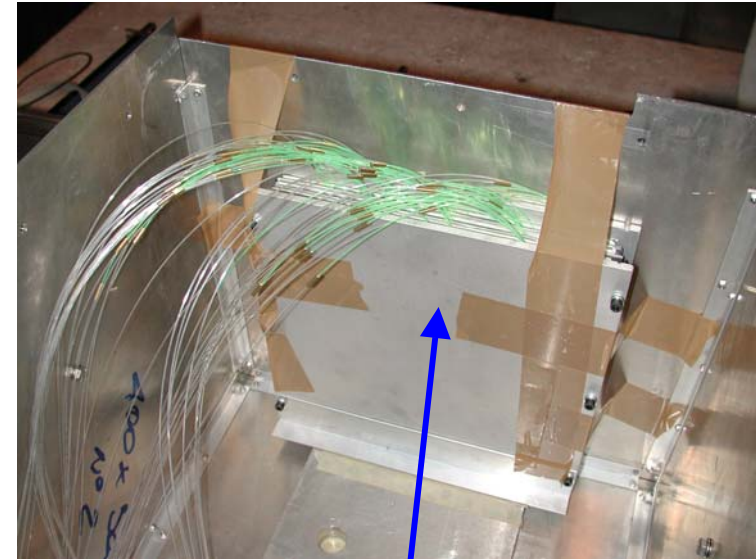
First segment ($2 X_0$) completed

Pb plates produced (>50)

Fiber insertion , tile assembling up to 45 Pb/Sc layers:

starts in september

Mechanical support for beam test
to be builded in Frascati



Test beam:* risultati

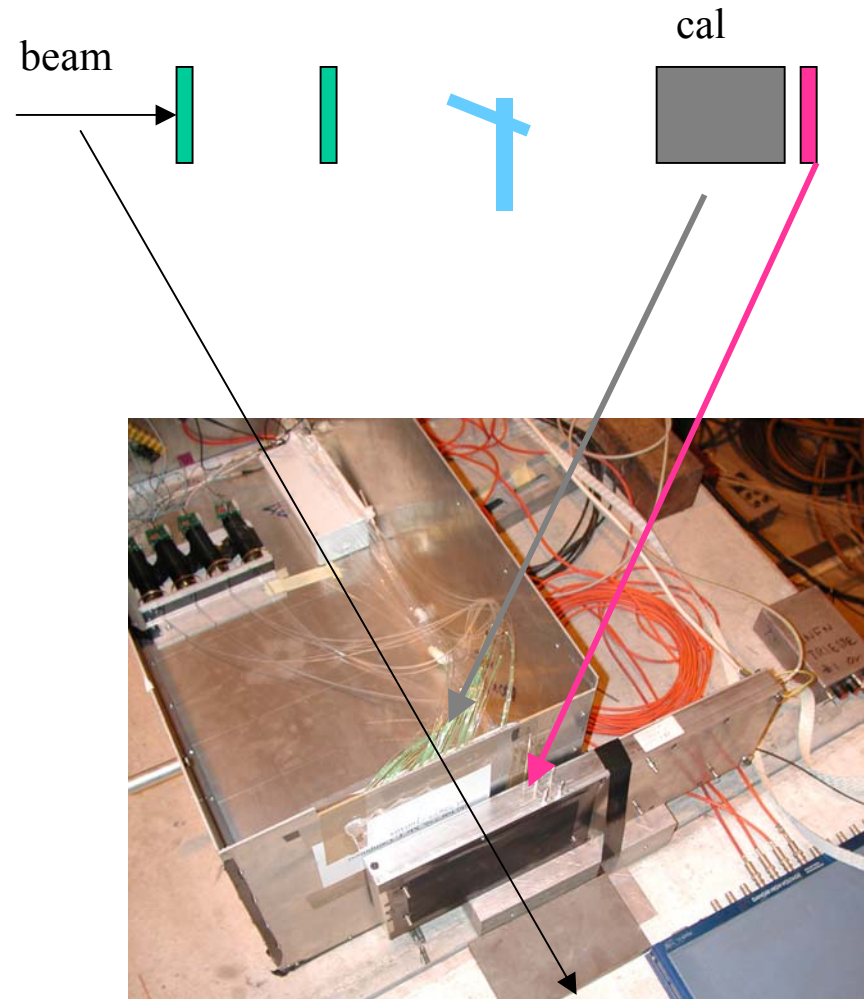
Set up:

- 2 planes Si μ strip telescope
- 2 trigger Scintillators
- Calorimeter first segment ($2 X_0$)
read by PM
- 1 Si pad detector

e^- 40 / 50 GeV

π 50/150 GeV (used as m.i.p.)

*CERN SPS H4

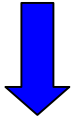


Test beam: risultati CALORIMETRO (2.1 X₀)

4 layers

m.i.p. → check light output and uniformity in Light collection:

Ratio signal/sigma → lower limit for photoelectrons

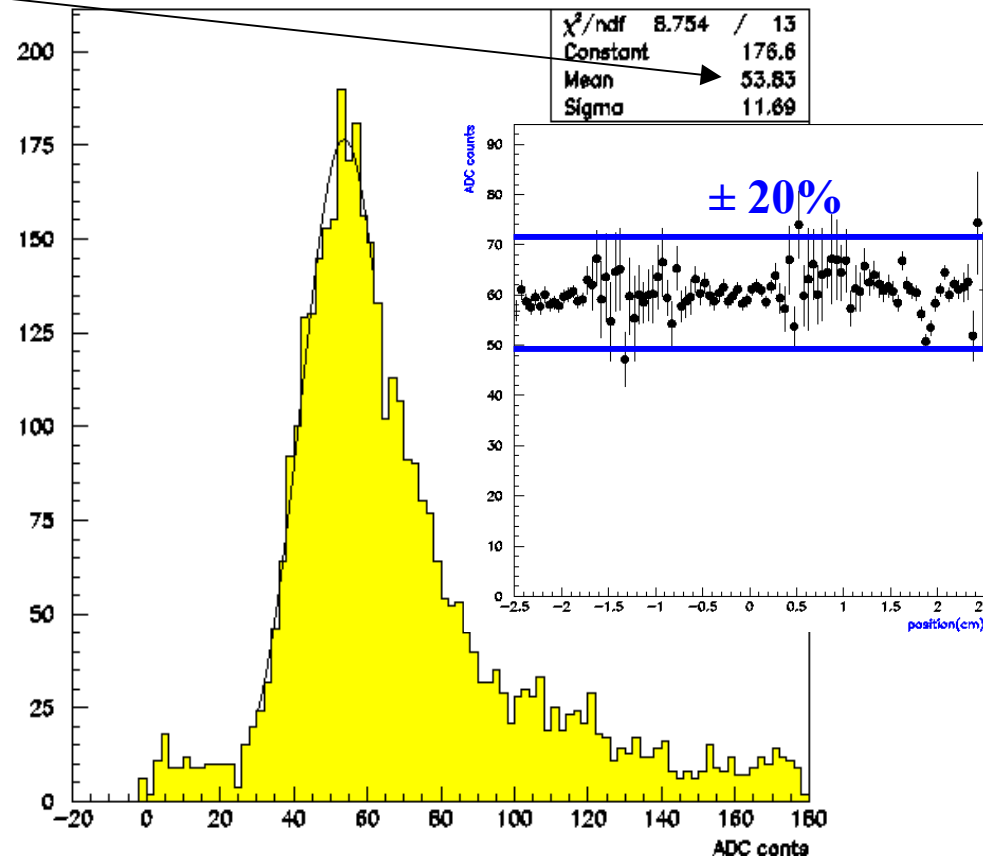
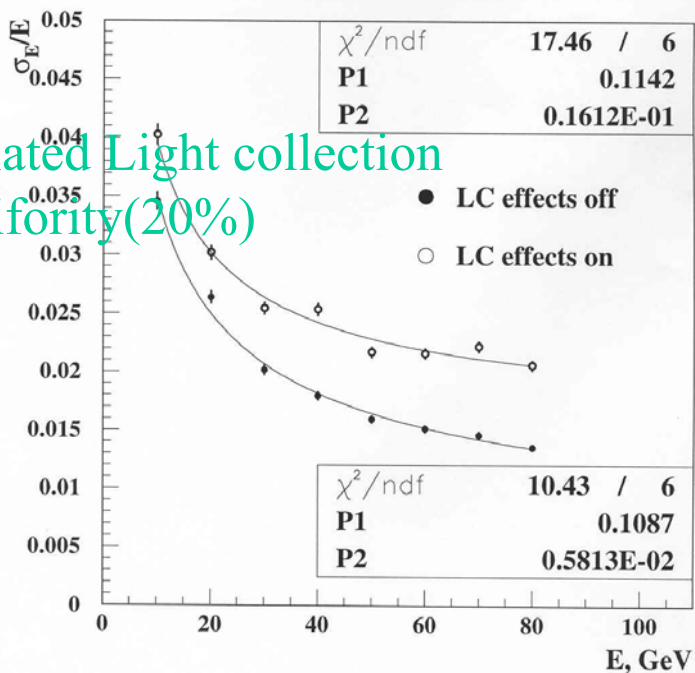


$N_{\text{phe}} > 5.1$ /layer

→ cal(45layers): >220 phe/m.i.p.

good uniformity:

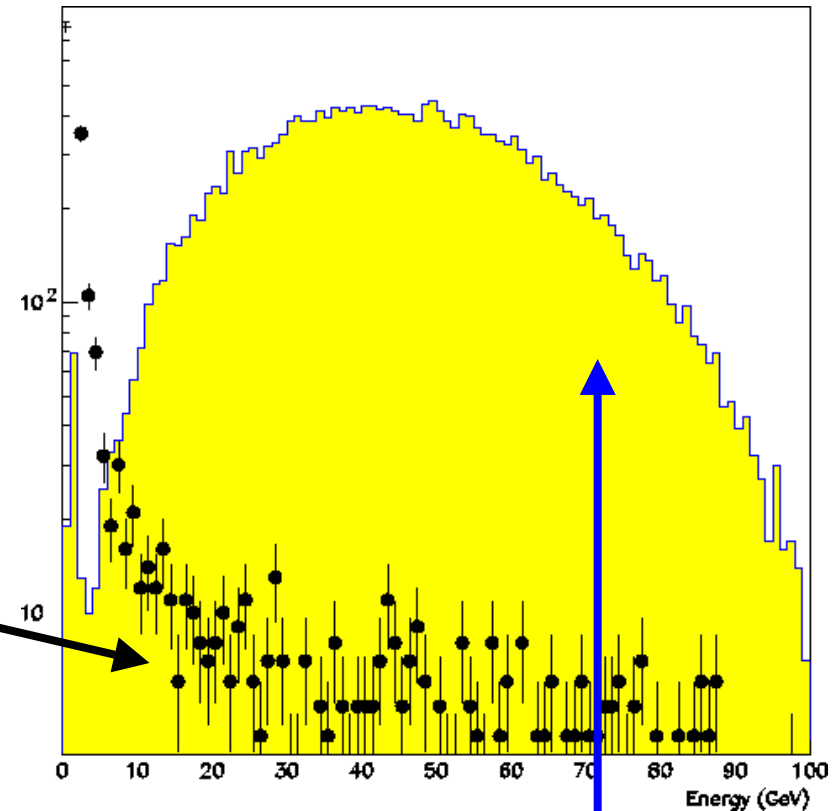
Simulated Light collection
disuniformity(20%)



Test beam: risultati CALORIMETRO (2.1 X₀)

Too few layers to give Energy resolution but enough to show e/ π separation

150 GeV π

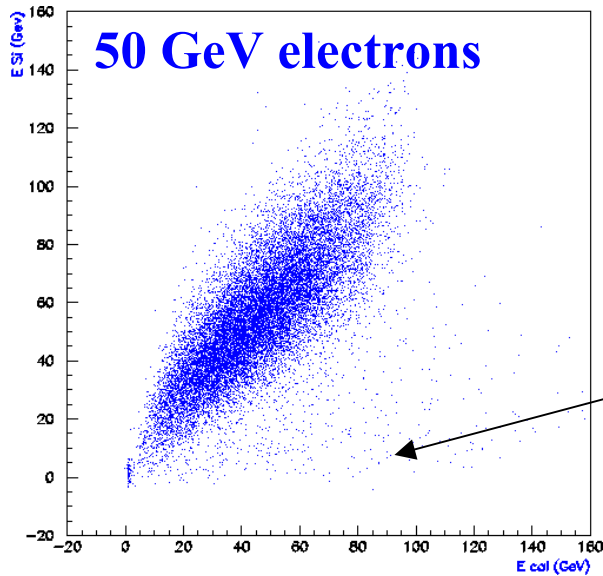


50 GeV electrons

Test beam: risultati Si pad detector

m.i.p signal >4 sigmas

(coherent noise subtraction not optimized)

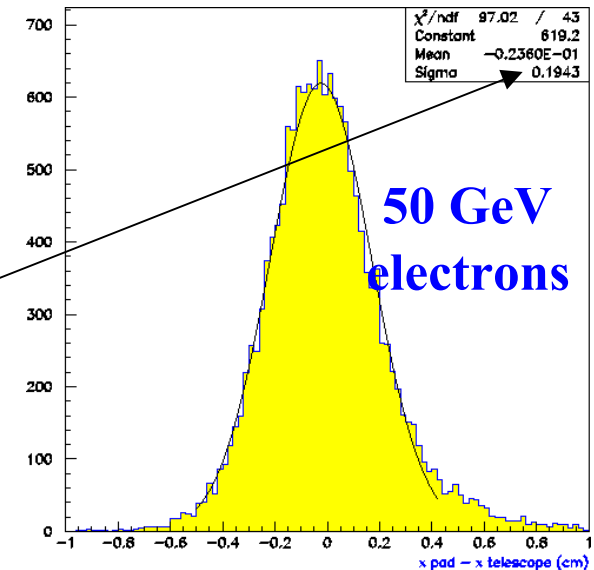
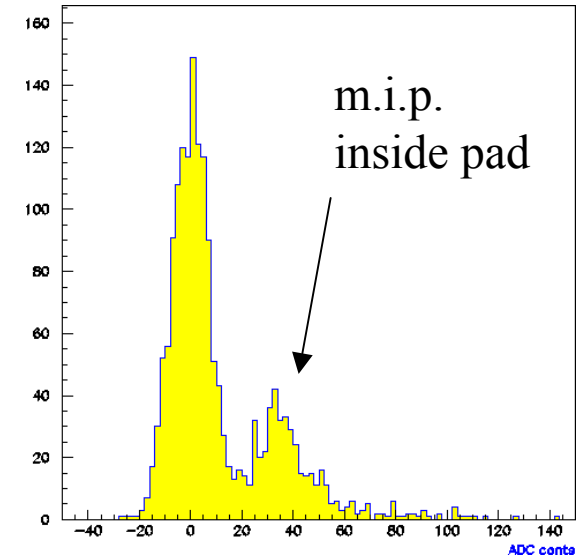
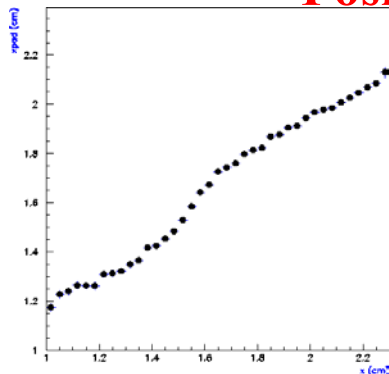


No saturation!

Out of detector
($6.3 \times 5.4 \text{ cm}^2$)

Position resolution $< 2\text{mm}$

Correction for
pad dimention
not included:



Da finire nel 2002

- Incollaggio fibre (quasi finito)
- Montaggio rivelatore (2 settimane+ meccanica)
- Montaggio rivelatori Si (ditta esterna)
- Mother board per Si
- Realizzazione supporto meccanico (Frascati)
- Test rivelatore completo (a Frascati)
- Acquisto tungsteno

2003

- Acquisto PM mancanti (**richieste Mat. Cons. 4k€ Pd+ 5k€ LNF**)
- Sostituzione Pb/W
- Conclusione test Frascati (**richieste M.I. 3k€ Pd +1k€LNF**)
- Test su fasci di alta energia :CERN/DESY (**richieste M.E. 5k€ Pd+5k€LNF**)