Cosmic Rays Data Acquisition

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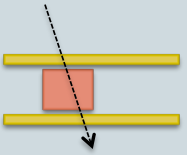
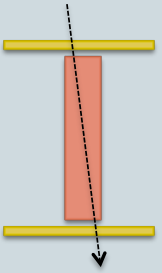
Data Acquisistion Configuration

- One LYSO crystal (2x2x20 cm^3)
- Trigger system with two finger scintillators
- Two possible configuration:
  - Horizontal : 2 cm -> expected energy deposit for a MIP ~28MeV

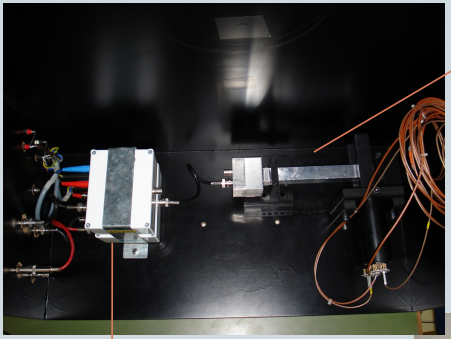


  - Vertical : 20cm -> expected energy deposit for a MIP ~280MeV



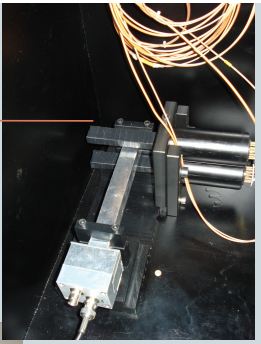
- ReadOut:
  - 2 Hamamatsu APD (0.5x0.5 cm^2 each)
  - PiN stopped working since the BTF Testbeam (not understood the reason yet)
  - Cremat Charge Sensitive Preamplifier (1.4V/pC)
  - Cremat Shaper (100ns shaping time)

Data Aquisition Configuration

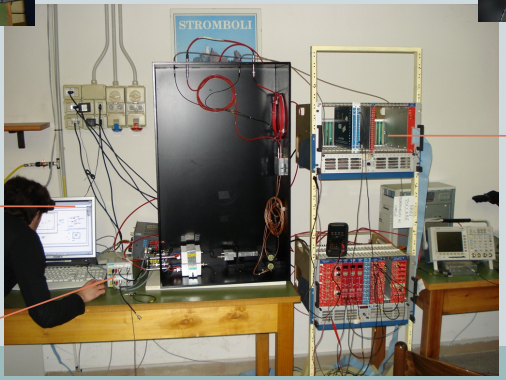


LYSO Crystal

Scintillators Trigger



Charge Sensitive
Preamplifier (1.4V/pC)

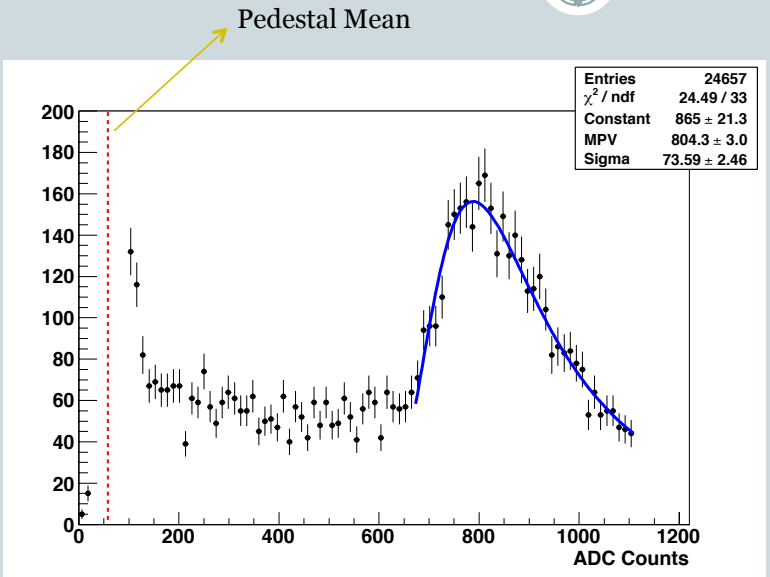


10bit ADC

LabView

Shaper (100ns shaping time)

First Preliminary Result



- 2 Days Acquisition
- Simple Landau Fit

Conclusion

- System is working very well
- Very low rate (~2/3 events for minute)
- More data (also for vertical acquisition) will be avaible soon
- Good system to study different read out :
  - Cremat CSP CR110 and CR111
  - Hamamtsu CSP H4085
  - Discrete components CSP whit low noise JFET
  - …