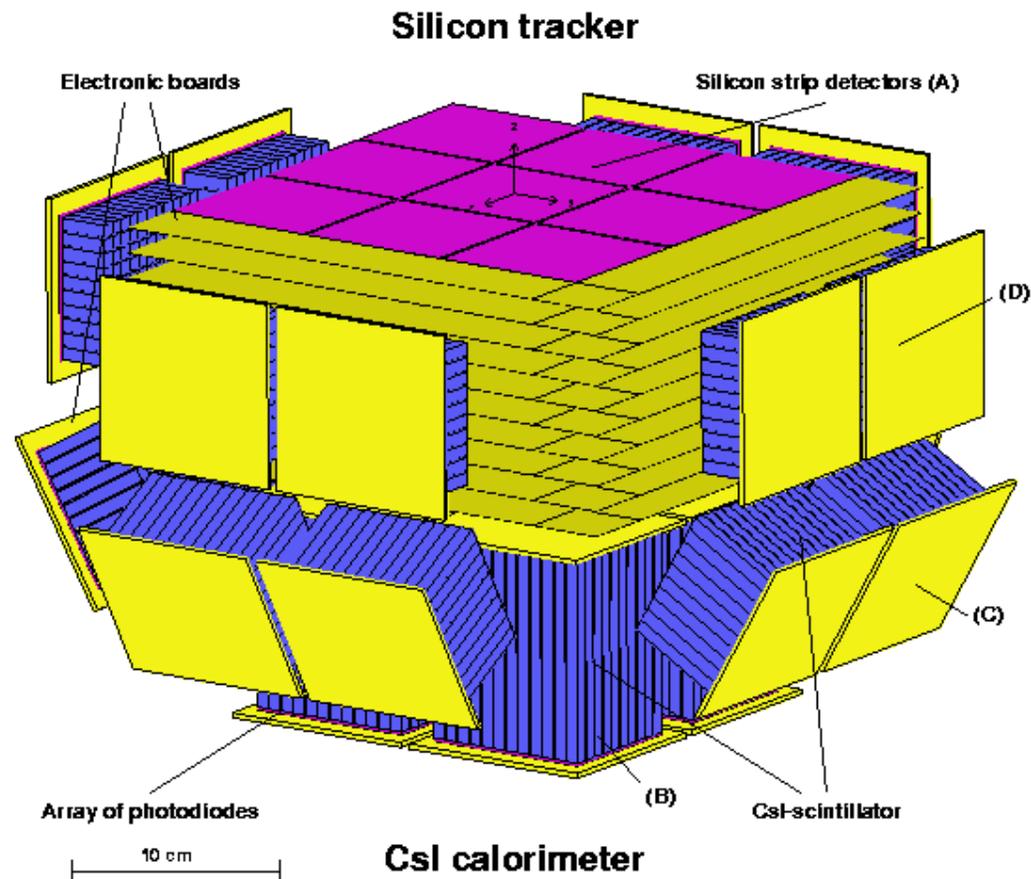




MEGA Prototype I

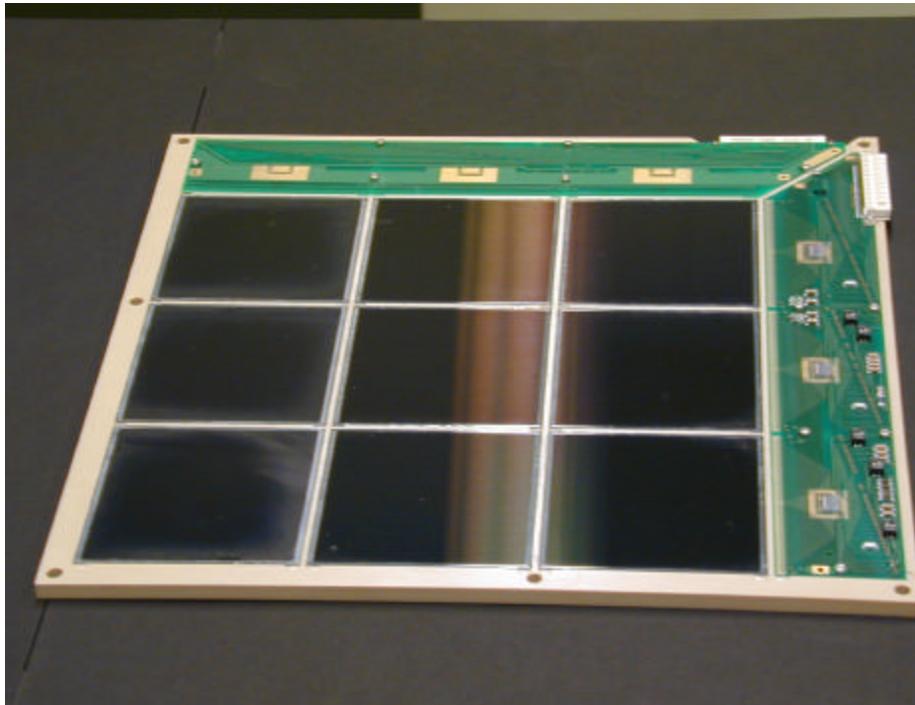
Status and Operation of current Hardware



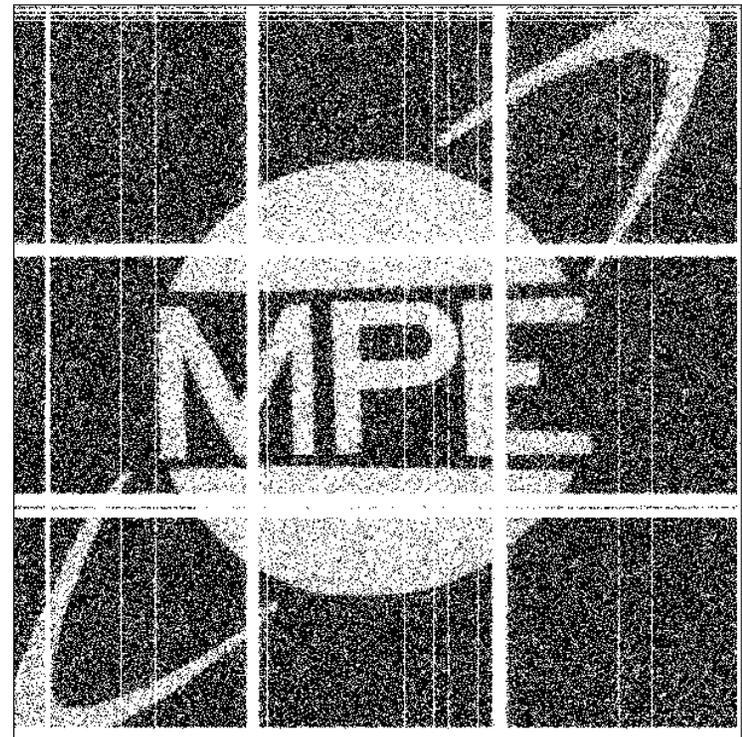


The Tracker (D1)

3x3 silicon strip detectors with FEE



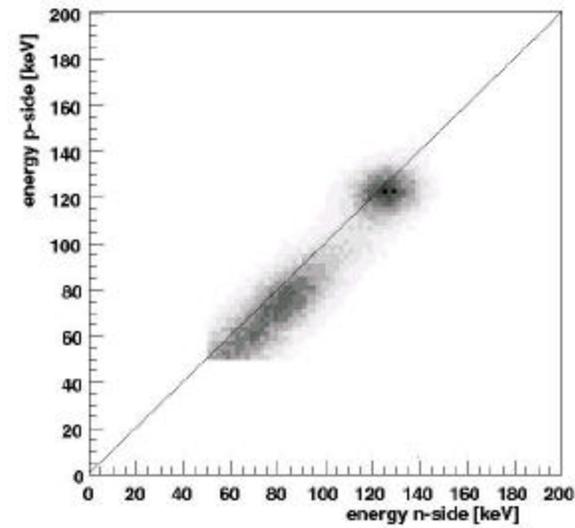
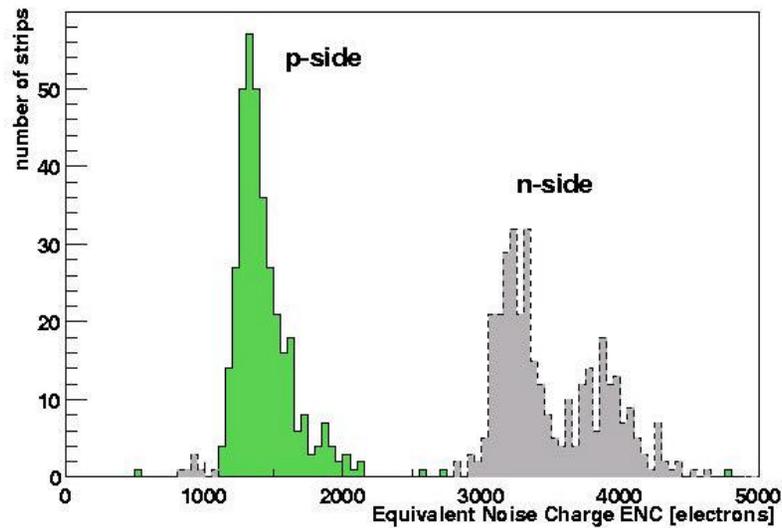
Shadow of a lead mask



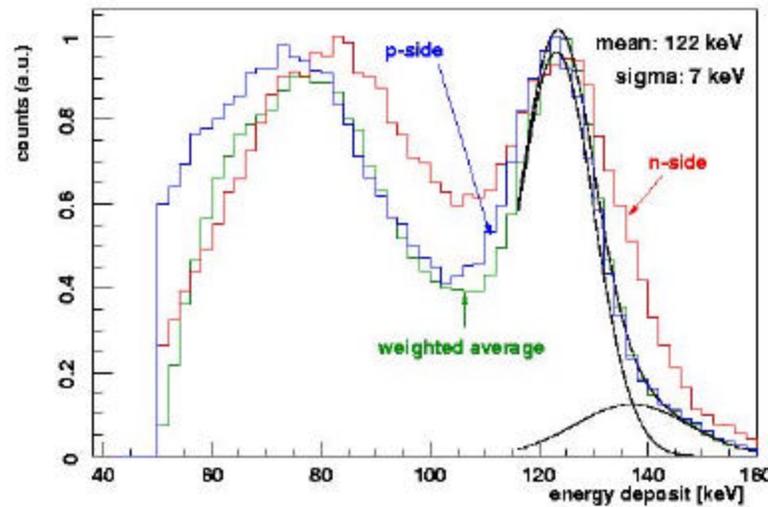


Performance of D1-Layers

noise



p-side vs.
n-side



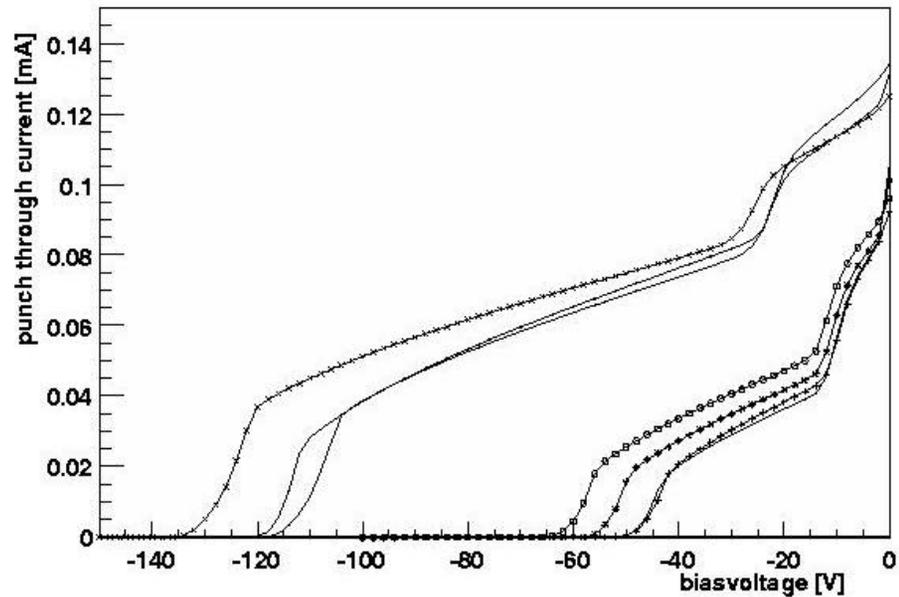
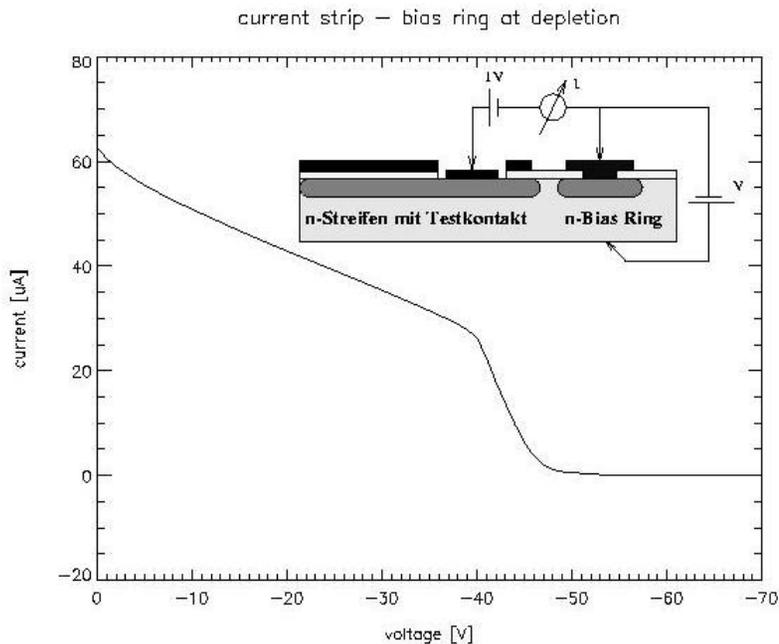
energy
resolution



Depletion problem of some D1 layers

Measurement of depletion voltage

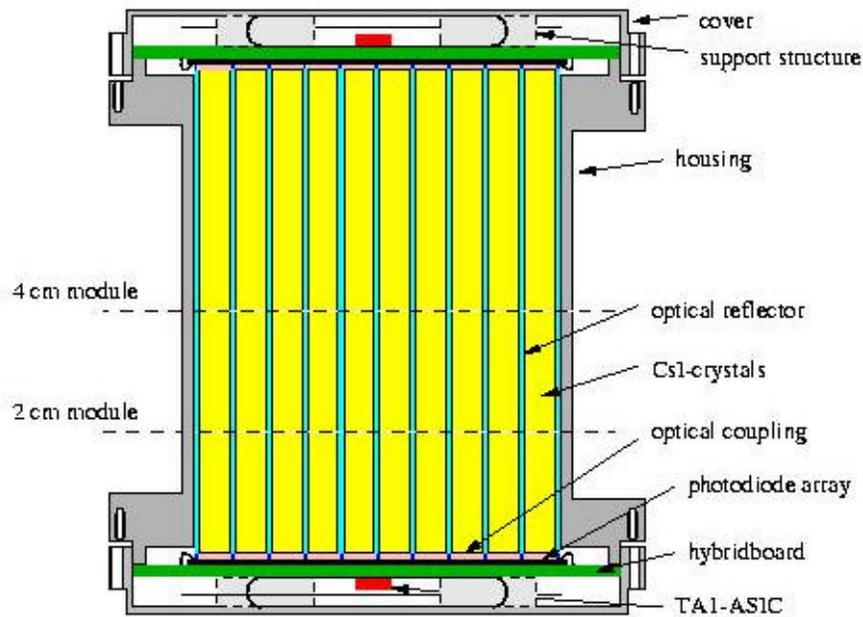
Some Layers require higher bias voltages for full depletion than specified



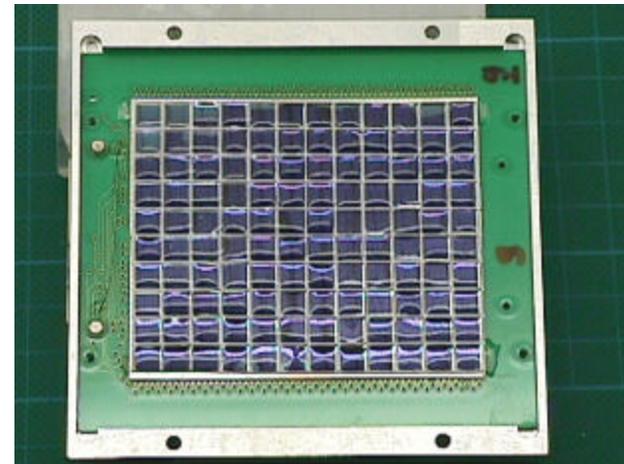


The Calorimeter (D2)

Cross section of a D2 module



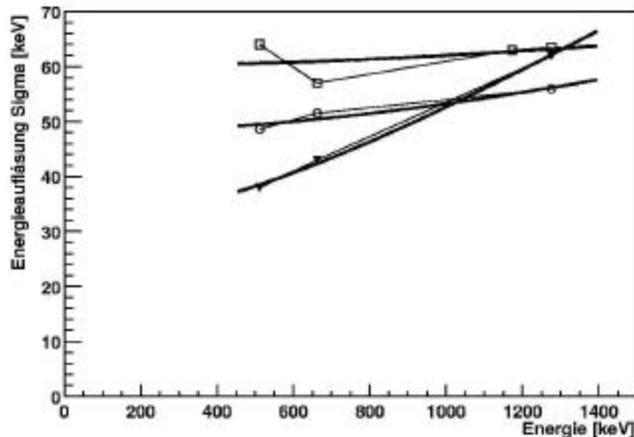
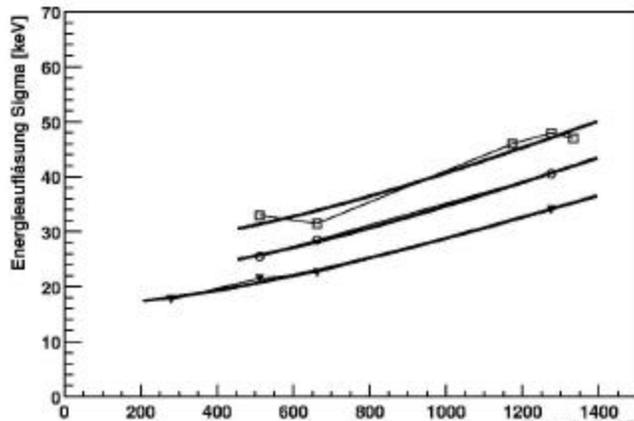
Mounting of a D2 module



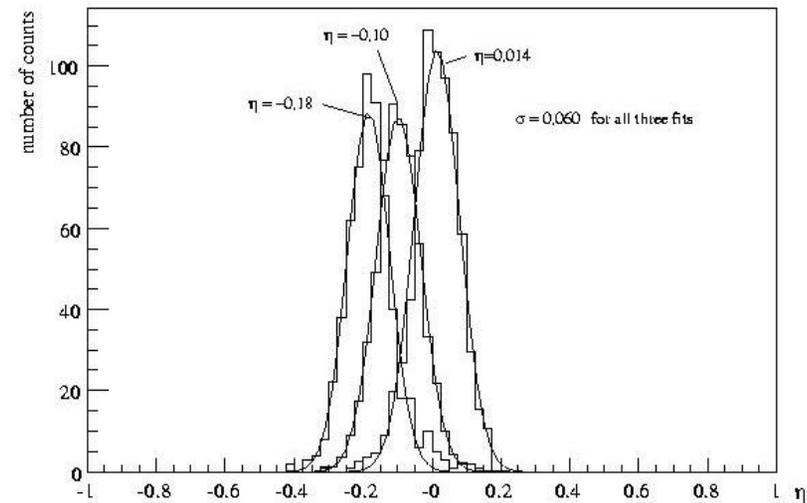


D2 Performance

Energy resolution of the 8 cm, 4 cm and 2 cm blocks:



Spatial resolution in z-direction of the 8 cm blocks is " 2 cm

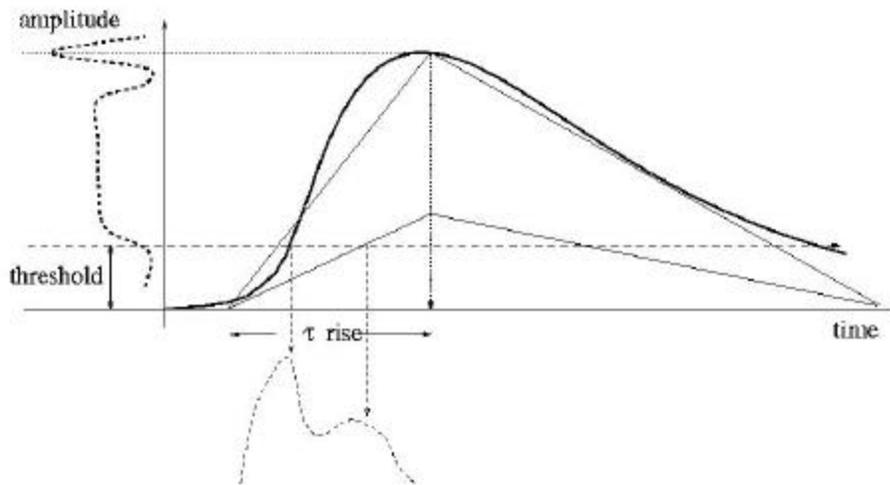


Source (^{137}Cs) collimated on 1 cm, 4 cm and 7 cm.



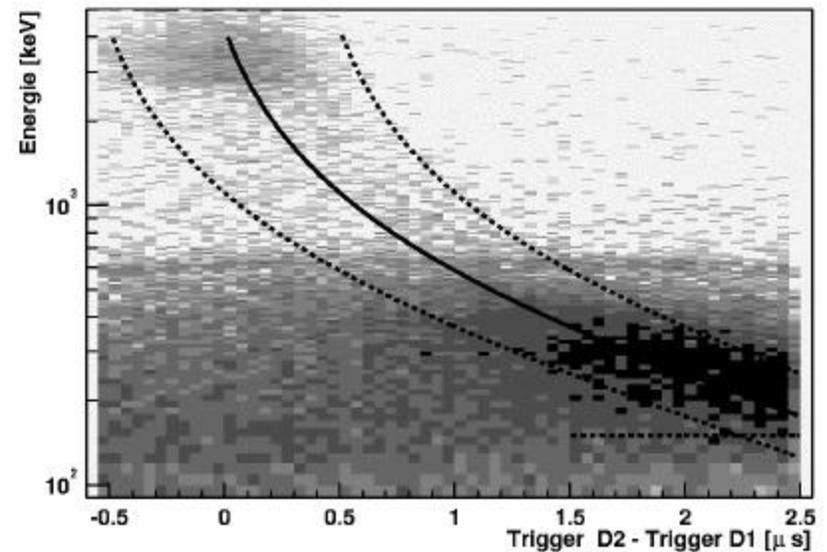
Timewalk of D2

Long shaping time ($2 \mu\text{s}$ for CsI(Tl)) combined with simple level trigger causes time walk:



The sample time of the D2 pulse is derived from D1 trigger (low time walk)

The coincidence window has to be " τ rise in order to set no energy window



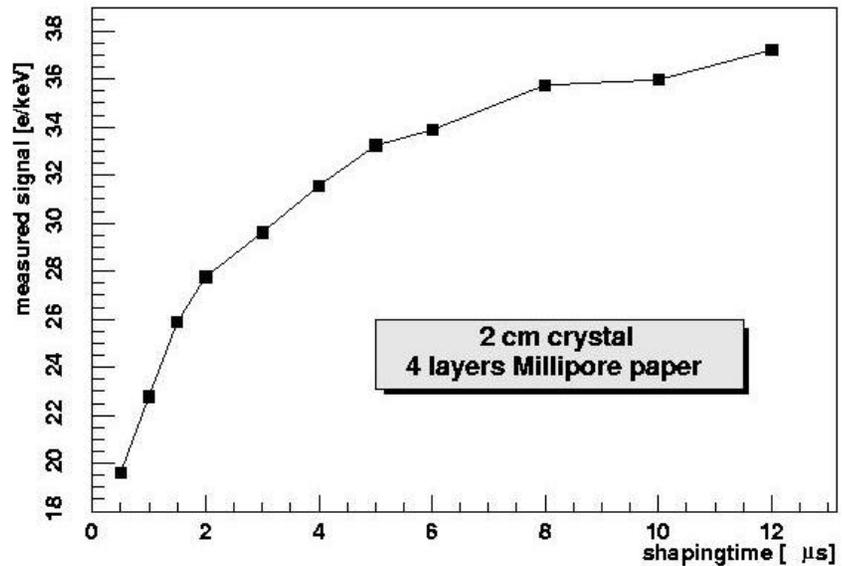
Additionally measure the time between D1 and D2 trigger to filter the chance coincidences



D2 Light Collection

Longer shaping time

- increases energy resolution
- increases time walk
- FEE can do up to 3 μs



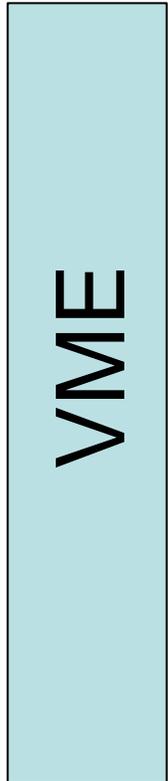
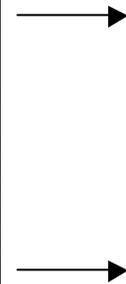
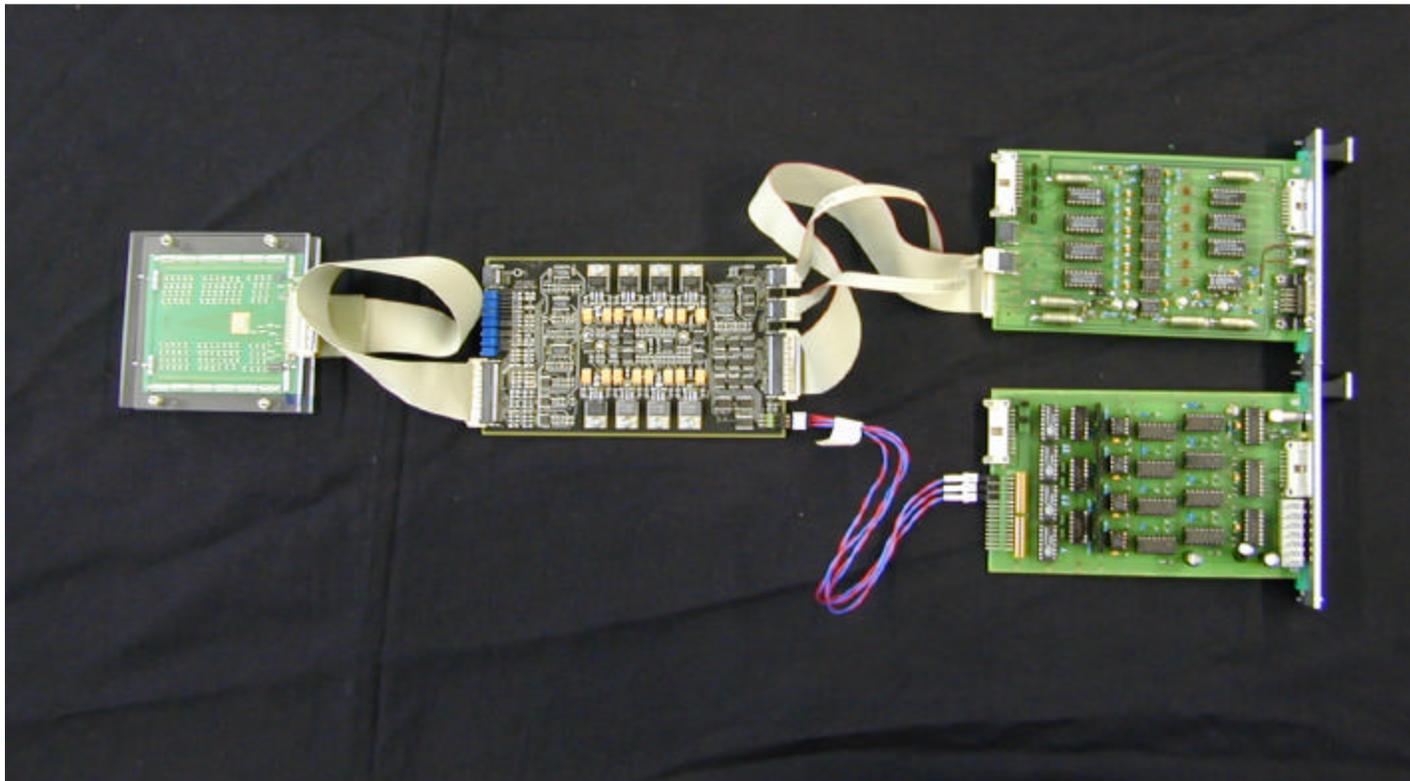


Electronics

FEE

repeater

optocouplers





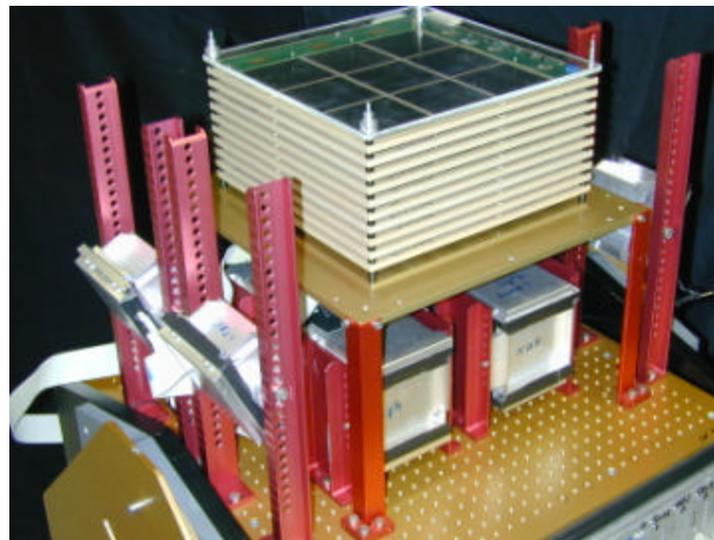
Status of the Prototype

D1

5 layers are working
at bias voltages of 40
- 60 V

2 layers have high
leakage currents

3 layers need bias
voltages of
120 - 140 V -
to be tested soon



D2

6 modules are installed

8 modules are assembled

6 modules: waiting for
crystals