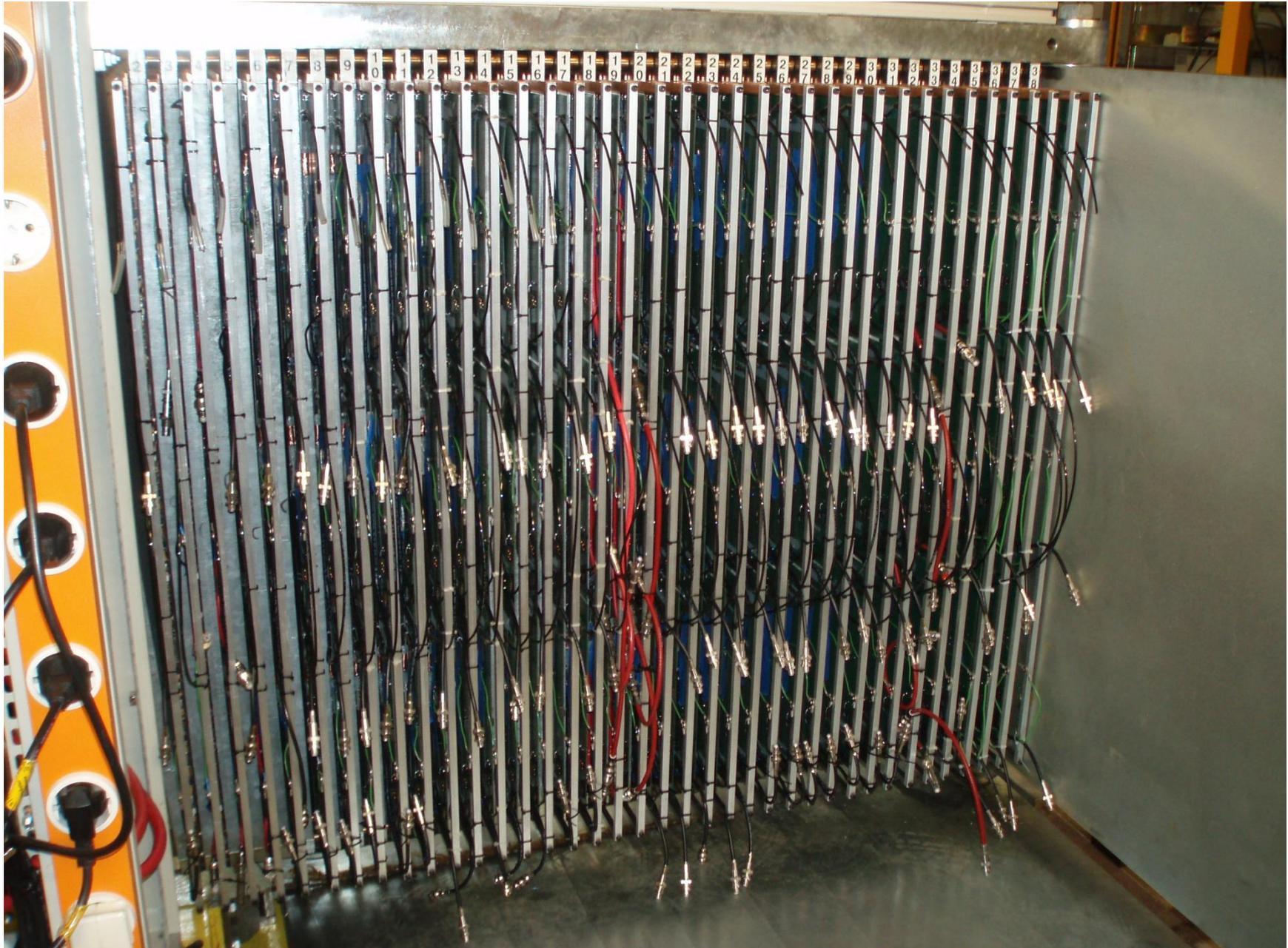


DHCAL Report

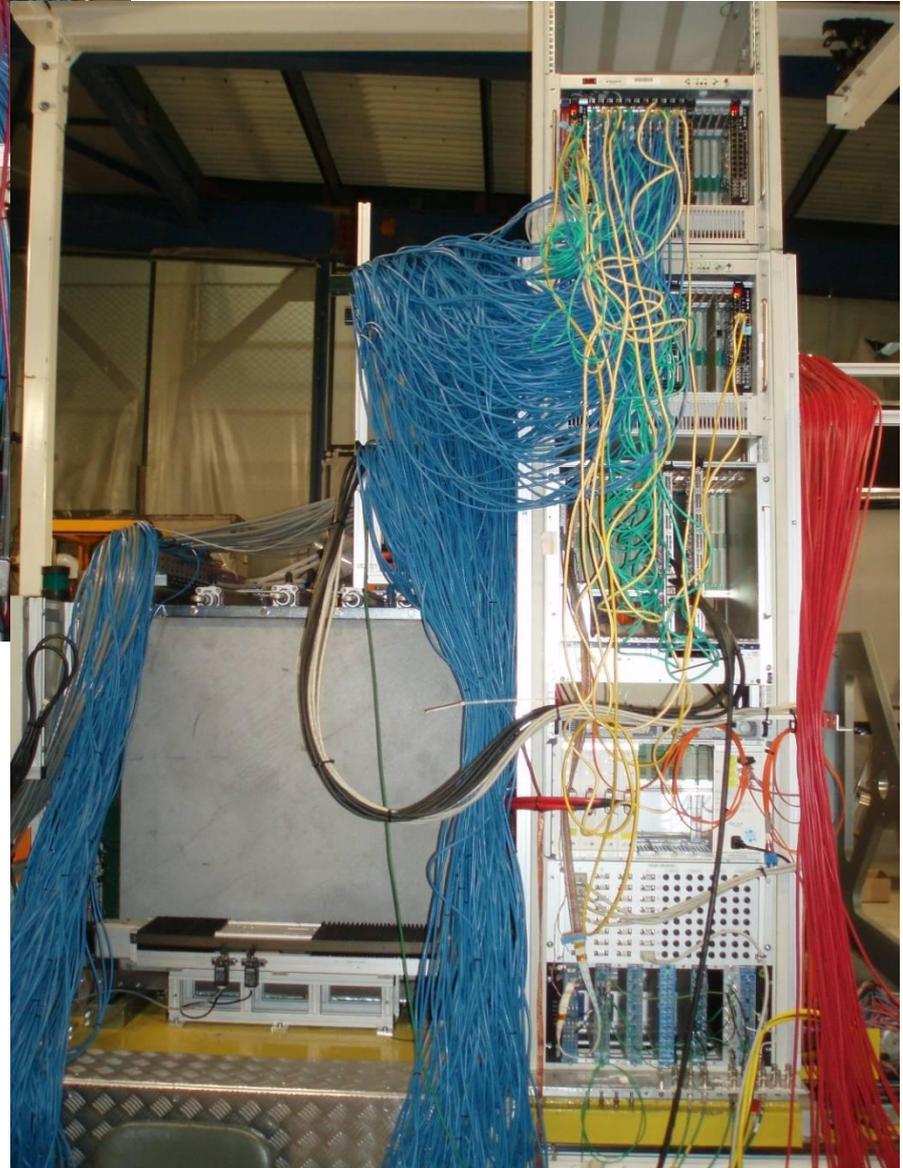
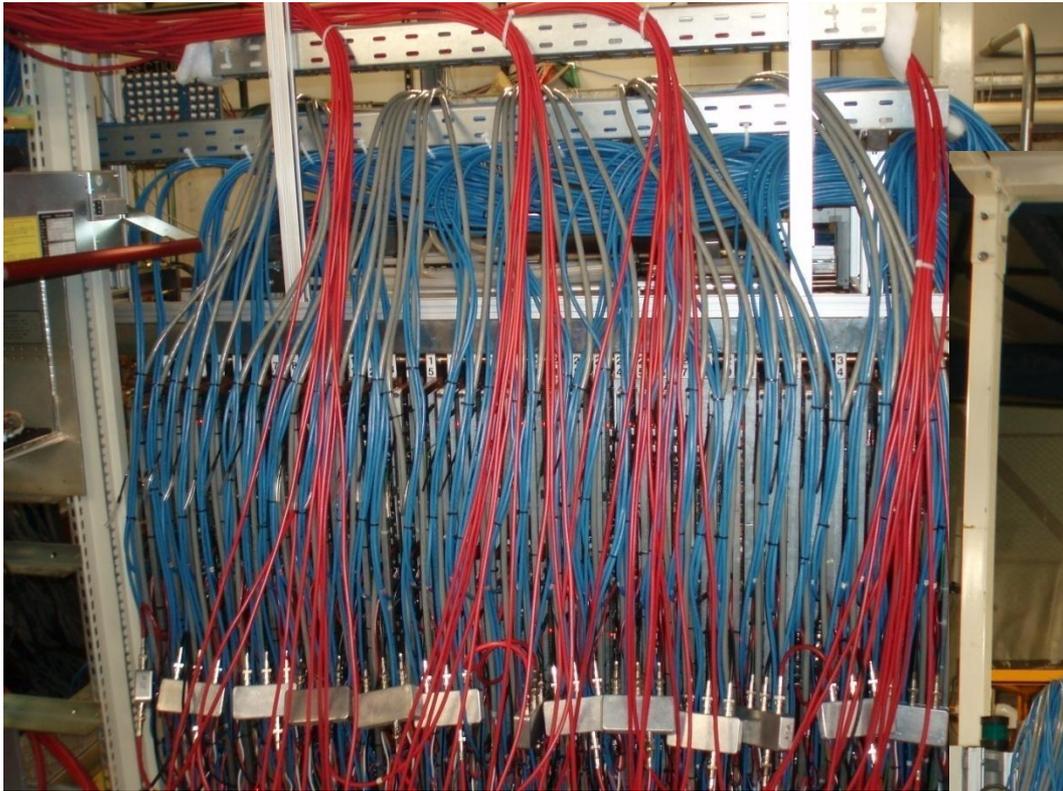
José Repond
Argonne National Laboratory

Testbeam weekly meeting
Fermilab
19-October, 2010

Installation complete



Cabling done
350,000 readout channels



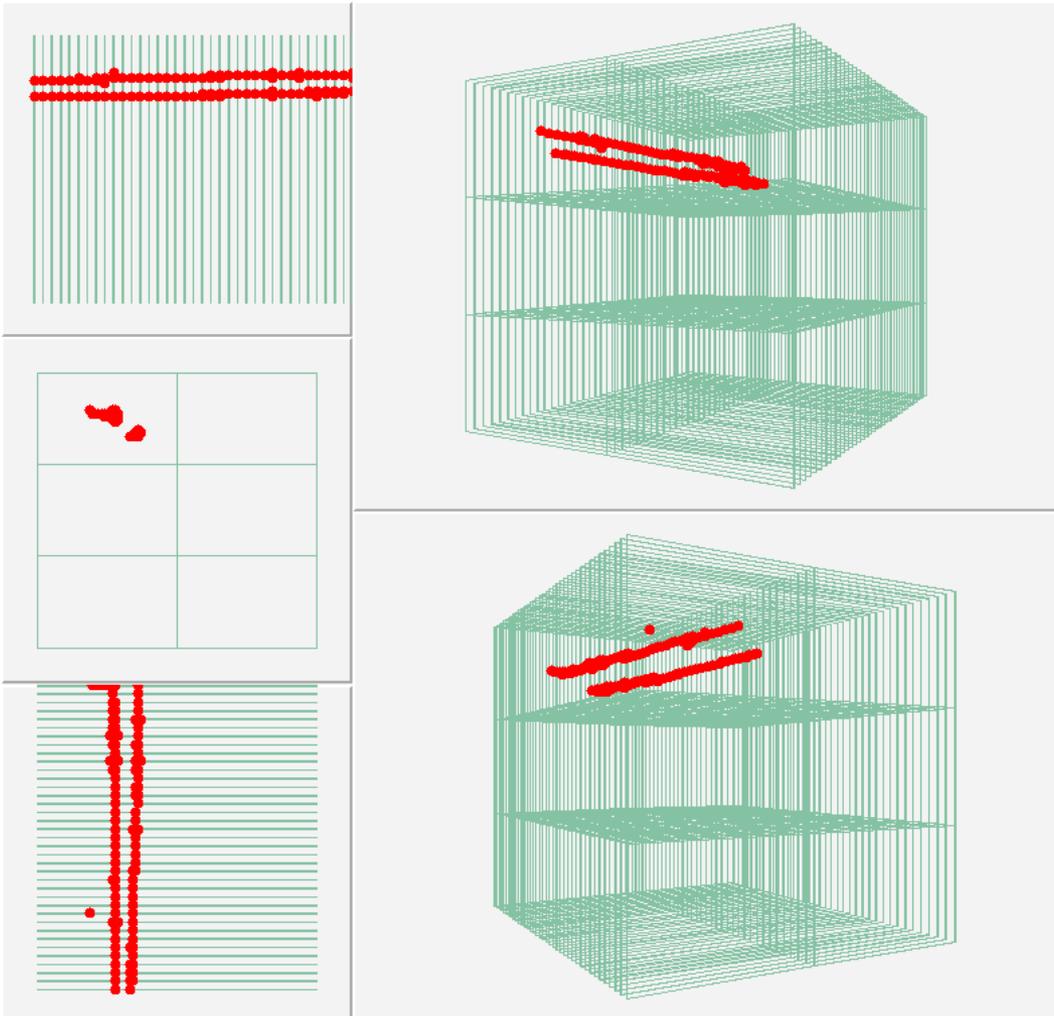
First beam on Friday at 18:00

Using 32 GeV/c secondary with beam stopper
Rates on MTSCCL1 ~ 3,000

→ First online event displays at 18:15

Now already collected > 1,000,000 events

32 GeV secondary beam with 3 m beam blocker = muons
NO event selection



Occasional noise hits

Chambers operated at
higher temperature
than usually

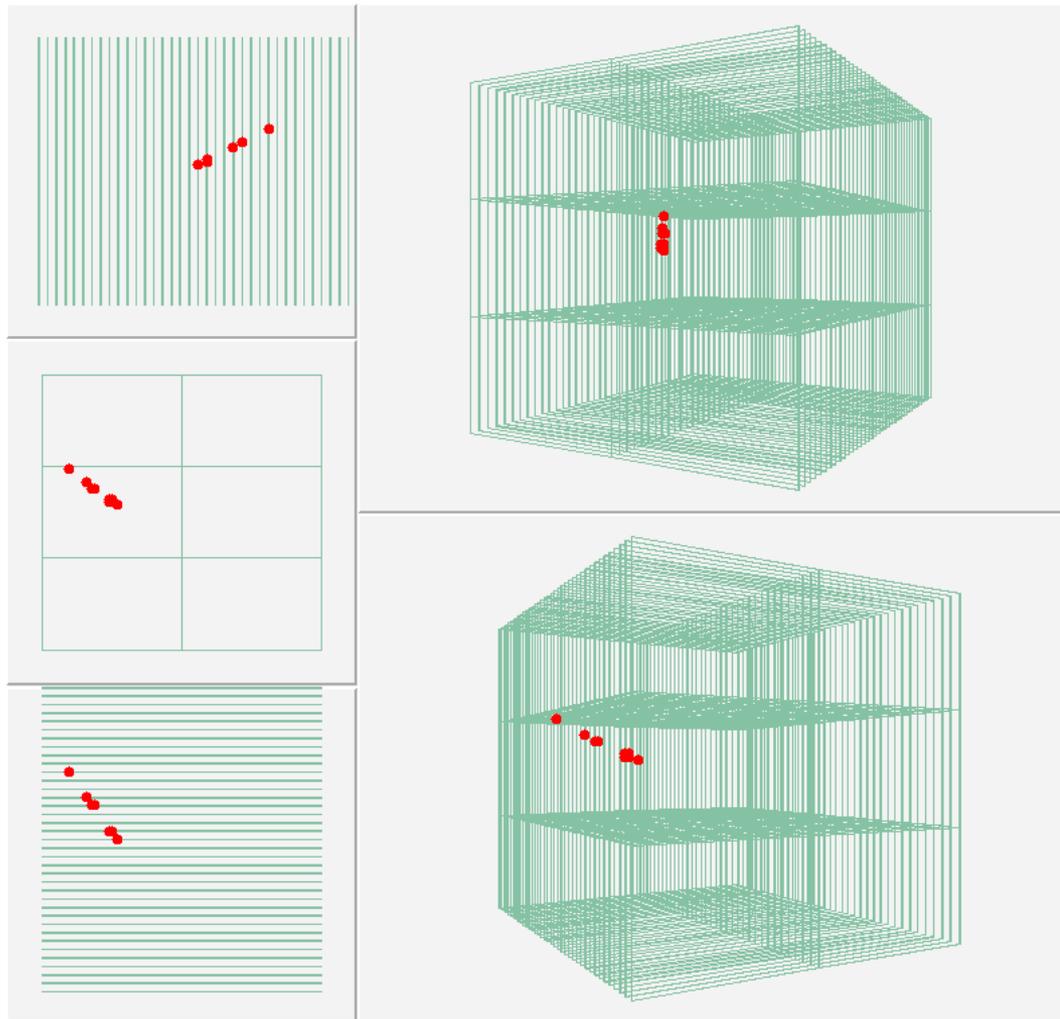
- Higher efficiency
- Much higher noise rate
- higher pad multiplicity

Thanks for repairing
the A/C in the enclosure

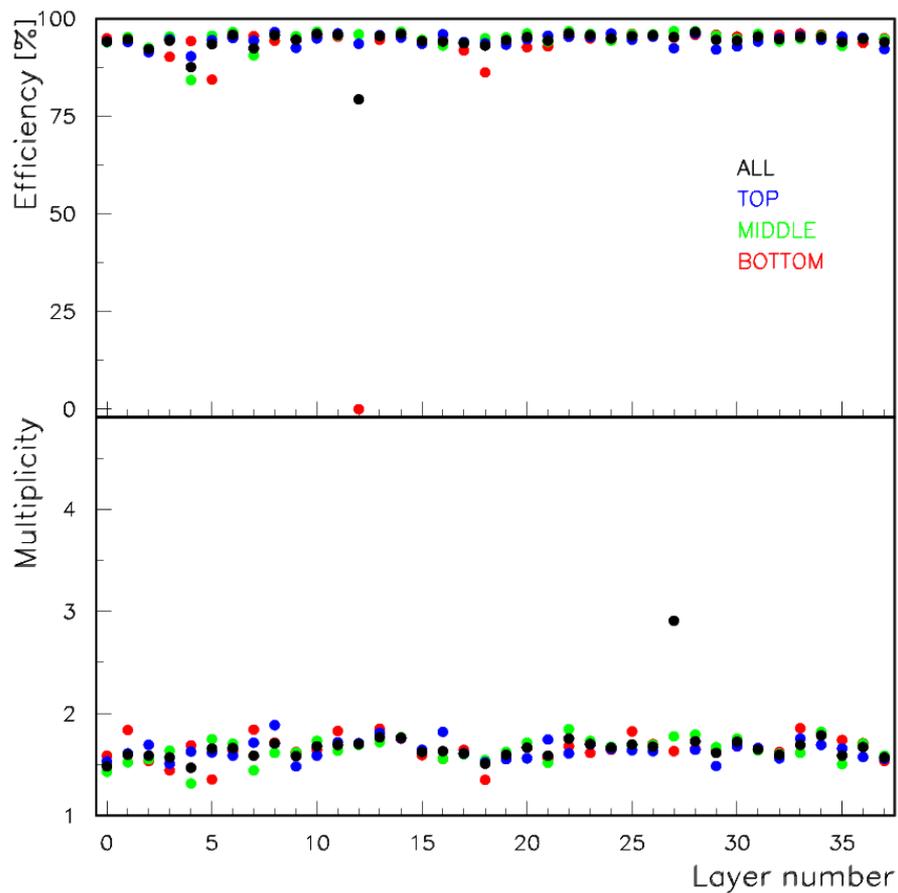
Noise run

Event selection requesting at least 5 different layers with hits

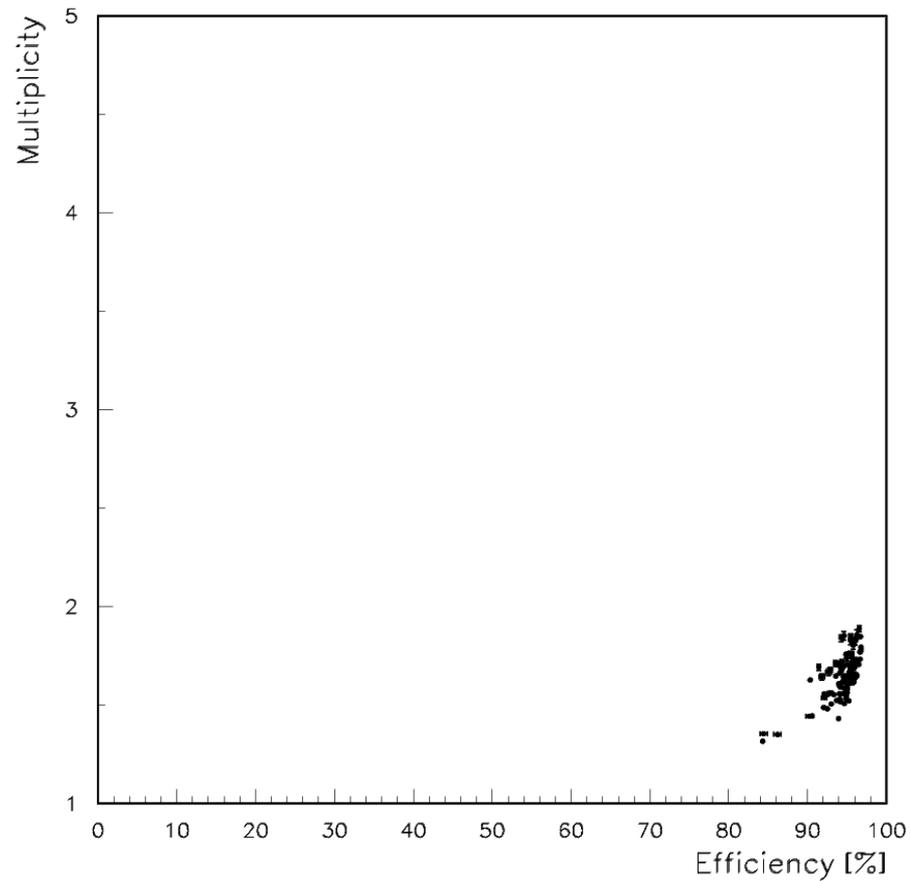
Due to high data rates, only selection of layers read out



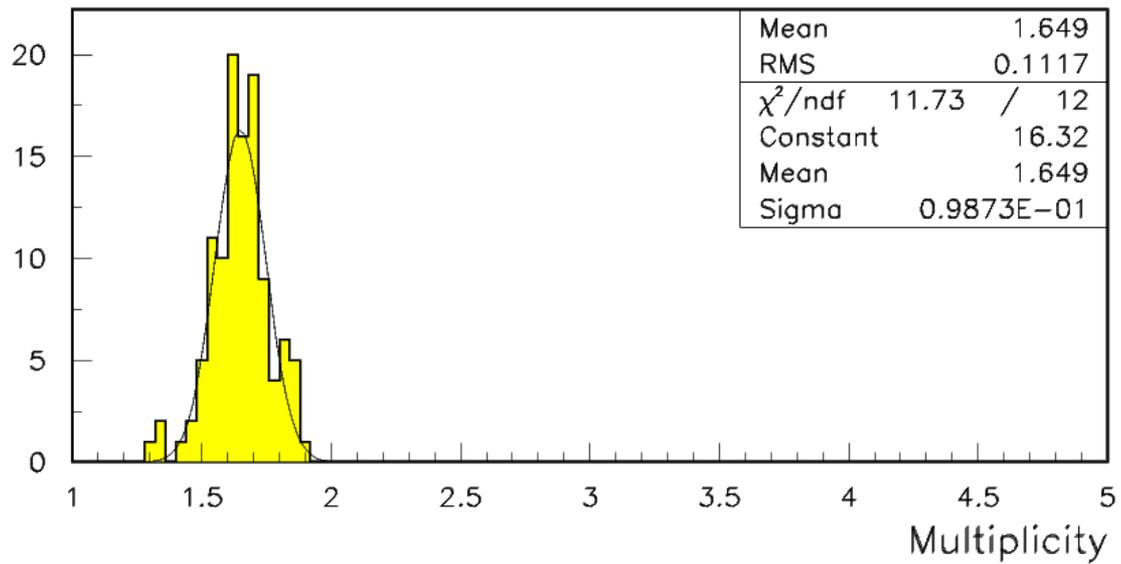
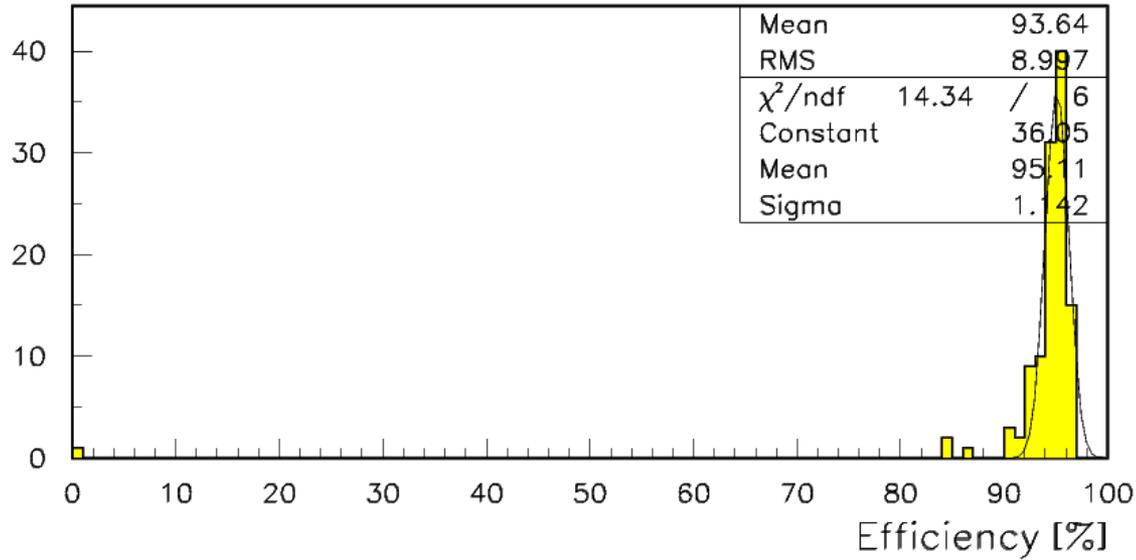
DHCAL Run 610063



DHCAL Run 610063



DHCAL Run 610063



Broadband muons for calibration

Run plans

Calorimeter not rotated

Move calorimeter around to expose entire volume (probably not needed)

Trigger with 1 x 1 m² Scintillator paddles

Adjust timing of Scintillator coincidence, TCMT DAQ, and Cerenkov signals

Most likely for one week, depending on statistics and width of beam

(rough calculation: $(100/\text{pad}) \times (9216 \text{ pads}) / (350 \text{ muons/spill}) = 2,600 \text{ spills} = 44 \text{ hours}$)

Energy scans (separation of positrons and pions offline using Cerenkov)

Calorimeter not rotated

Into center of calorimeter

Trigger with coincidence of 20 x 20 cm² Scintillator counter and 1 x 1 m² Scintillator paddle

1,2,4,8,12,16,20,24,32,40,48,60 GeV

(rough calculation: $100,000 \text{ events/energy} / (300 \text{ particles/spill}) \times (12 \text{ energies}) = 4,000 \text{ spills} = 67 \text{ hours}$)

Test beam ends November 2

Next test beam January 2011 (DHCAL + RPC-TCMT)

3rd test beam April 2011 (ECAL + DHCAL + RPC-TCMT)

4th test beam ? 2011 (DHCAL + RPC-TCMT)