

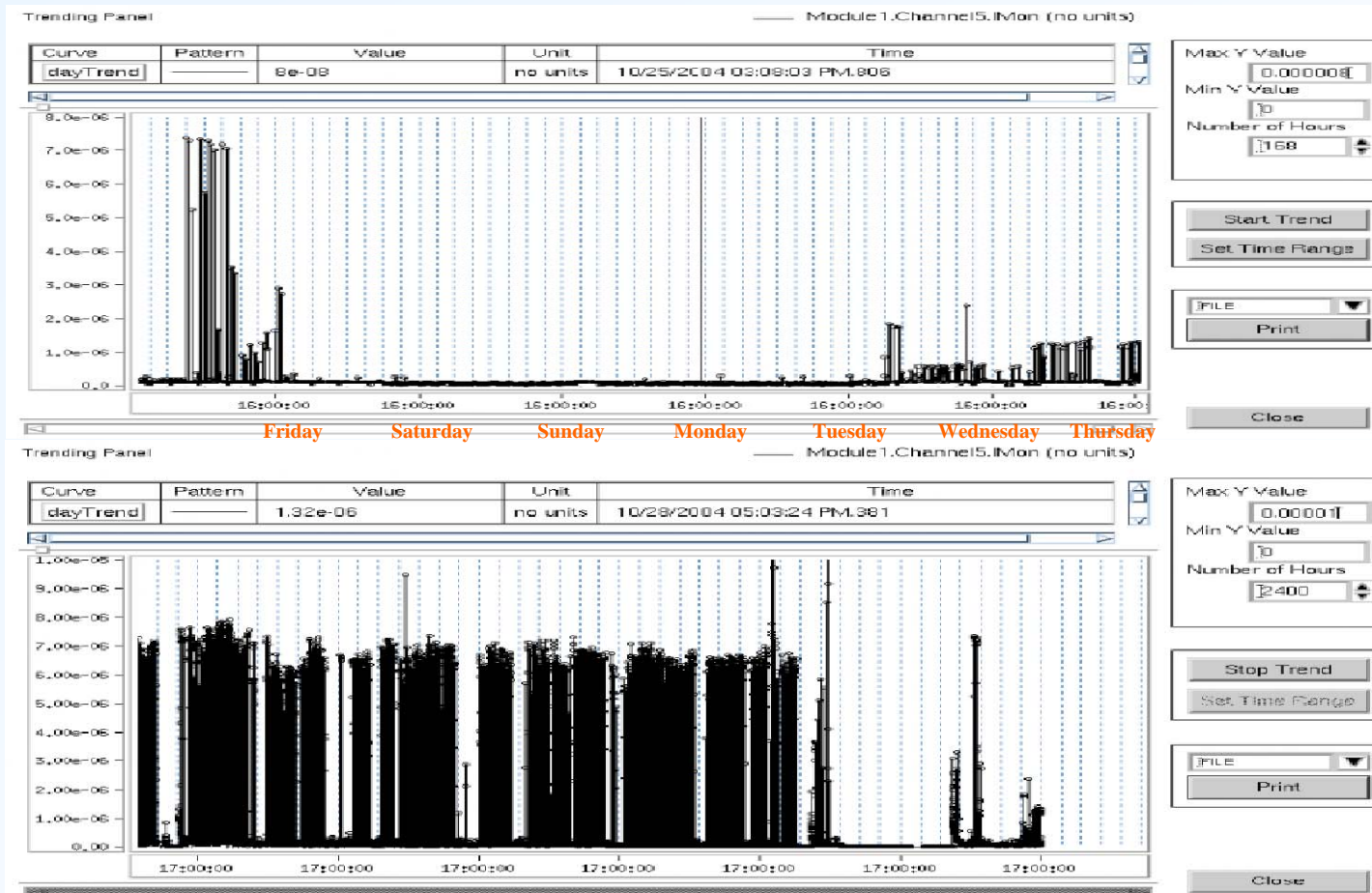


# Period Coordinator Report week 44, 22/10/04-29/10/04

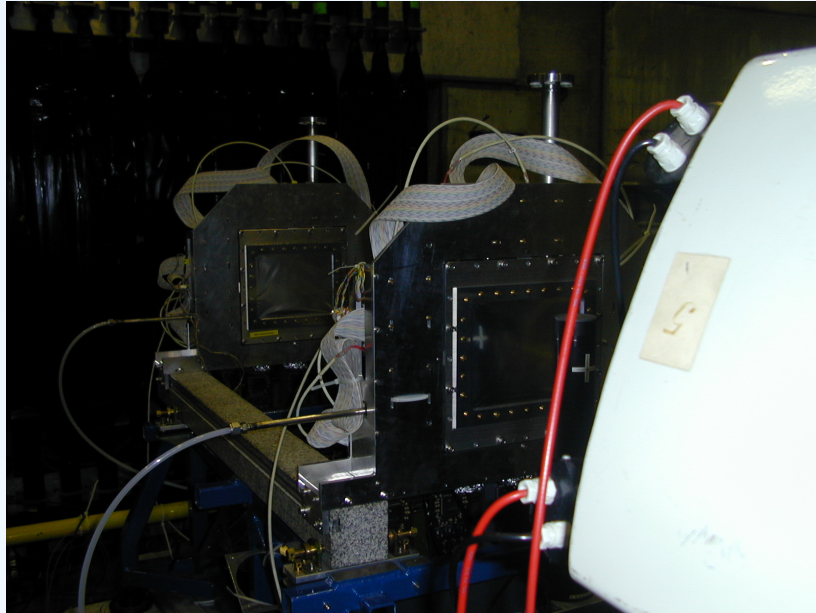
Reiner Geyer, LMU  
Compass Friday Meeting  
29/10/04

- Start Up of the HADRON RUN
  - Primakoff Scattering.
  - Diffractive scattering.

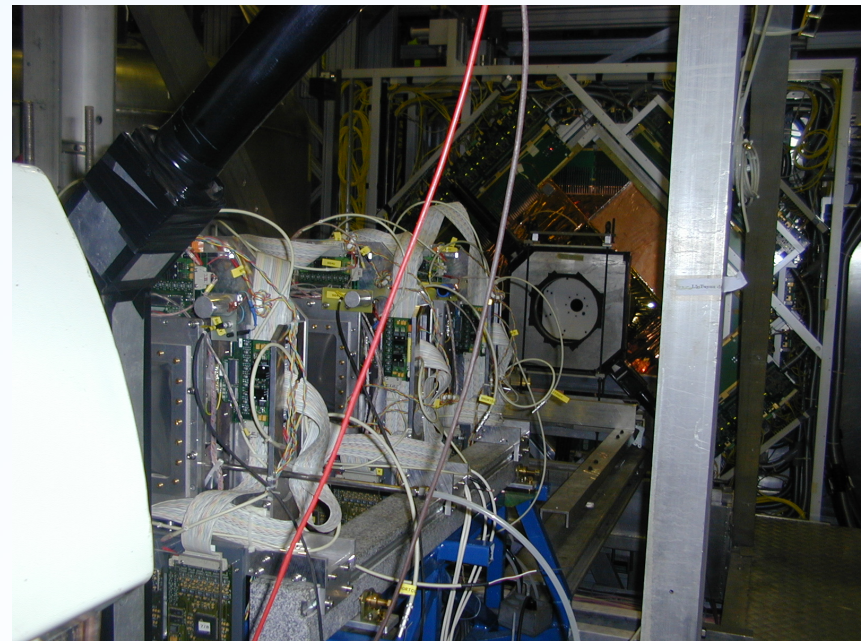
# One Week in the Life of a Straw



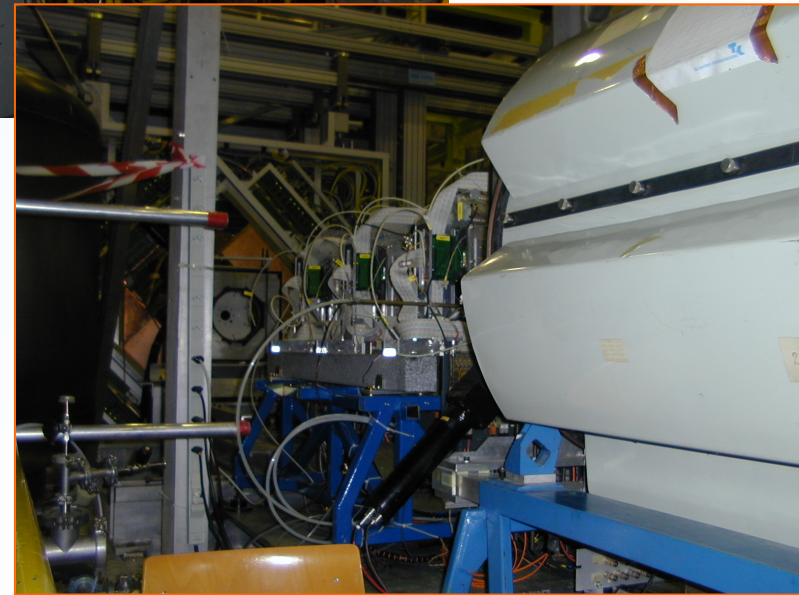
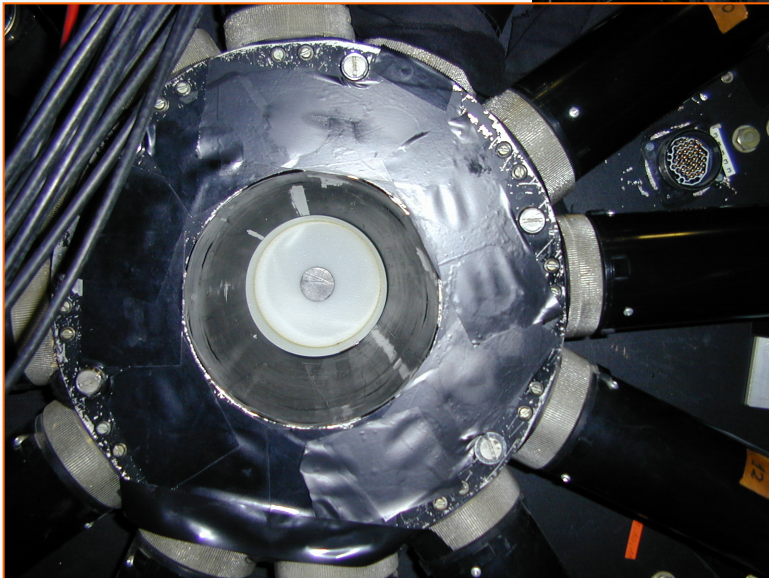
# Silicon Stations



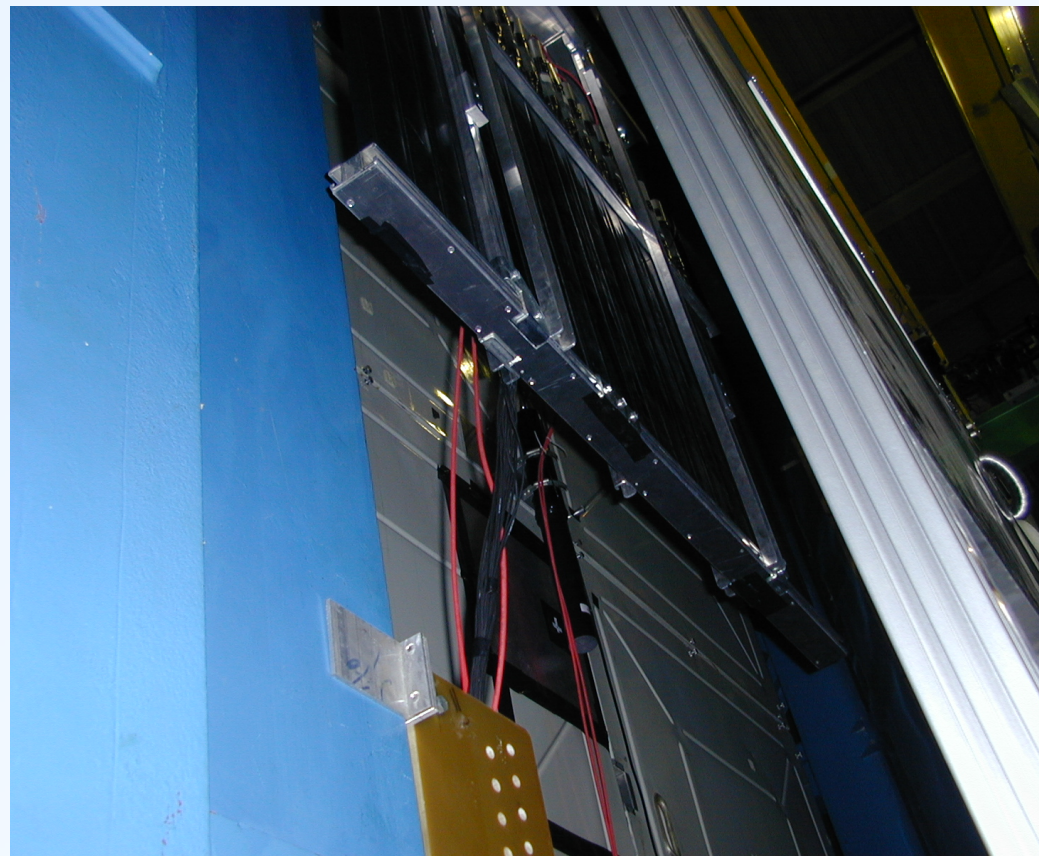
Silicons are ready and working correctly. Online filtering, based on the multiplicity, was tested.



# Veto Box, Target and Sandwich-Counters



# Primakoff Hodoscope and Beam Killer



## Primakoff Scattering: What was expected from the tests in 2000.



- Trigger Rates for the Primakoff Trigger 1: Factor of 25 reduction of the beam rates with the Primakoff hodoscope. Factor of 10 reduction with E-Cal.
- Number of triggers caused by interactions with the target: 10%.
- Multiplicity one in Primakoff hodoscope: Factor 3.

Beam Intensity  $10^7 \gg 40.000$  triggers for Primakoff 1.



## First Results from Friday Night

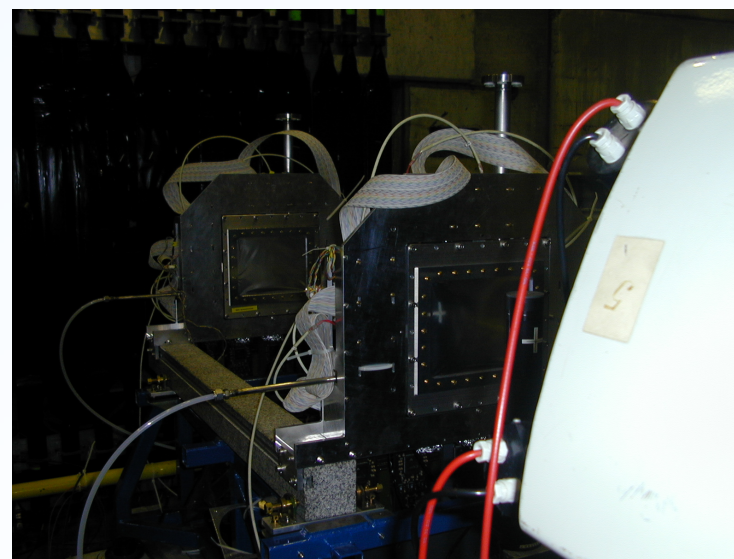
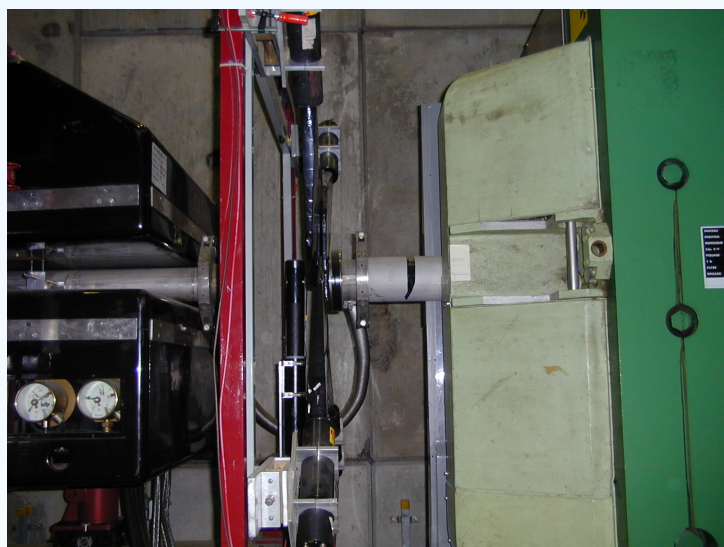
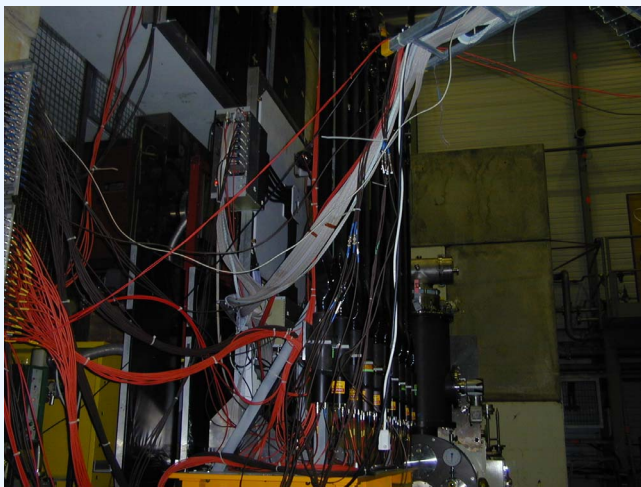
- Rates of the Primakoff 1 trigger by more than a factor of five too high.
- Inefficiencies in the Beam trigger (SciFi 1).

Beam lost around 21 o'clock.

# Beam Counters



SciFi 1 was replaced in the trigger by a new scintillator beam telescope.







## Background Studies

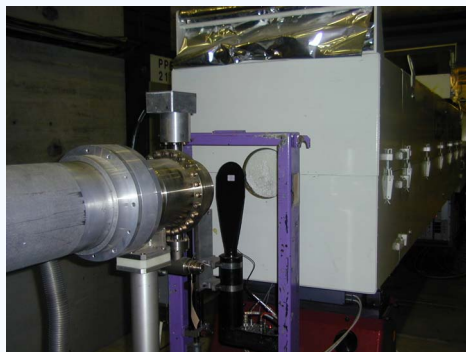
- About 10% counting rates in the Inner Veto.
- About 10% counting rates in the Outer Veto.
- Nevertheless most triggers (>50%) are caused by beam interactions along the experiment (15%).



Reduction of material, if possible.

Optimization of the beam tuning

Improvements on the trigger are necessary.



**Hodoscope was  
removed**

# More Detailed Trigger Studies



Beam	Beam Killer	PH	ECAL low	ECAL High	PK1	PK2	
3478759	3004874	607061	265188	58215	123904	42308	
1698669	1460120	293309	127875	27568	68774	22371	no Sandwich
1687233	1450712	291228	126421	27080	60403	19851	Sandwich
1657699	1382972	294446	124261	26807	74087	22781	only Beam Killer Veto
	0.86	5.7	13.1	59.7	28.0	82.2	inner Veto,Sandwich,beam Killer
	0.85	5.7	13.2	61.6	24.6	75.9	inner Veto,beam Killer
	0.85	5.7	13.3	62.3	27.9	84.9	inner Veto,Sandwich,beam Killer
	0.83	5.6	13.3	61.8	22.3	72.7	beam Killer

## Last Situation \*Thursday Night



- HCal 1 was included as a Veto into the PK1 trigger.
- $2 \cdot 10^6$  Beam triggers  $\gg$  65000 accepted triggers.
- $4 \cdot 10^6 \gg$  data transfer rate to the computer center is limiting. DAQ can handle the rate.



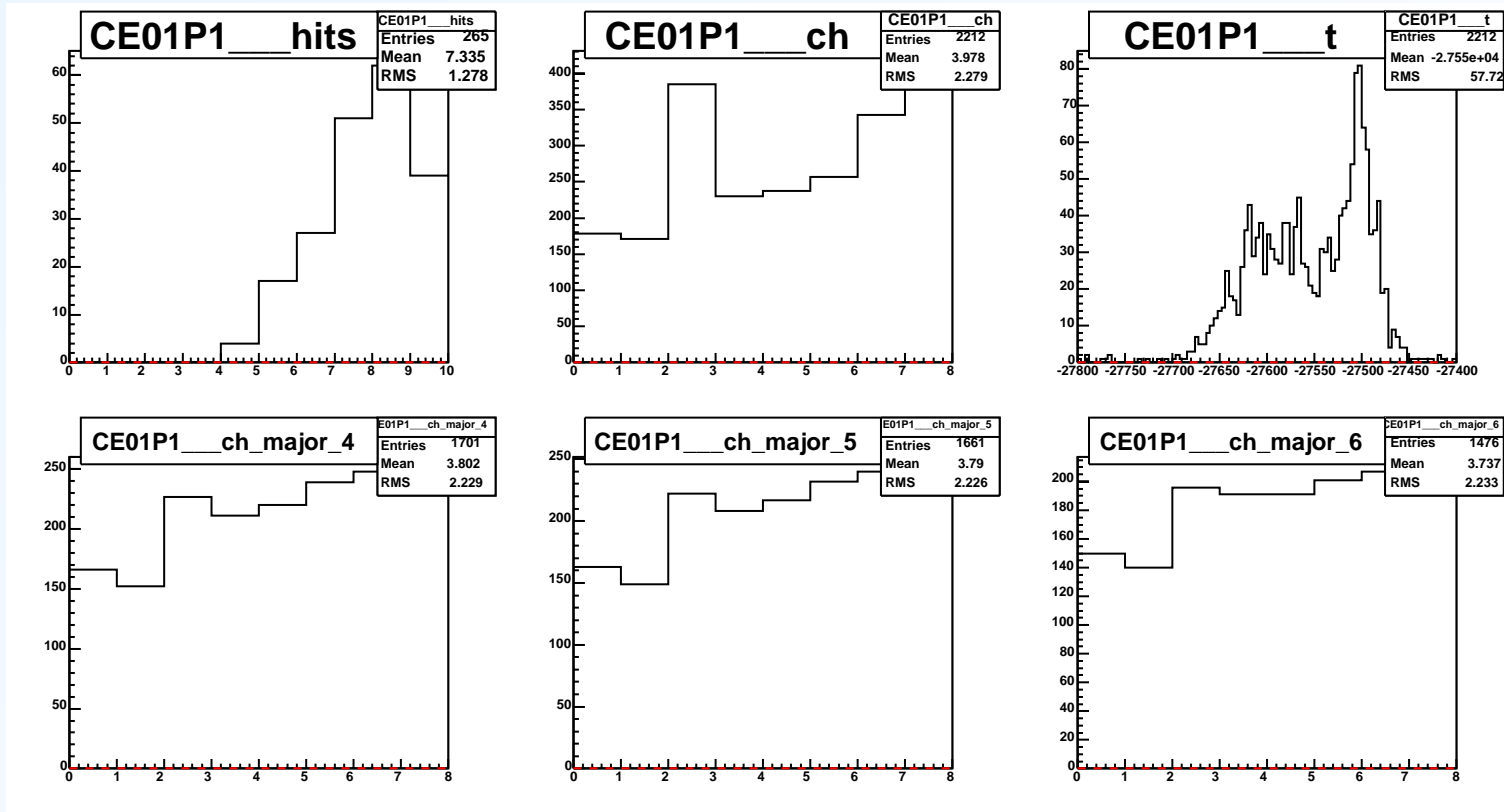
## What can still be improved

- Multiplicity 1 in the Primakoff hodoscope would reduce the Primakoff Trigger1 by a factor of 2. Can be implemented hardware or software wise (online filter).
- Data taking with  $6 \cdot 10^6$  seems to be possible.
- Reduction of material in the beam: Replacement of SciFi station(s) by Gem Detectors. But Gems have to prove to stand these hadron rates.

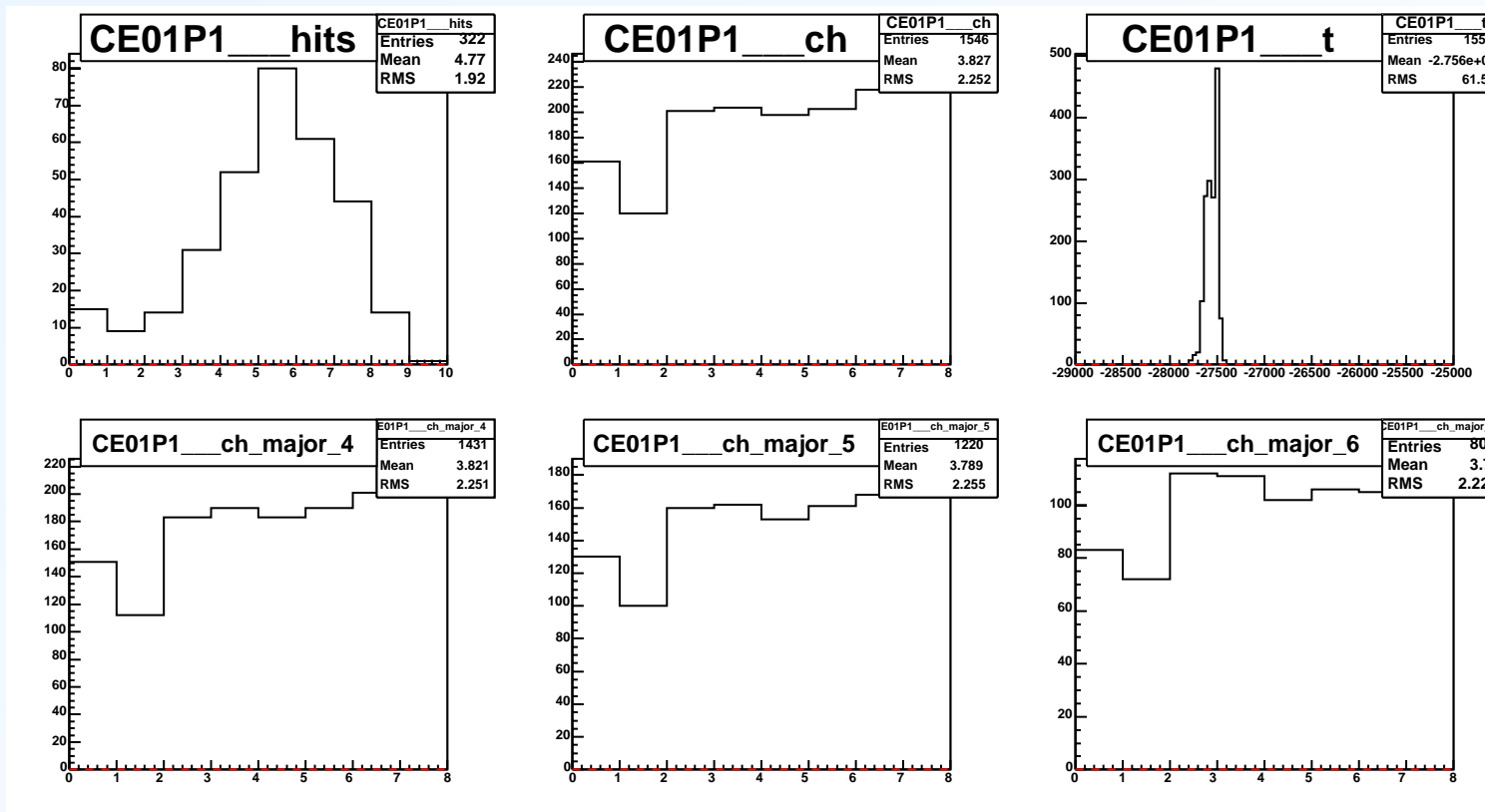
# CEDAR



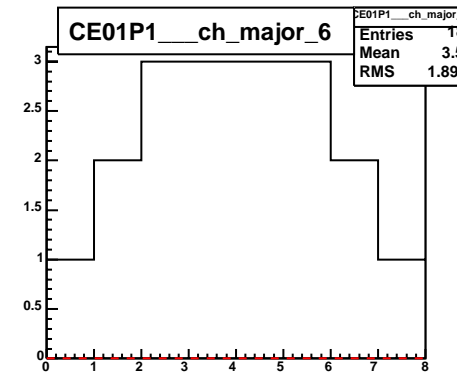
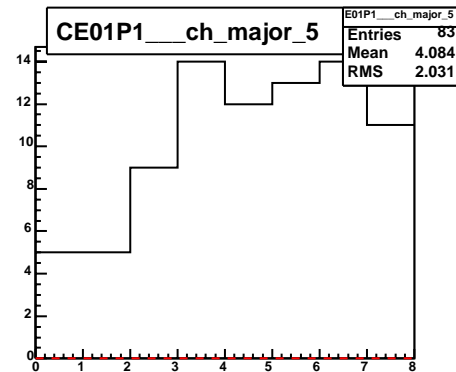
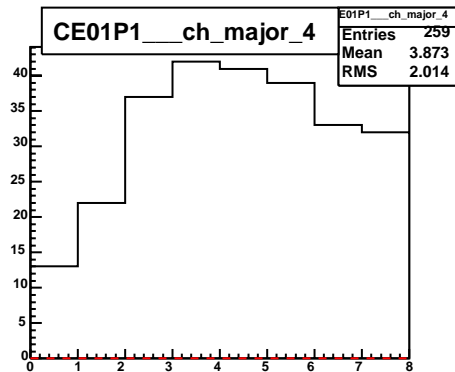
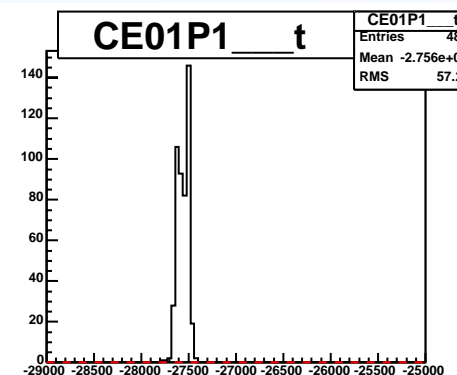
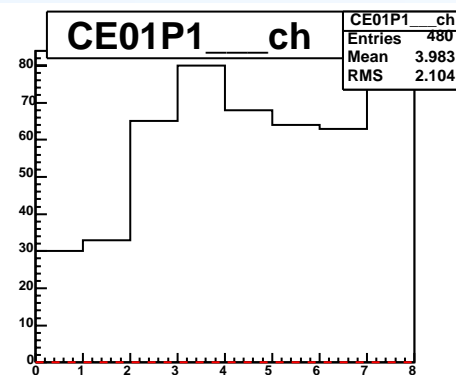
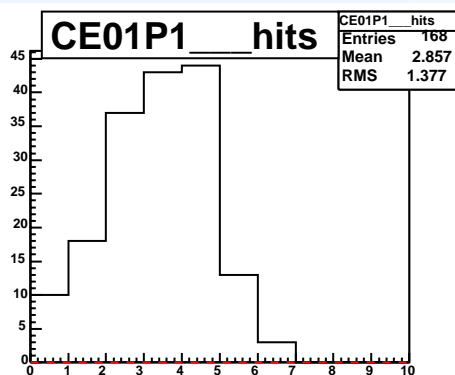
# CEDAR 1: 2 mm Diaphragm



# CEDAR 1: 1mm Diaphragm

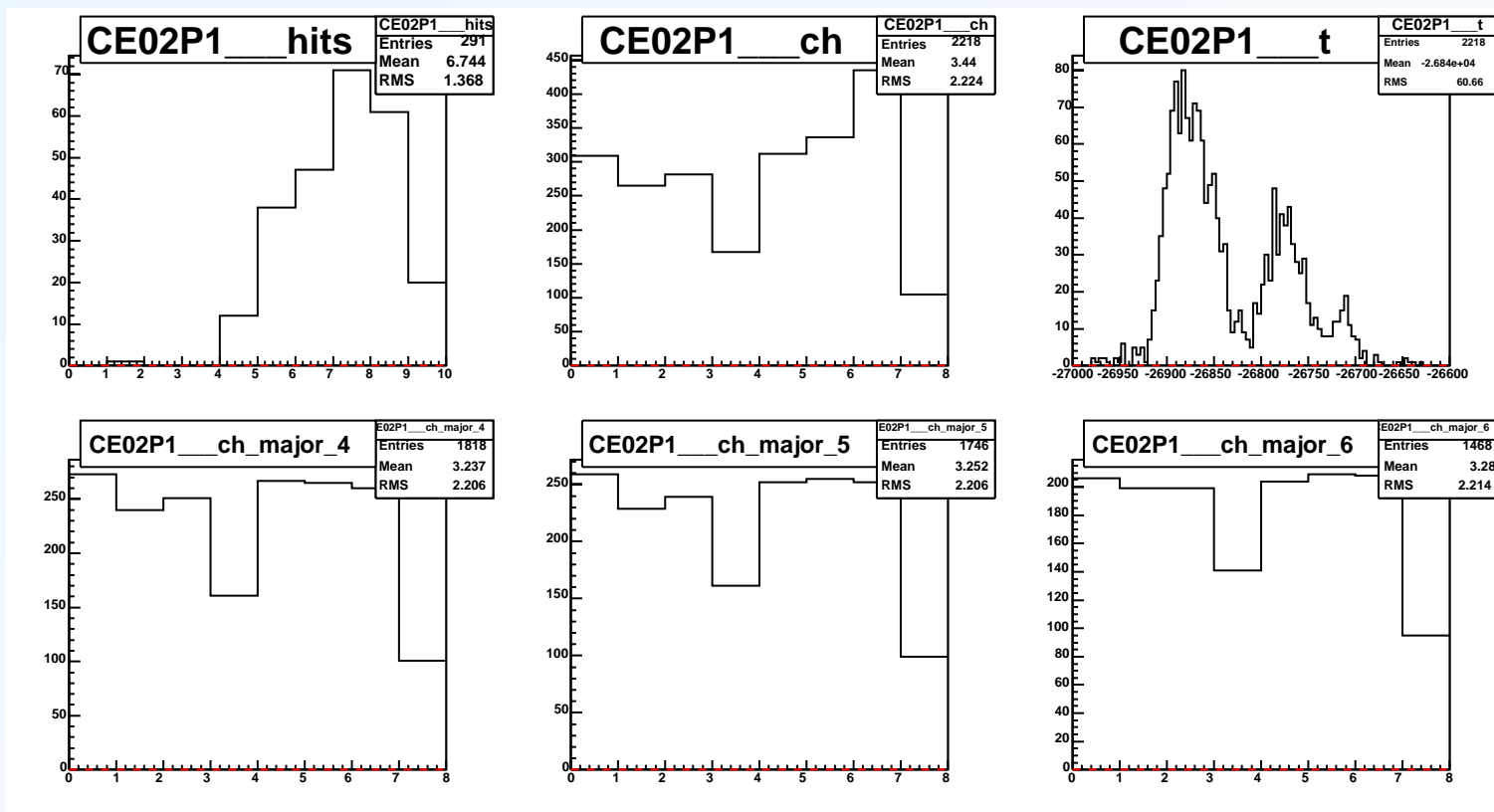


# CEDAR 1: 0.5 mm Diaphragm

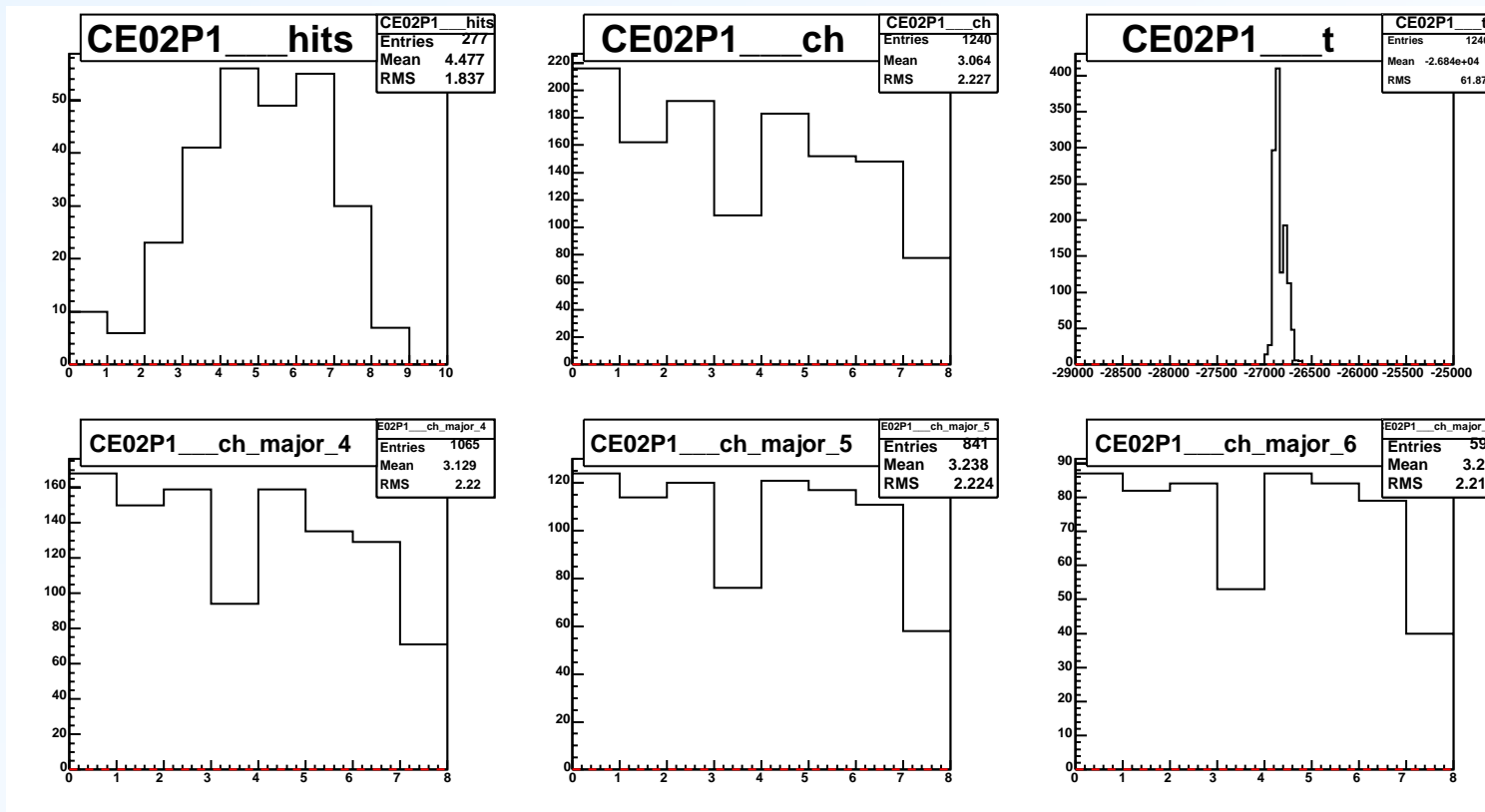




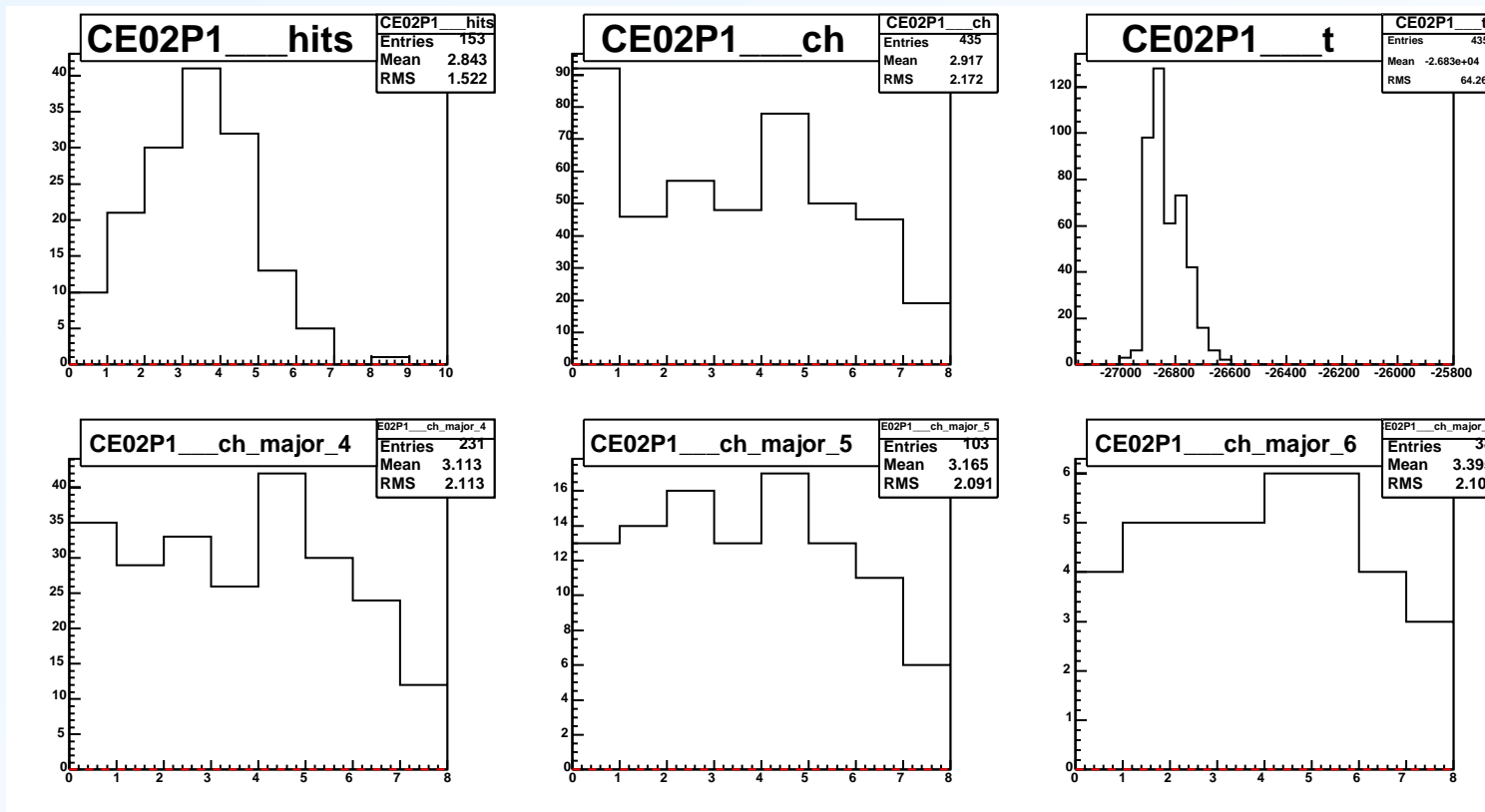
# CEDAR 2: 2mm Diaphragm



# CEDAR 2: 1mm Diaphragm



# CEDAR 2: 0.5 mm Diaphragm



## The Rich



- C4F10 was meanwhile replaced by N2.
- The decision, whether the Rich stays in the Read Out is postponed until the trigger and the beam tuning will be finalized. The decision depends on, how much the Rich data will slow down data taking.

## Rich-Wall Prototype



- Installed successfully on Saturday and ready for testing. First results.