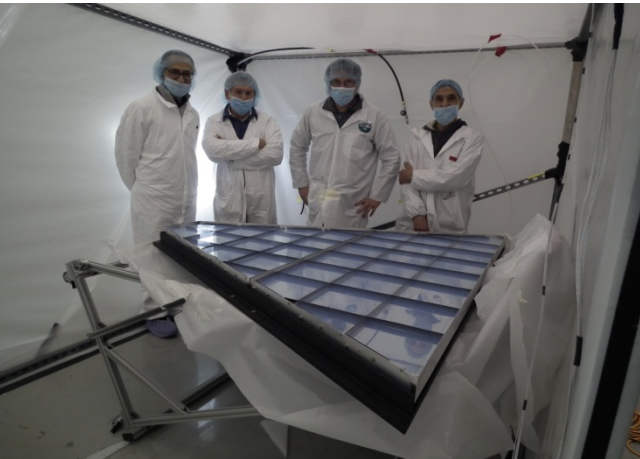
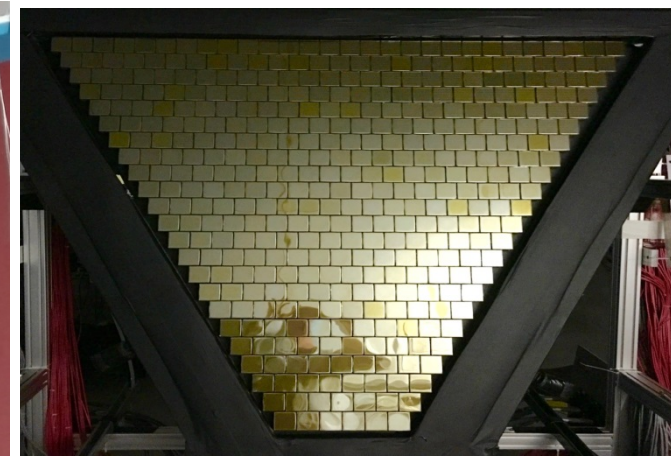
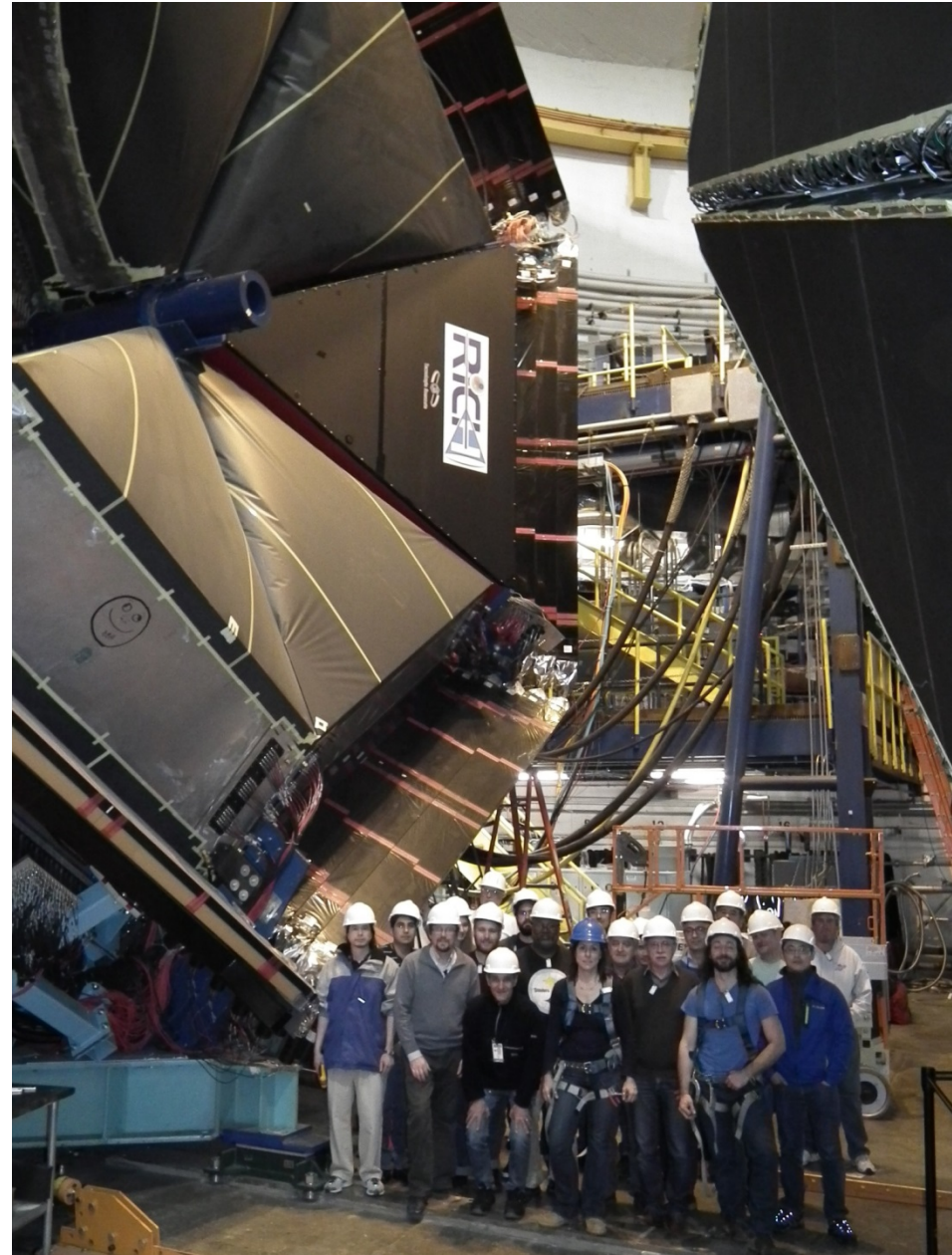
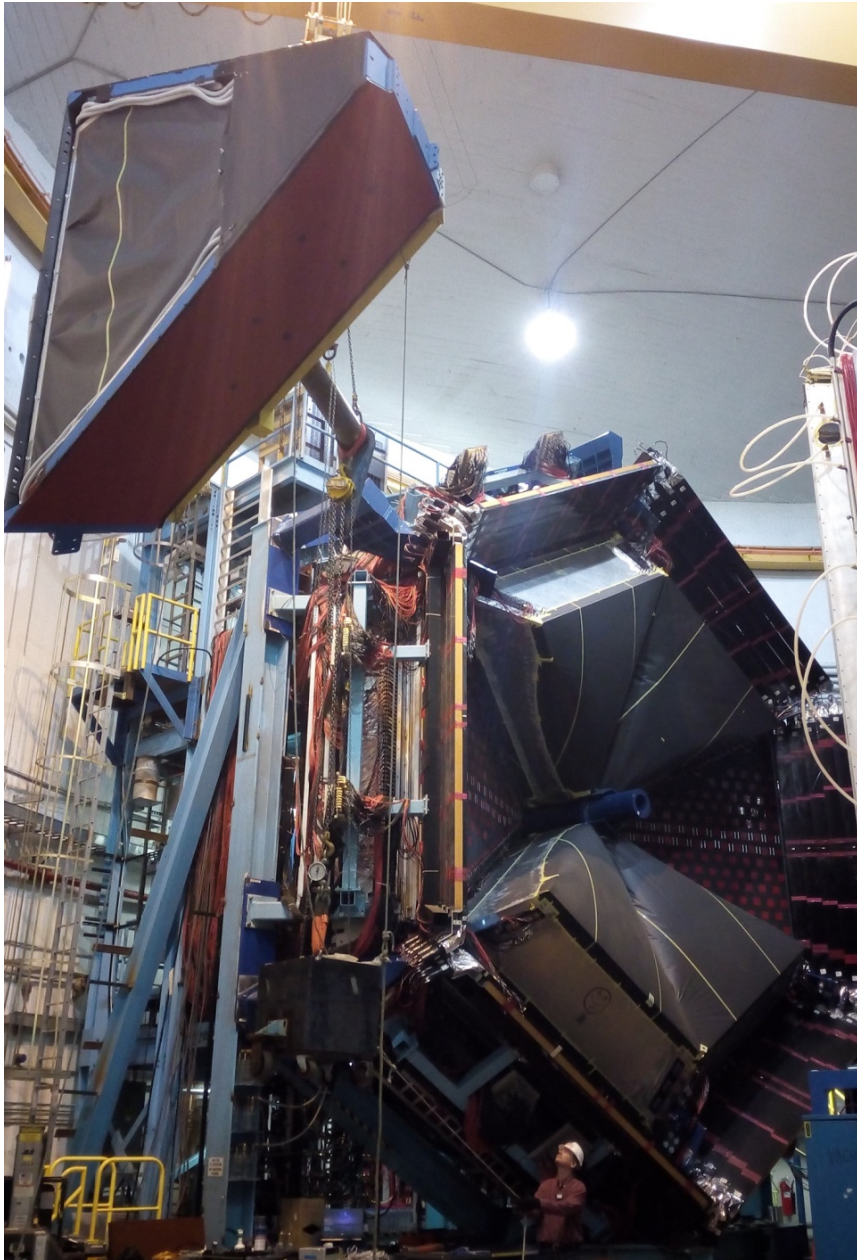


First RICH module assembled in November 2017

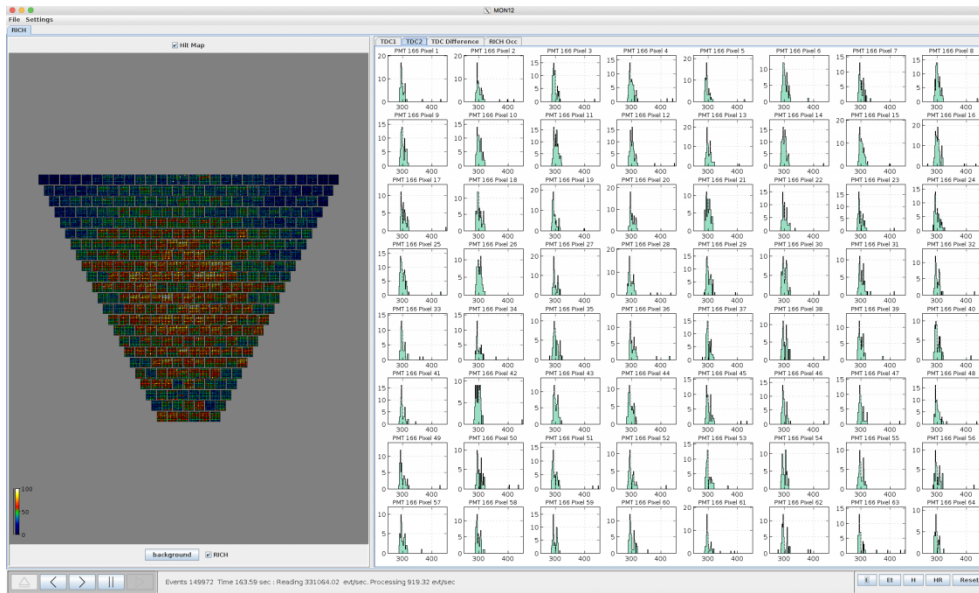


Installation in CLAS12 in January



RICH data

online monitor



Time reconstruction

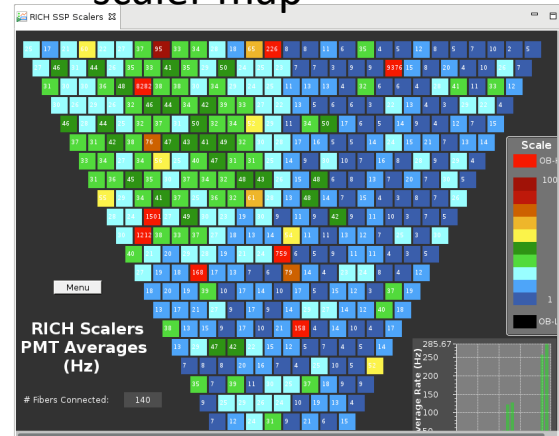
$$\Delta t = \text{hit time} - \text{expected time}$$

Expected time:

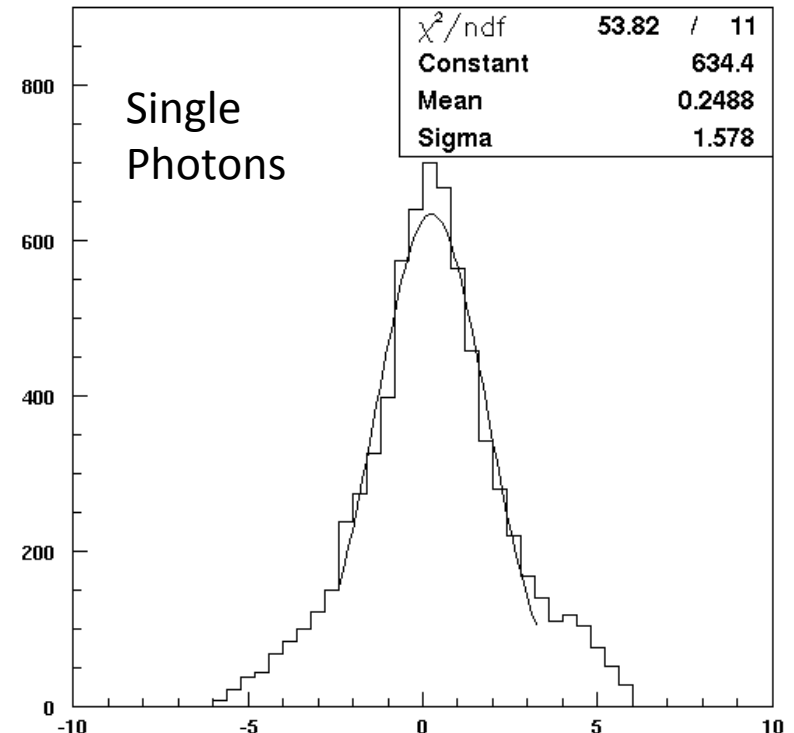
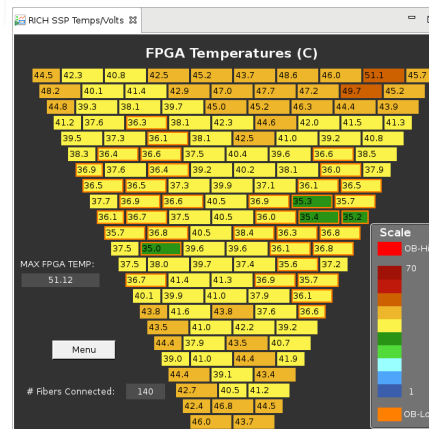
Event start time + particle path

slow control

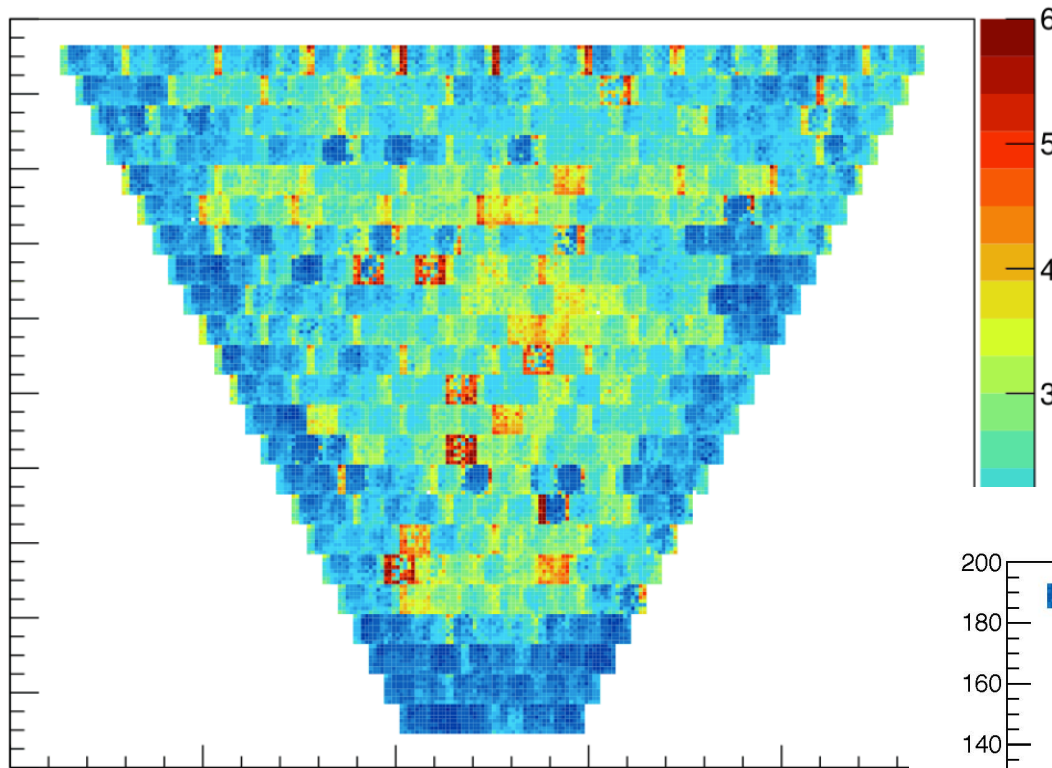
scaler map



temperature map



Pedestal RMS Distribution

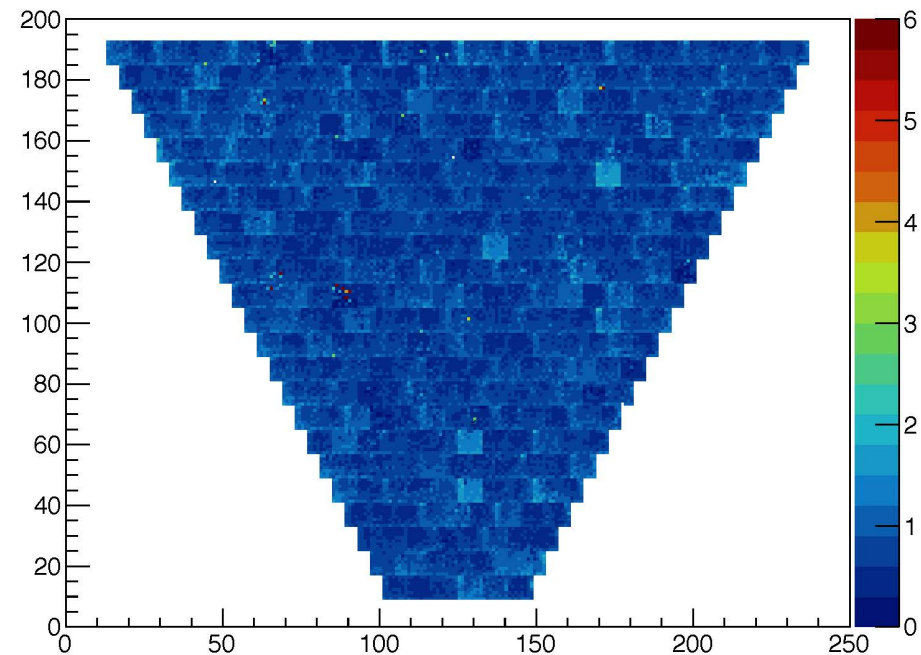


TDC discriminator baseline

1 DAC $\sim$ 1 mV

Typical single-photon signal
around 400 DAC

PEDESTAL RMS [DAC unit]



Grounding grid with
jumpers between boards
improved the situation

Gain Setting Test1

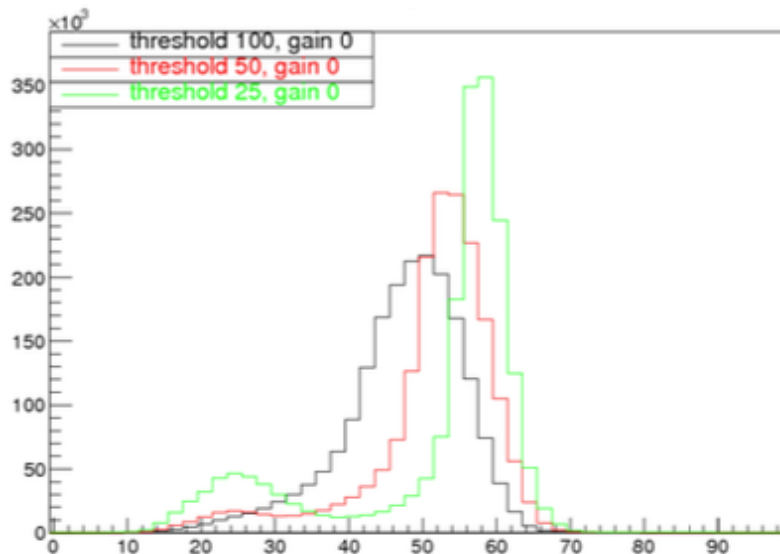
Duration distributions, all the channels and PMTs

black: high threshold

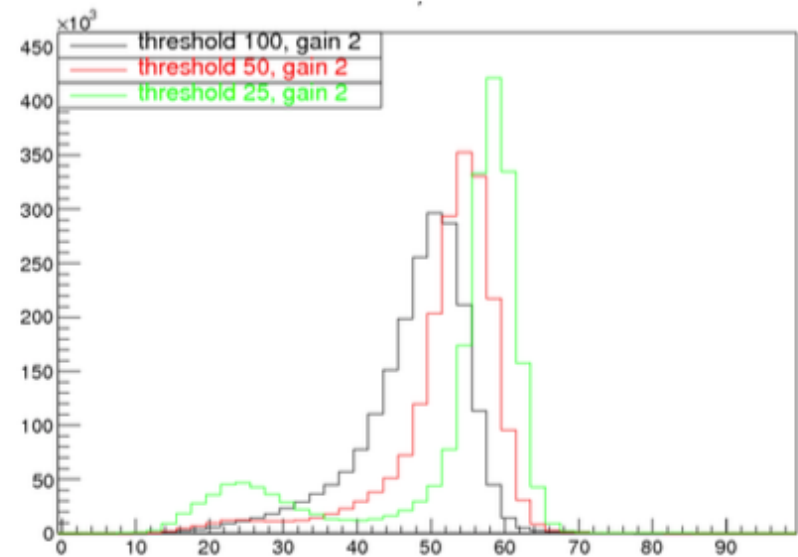
red: intermediate threshold

green: low threshold

Before equalization

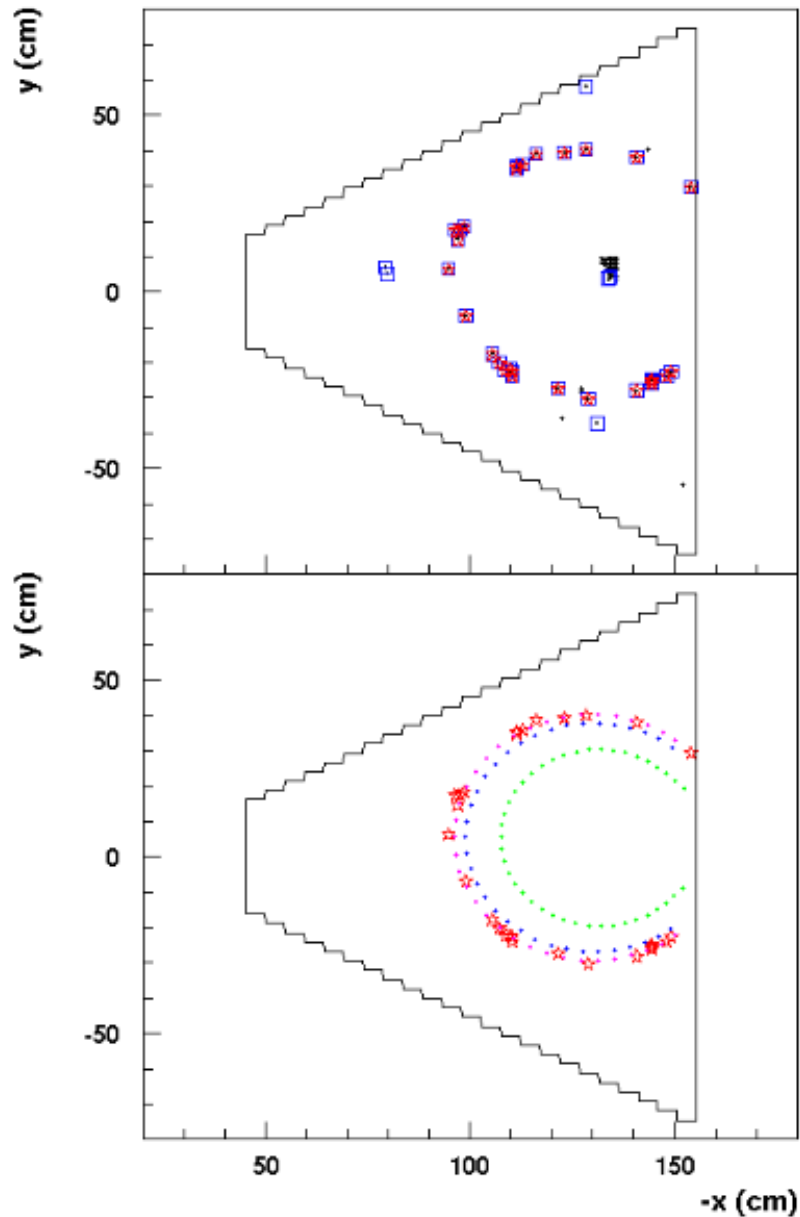


After equalization



- **After equalization the distributions are less sensitive to the threshold**
- **Higher thresholds cut the tail of short signals**

RICH Status

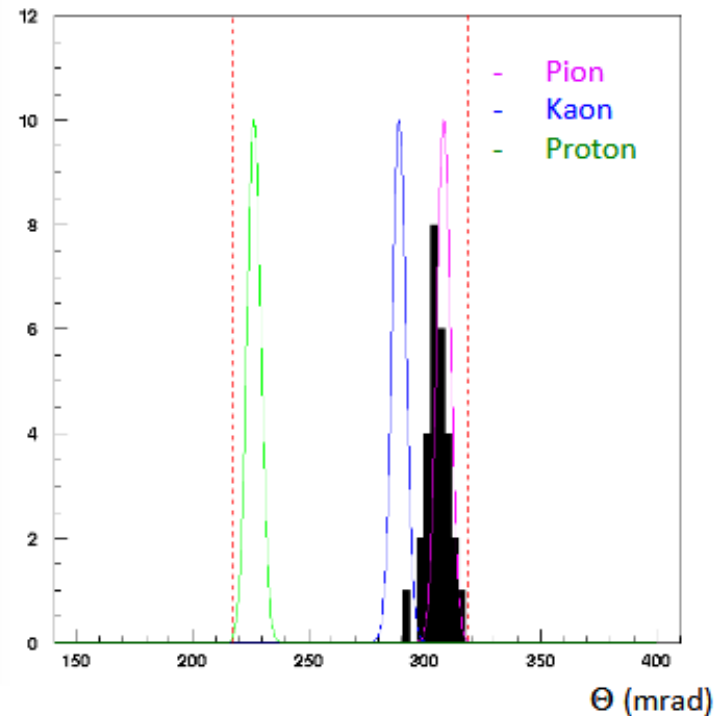


Run 3817 File 10 Event 460270

$P = 4.3 \text{ GeV}/c$

CLAS pid = 211 RICH pid = 211

$R_{QP} = 0.997$ $R_{QP} = 1 - LH_{2nd}/LH_{1st}$



Milestones

30-06-17 Completamento della produzione degli specchi del primo modulo 100%

31-12-17 Completamente assemblaggio pannello elettronica primo modulo 100 %

30-6-18 Completamento assemblaggio primo modulo 100 %

31-12-18 Calibrazione primo modulo 50 %

Giugno 20 – Luglio 4 test beam Fermilab con SiPM

Settembre 18 sblocco 60 keuro per chips

RICH Budget

	Settore 1 (keuro)	Settore 2 (keuro)	Totale (keuro)
Piano Iniziale 2 settori del RICH			2200
MIUR Premiale			1900
CSNIII 2013-2018	768	205	
Giunta 2015, 2017	200	200	
Giunta 2019		200	
CSNIII 2019-2020		500	
Totale	968	1105	2073

Finanziamento medio CSNIII 190 keuro / anno

Finanziamento ideale 2019-2020 250 keuro/anno