

進捗報告

2015/ 01/ 05 - 09

Main

Sub

2015/01/05 – 07

CAMAC ADC & TDC 変換係数 Calibration

- setup [OK]
- data collect [OK]
- analysis [OK]
- conclusion [OK]

WLSF(R-3)シートづくり

- eff. Area: 10 x 10 mm²

-

TIPP'14論文再提出

- SrCounter_v10

2015/01/08 – 09

EASIROC module Calibration

- setup [OK]
- data collect [OK]
- analysis [an-finish]
- conclusion [an-finish]

CAMAC Calibration

2015/01/07 H.I.TO

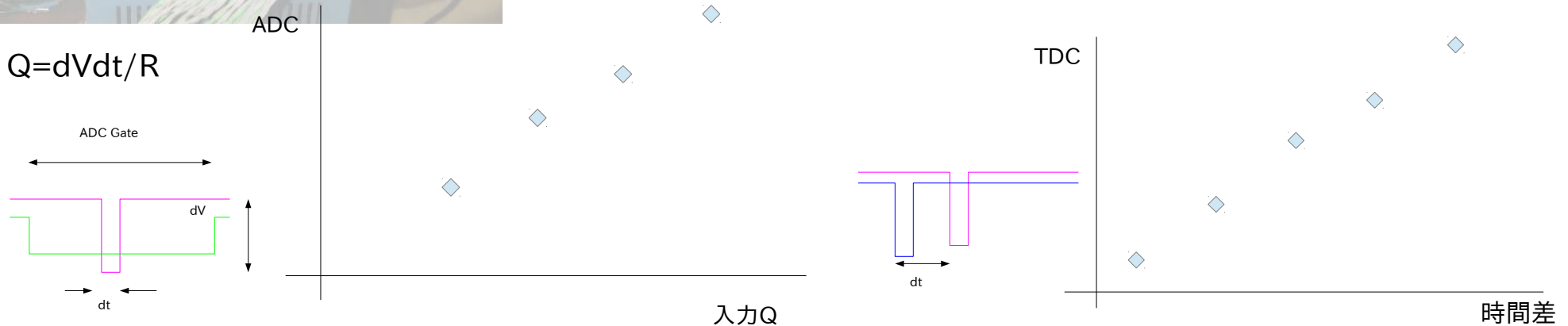


CAMAC CRATE CONTRPLLER
TOYO CC/7700

16CH ADC
豊伸電子C009

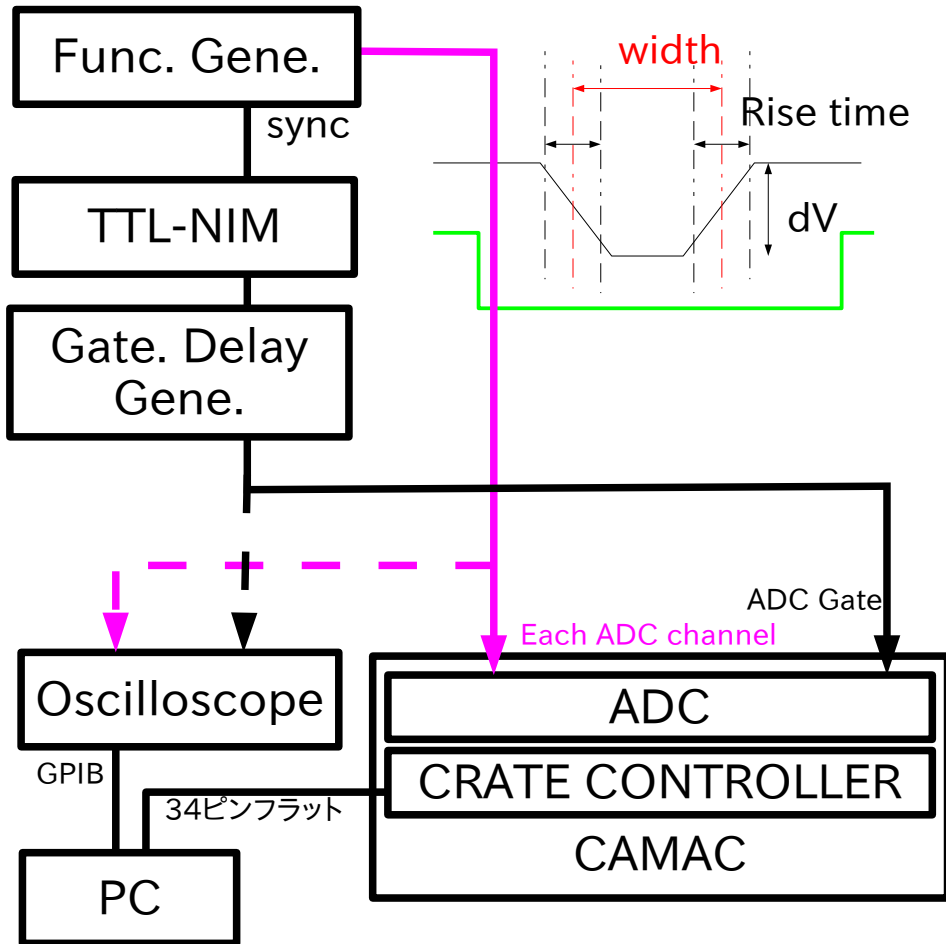
16CH TDC
林栄精器REPIC RPC-180

CAMAC ADC & TDC変換係数Calib.

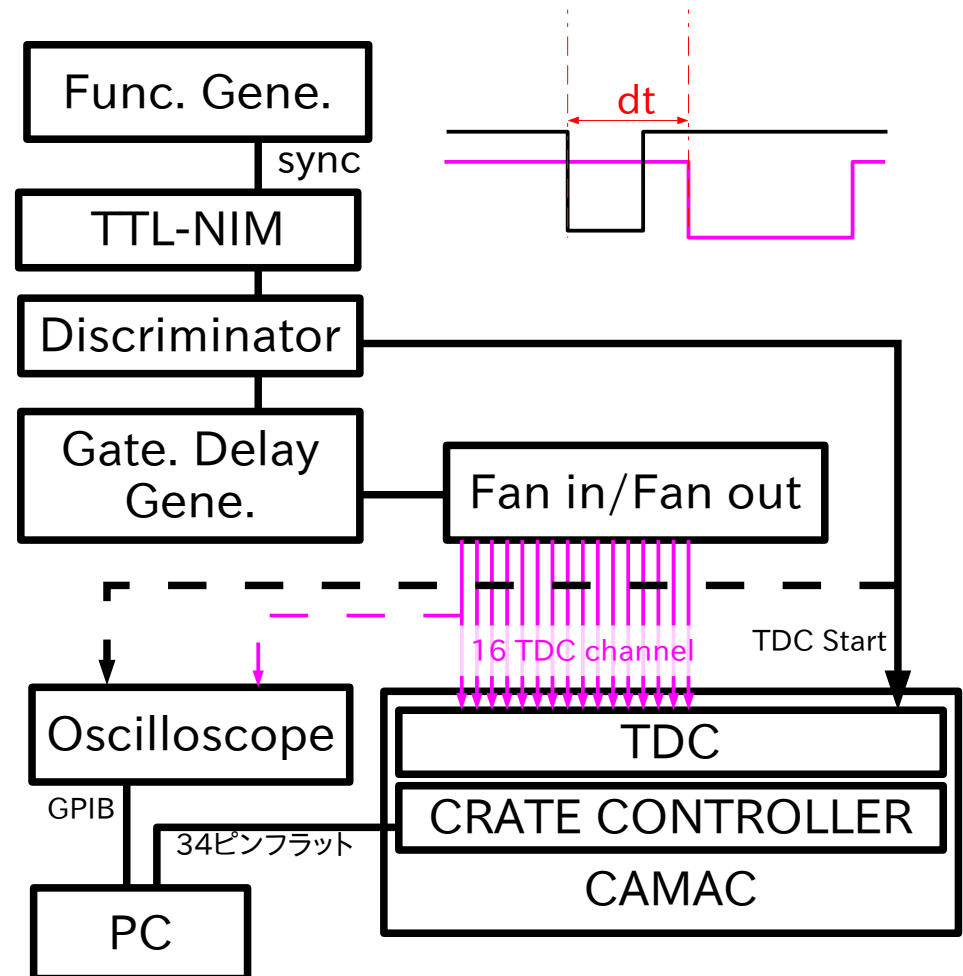


Setup

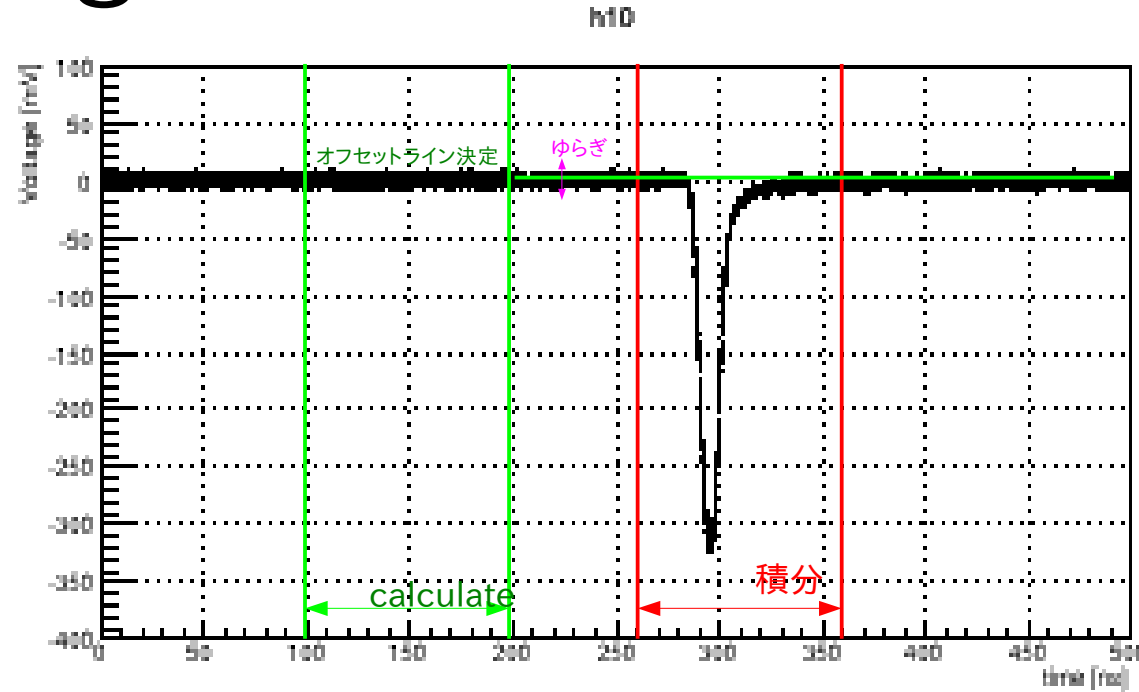
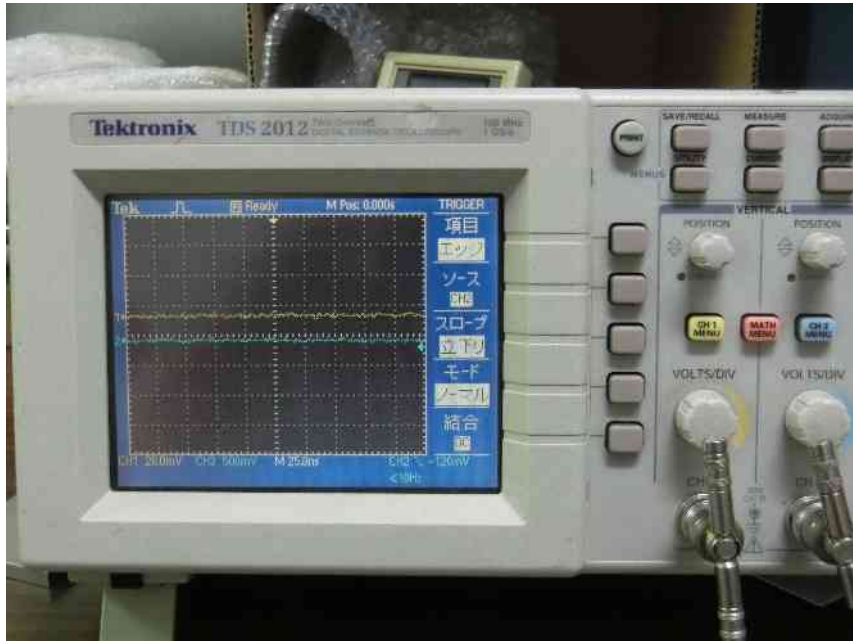
ADC Calib.



TDC Calib.



Oscilloscope injection charge calculation



Tektronix TDS2012 100MHz 1 GS/s

最小サンプル時間 1ns

積分方法 1. トリガー前情報 ... オフセットライン決定
ゼロ点のゆらぎ

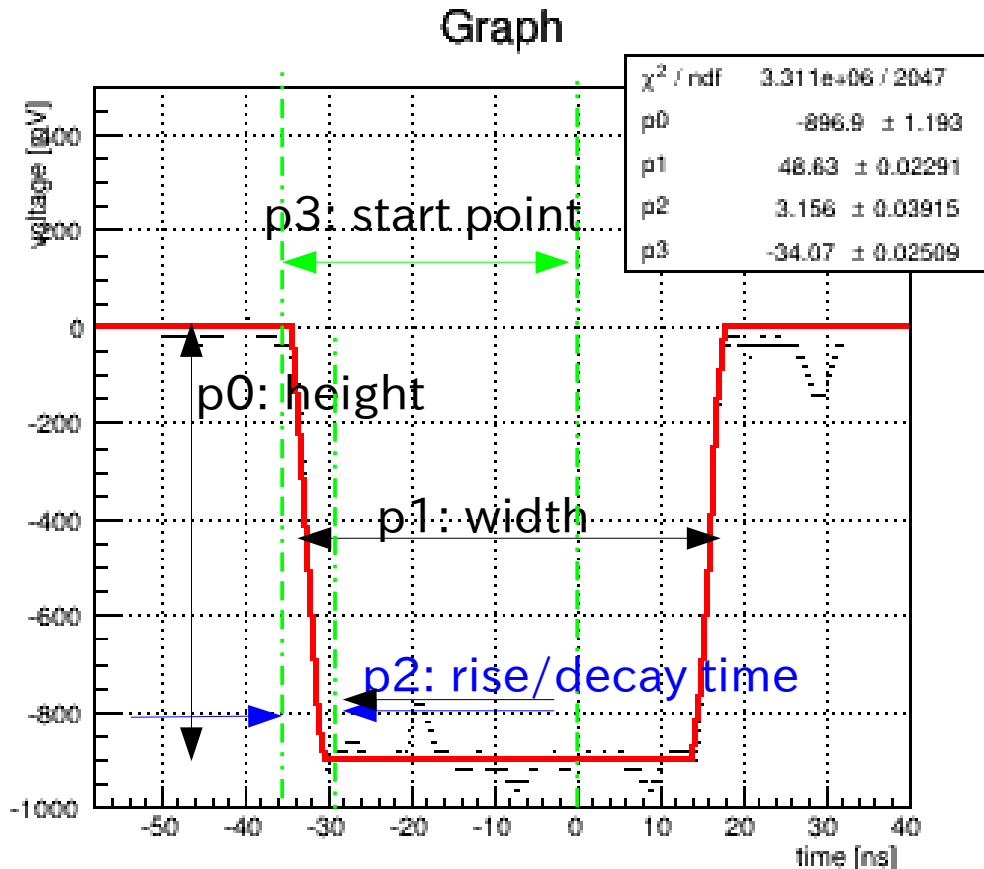
2. ADC Gate 100nsと合わせて電荷積分
... 内部抵抗 50Ω
台形近似積分

$$Q = \sum (v_i + v_{i+1}) dt / 2R$$

3. イベント数 10 ... 系統誤差 σ_{sys} > 統計誤差 σ_{stat}

$$\text{誤差} = \text{sqrt}(\sigma_{\text{sys}}^2 + \sigma_{\text{stat}}^2)$$

Oscilloscope digital signal time calculation



Time differential $dt = p3 + p2/2$

時間分解能評価

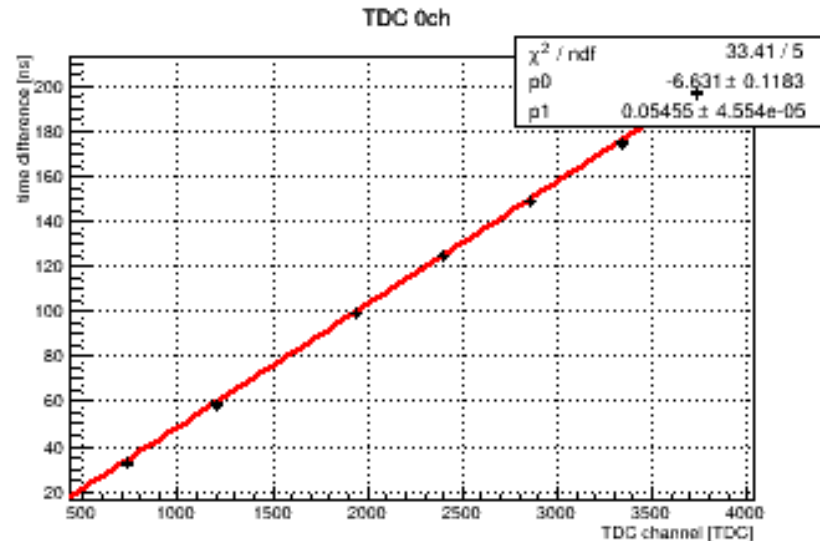
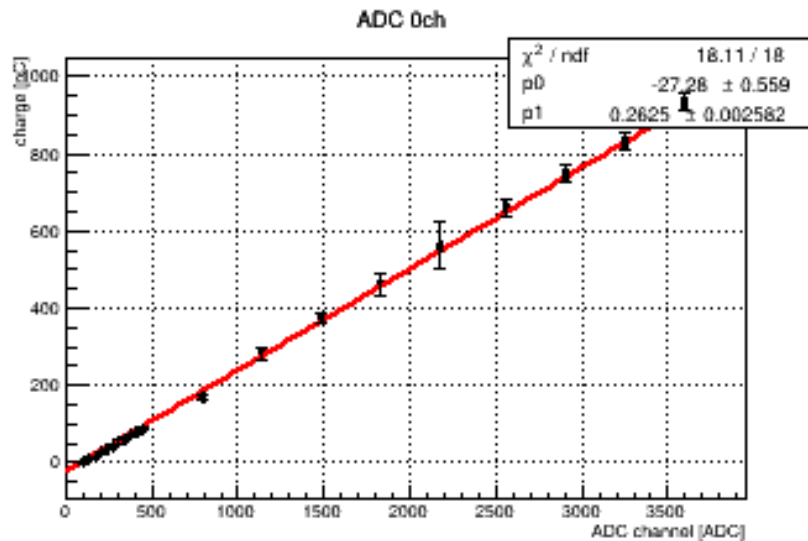
- Rise time ~ 3 ns
- Oscilloscope sample time ~ 1 ns
- event number 10

$$\sigma_{\text{sys}} \sim \sigma_{\text{stat}}$$

Fitting Function

$$y = \begin{cases} -p0/p2 * (x - p3) & (p3 < x < p3 + p2) \\ -p0 & (p3 + p2 < x < p3 + p1) \\ p0/p2 * (x - p1 - p3) & (p3 + p2 < x < p3 + p2 + p1) \end{cases}$$

Result

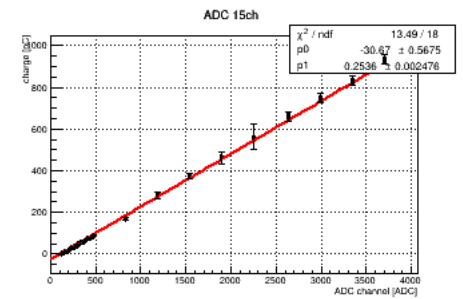
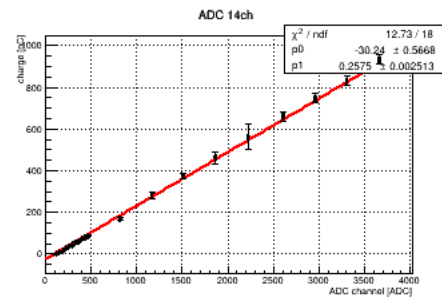
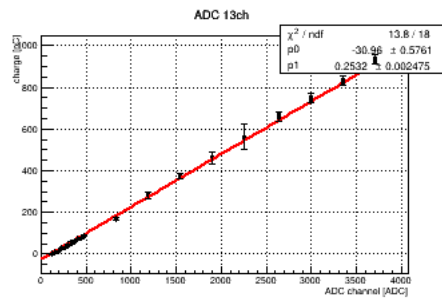
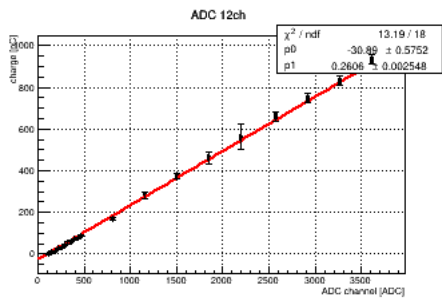
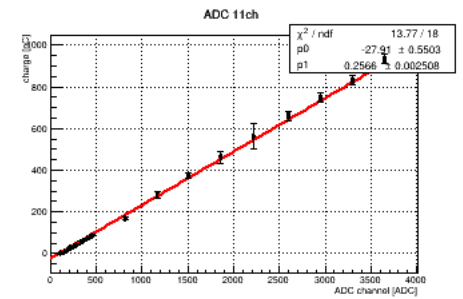
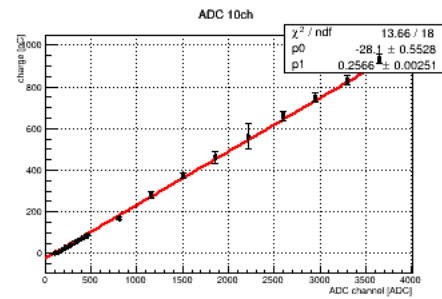
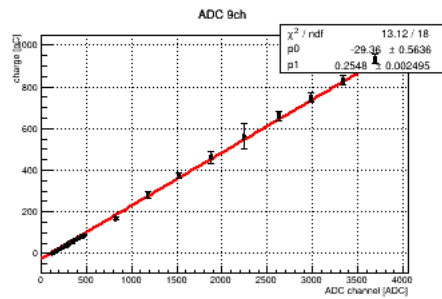
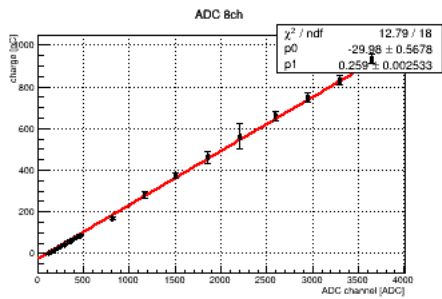
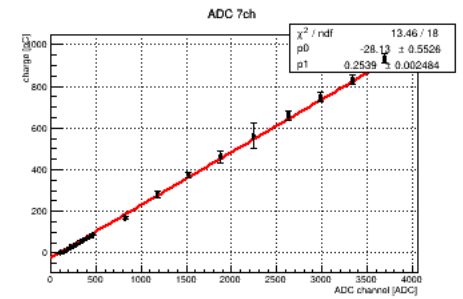
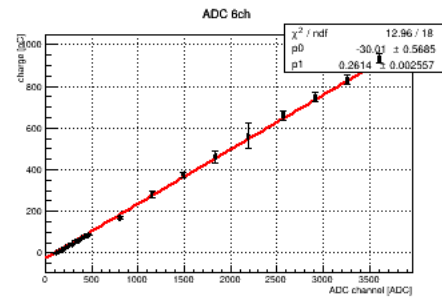
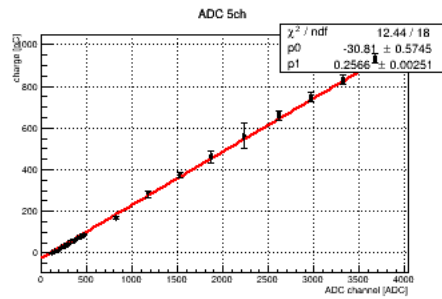
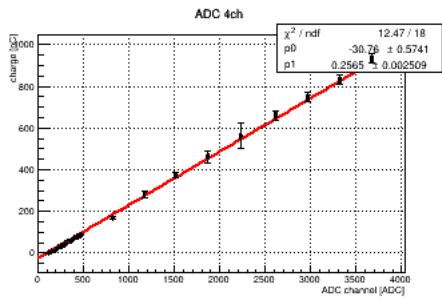
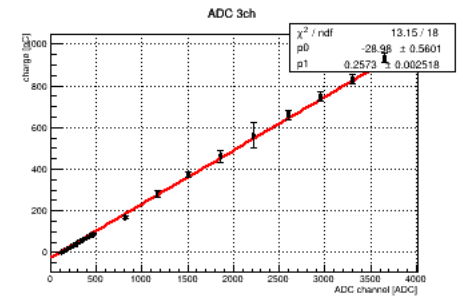
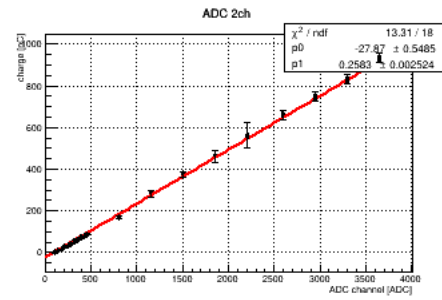
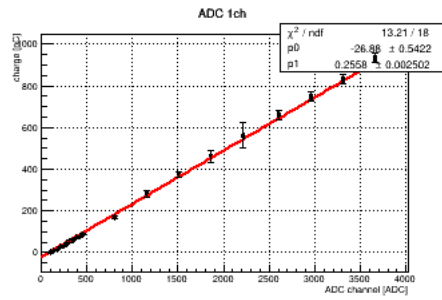
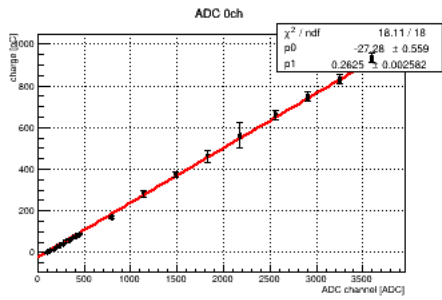


ADC coefficient = 0.26 pC/ADC ... 豊伸電子C009
TDC coefficient = 0.054 ns/TDC ... REPIC RCP-180

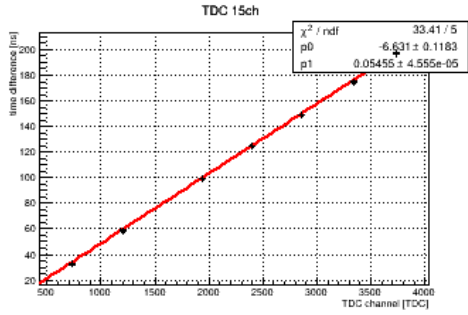
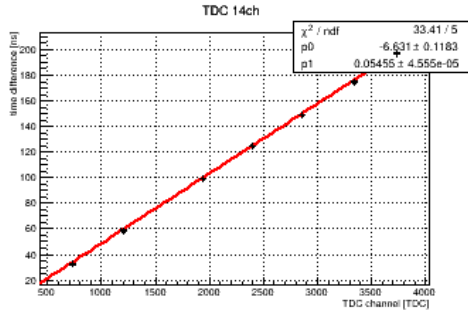
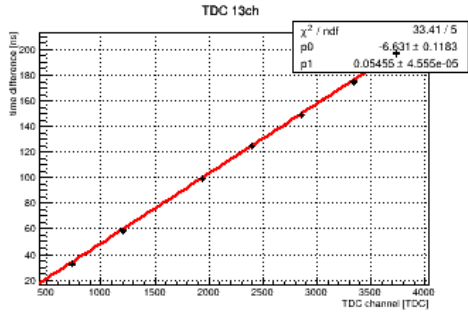
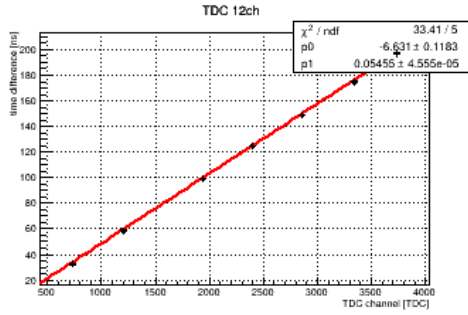
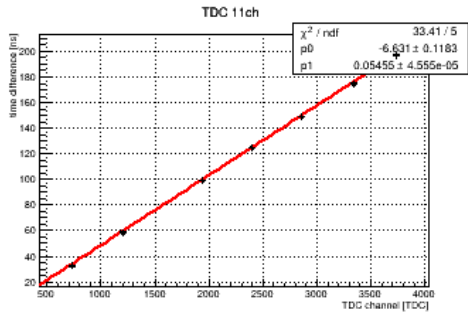
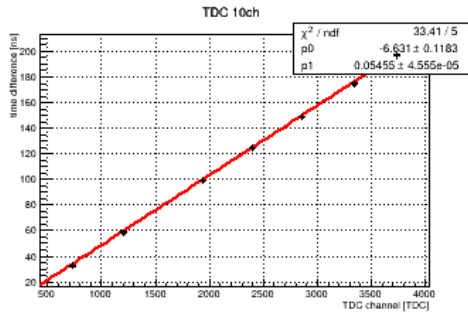
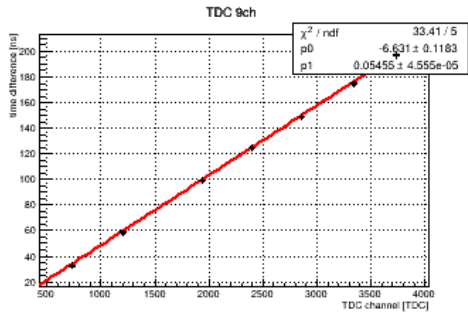
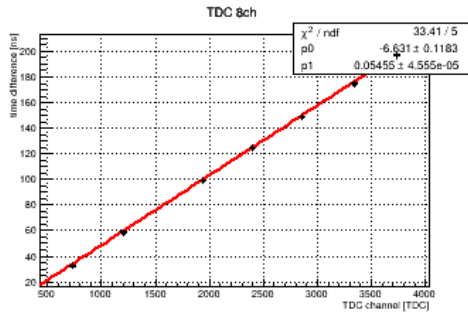
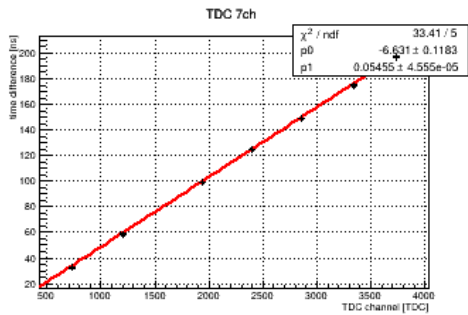
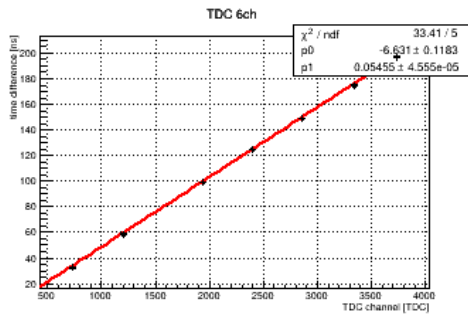
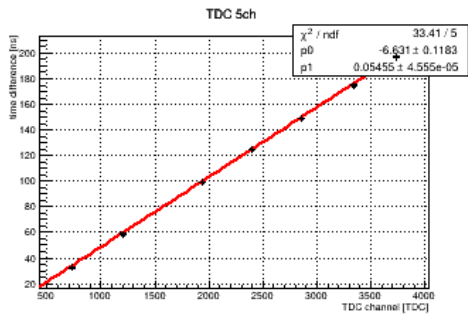
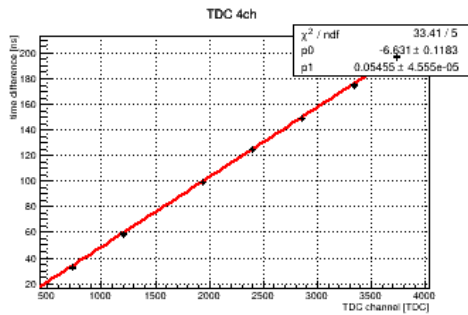
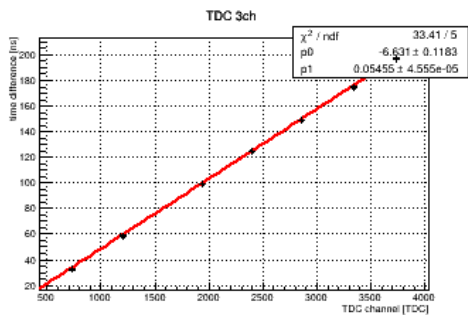
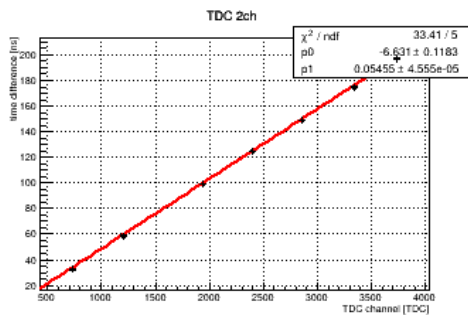
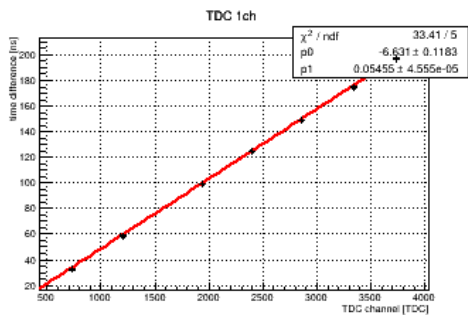
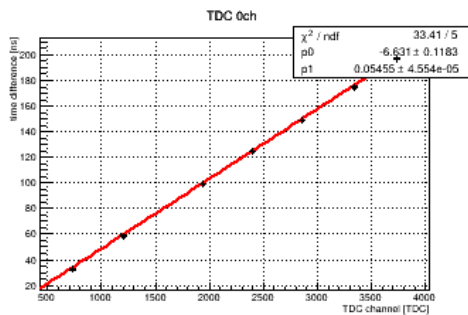
16 chの個性は次のページ

2015/01/10 H.ITO @Chiba Univ.

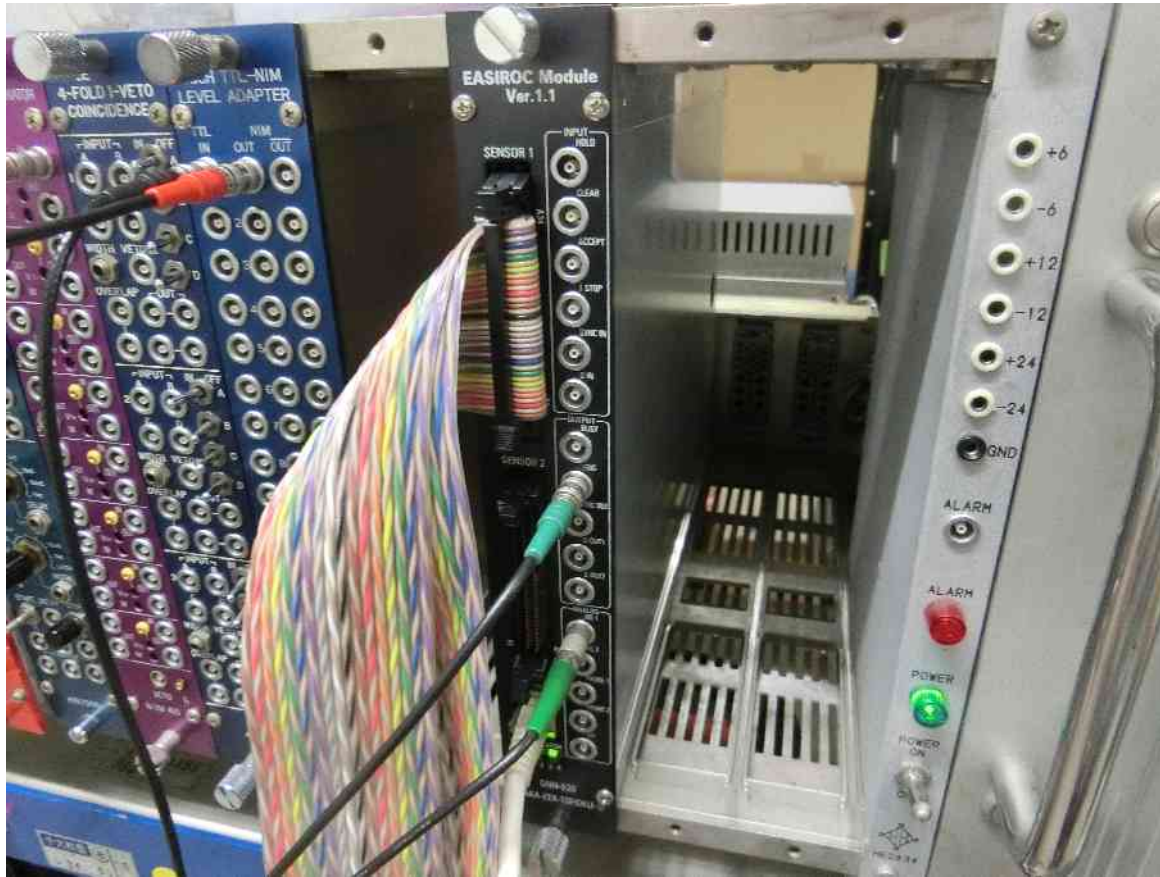
CAMAC ADC & TDC 変換係数 Calibration



CAMAC ADC & TDC 変換係数 Calibration

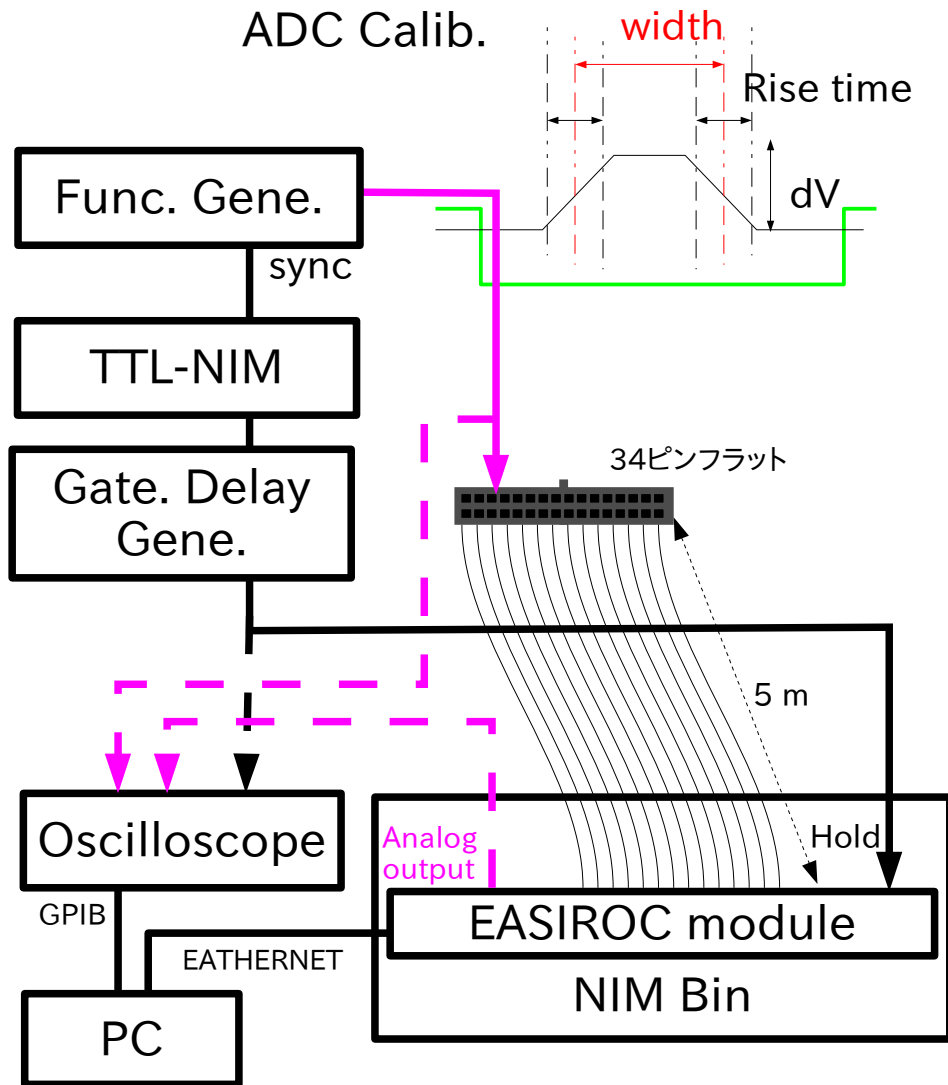


EASIROC module Calibration

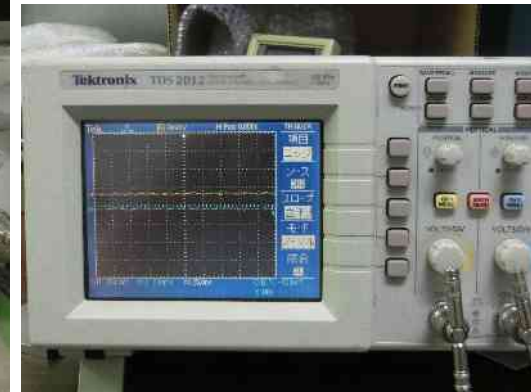


- Max 64 ch ADC
- 0 – 15 ch calibration
- 内蔵PreAmp Gain
- Slow Shaper 時定数

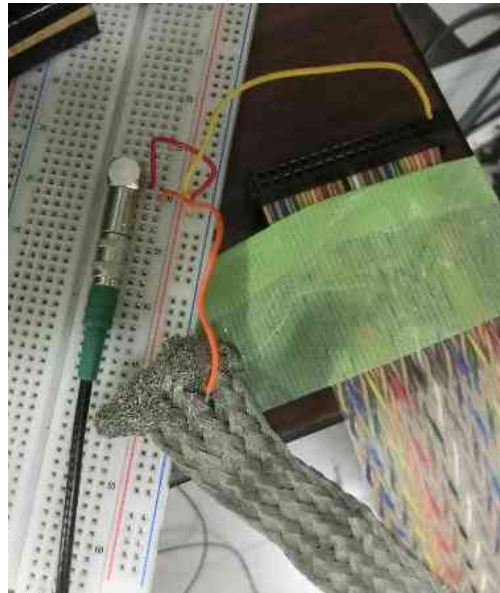
Setup



Func. Gene.



Oscilloscope

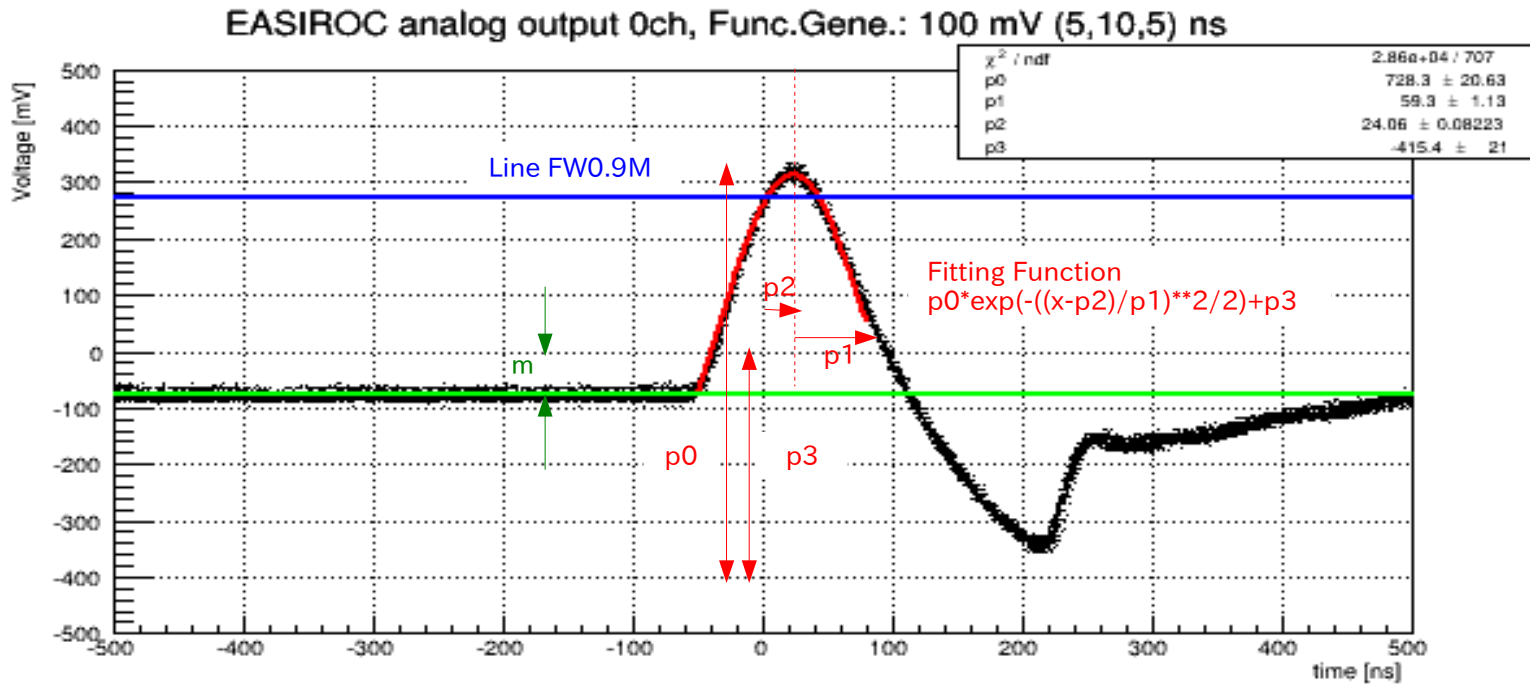
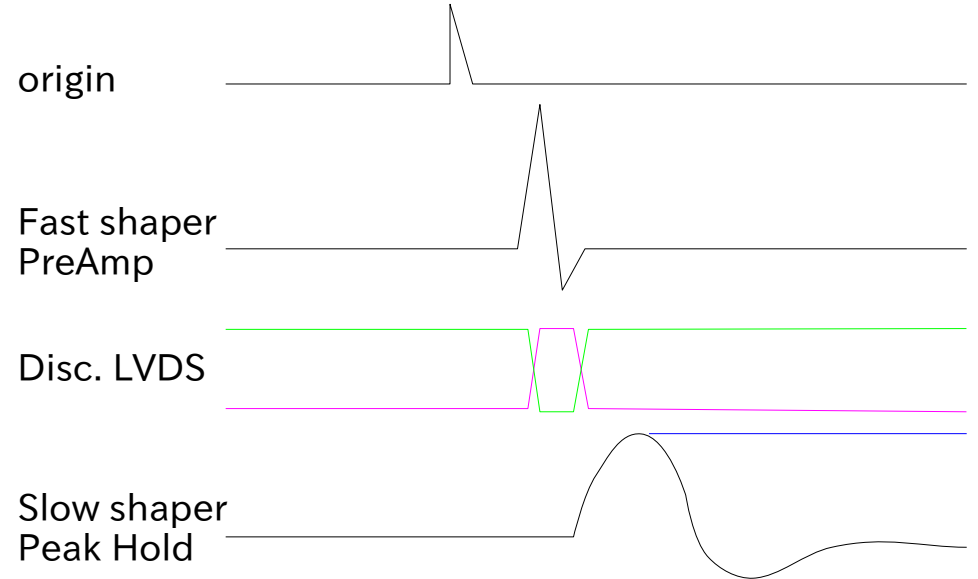
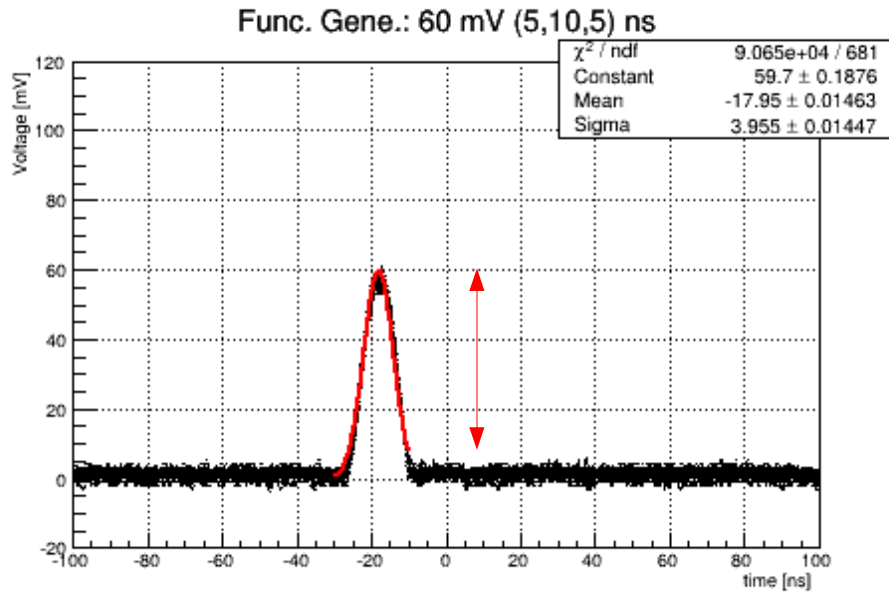


Pin connect



EASIROC module

EASIROC module Calibration



ここまで

来週のスケジュール 2015/ 01/ 13 - 16

EASIROC module Calib
Analysis

2015/01/16: センター試験会場のため18:00
以降入校禁止

DOI-PET/WLSF test

- GSO + Y-11 + OptGrease + PMT
… eff
- GSO + Y-11 + OptGrease + MPPC
… position reconstruct
- 医学物理学会報文集執筆 1/19 \times 切

河合さん金曜学生実験

学生実験用小型シンチカウンター作成

担当: 兼子

→ 様式、カウンター性能などまとめさせる

… 寸法、ゲイン、エネ分解能評価、適性HV

修論作成1月末プレ完成予定

- 担当教官提出
- 2月: 一次添削、修論発表2/9-10
- 3月: 最終 \times 切

林栄精器、牧さんと打ち合わせ

- EASIROC ケーブル発注見積もり
- 要望書作成