Response of PWO to photons with energies from 10 to 62 MeV using Vacuum Photo-Tetrodes (VPTTs) Part-II.

Károly Makónyi, Dirk Wölbing, P-E.Tegnér, K. Marcks von Würtemberg[1], B.Schröder, K. Hansen, M. Lundin, L. Isaksson [2], T. Johansson, K. Fransson, P. Marciniewski[3]

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[1]Department of Physics, Stockholm University

[2]Lund University

[3]Uppsala University

Outline

- Experiment
- Analysis
- Results

Experiment

- fADC from Upssala (PANDA prototype)
  - Sampling Frequency: 80 MHz
  - Shaping time: $\approx$ 40 ns (σ)

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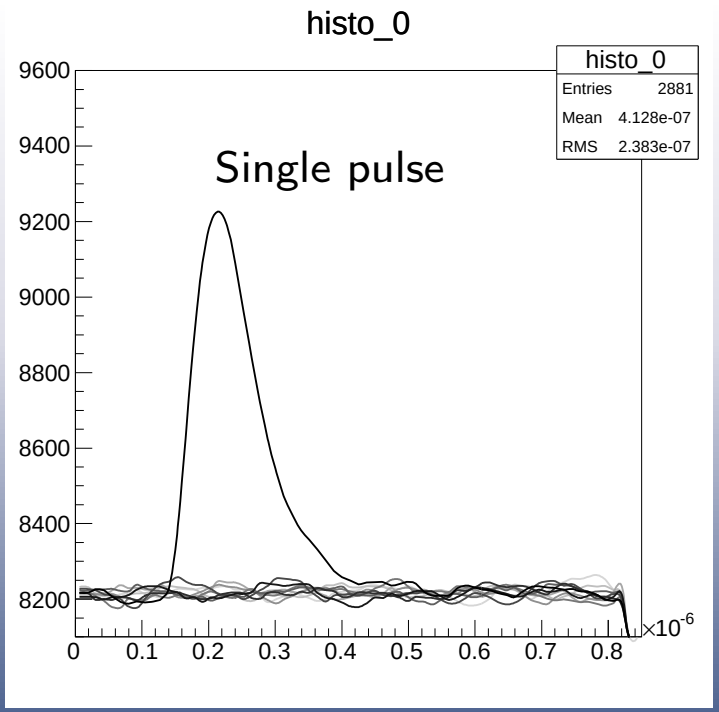
- fADC from Upssala (PANDA prototype)
  - Sampling Frequency: 80 MHz
  - Shaping time: $\approx$ 40 ns (σ)
- Trigger on four selected tagger-channels (12, 26, 39, 62 MeV)

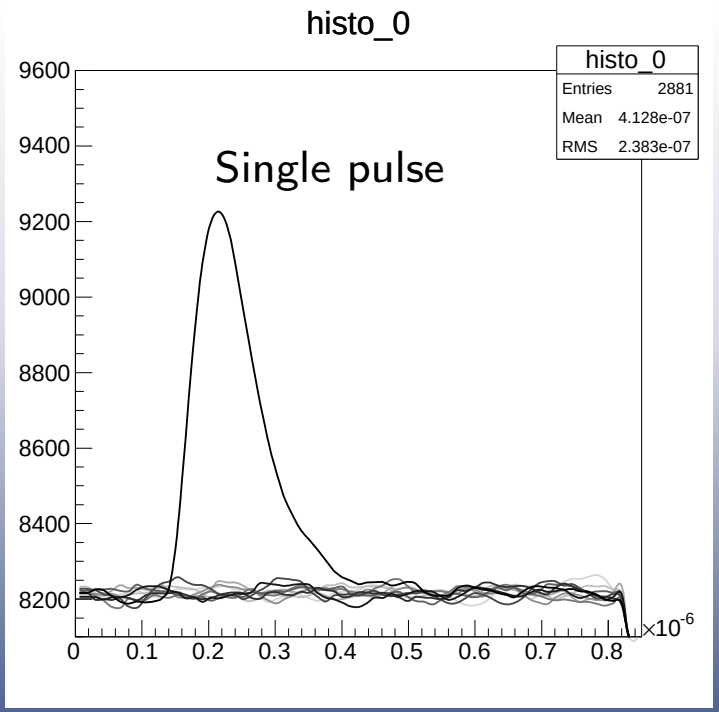
Analysis

- base-line is determined for every events



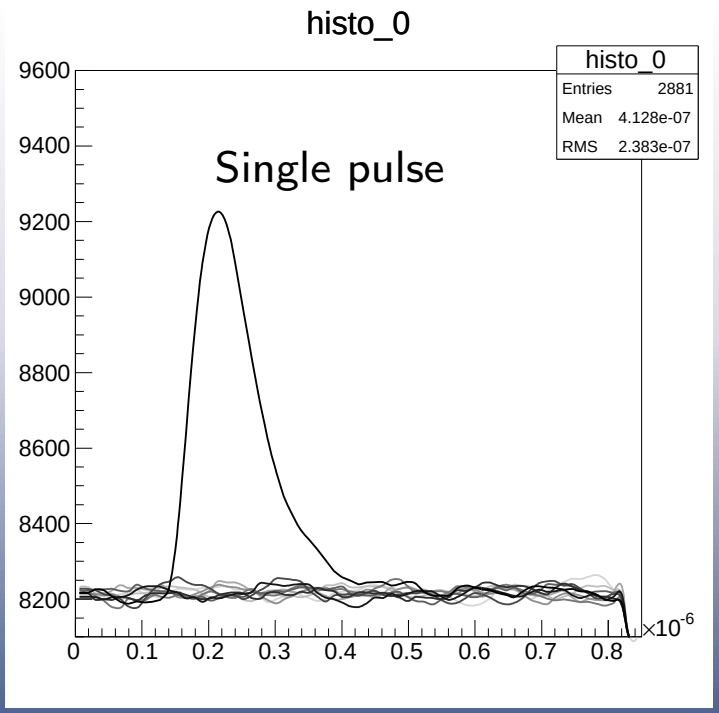
Analysis

- base-line is determined for every events
- integral is calculated



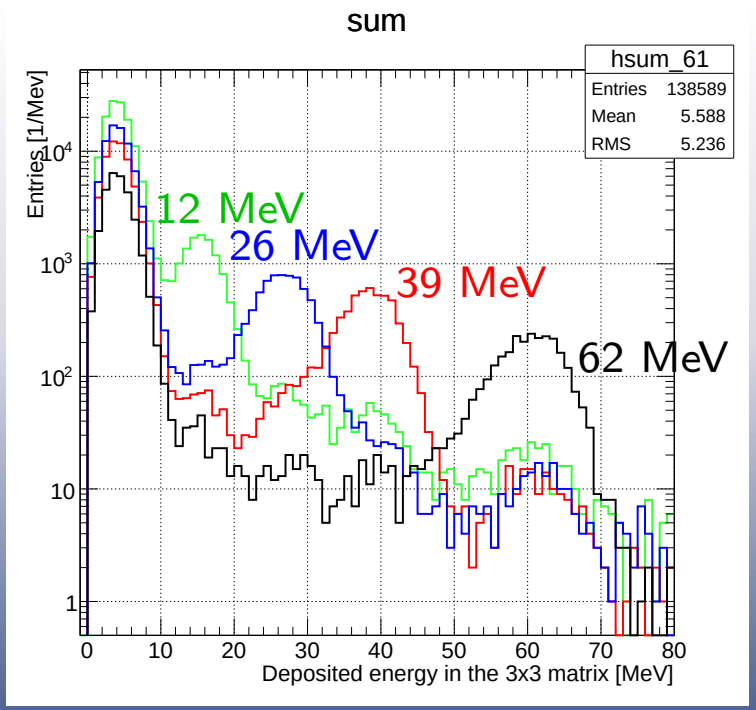
Analysis

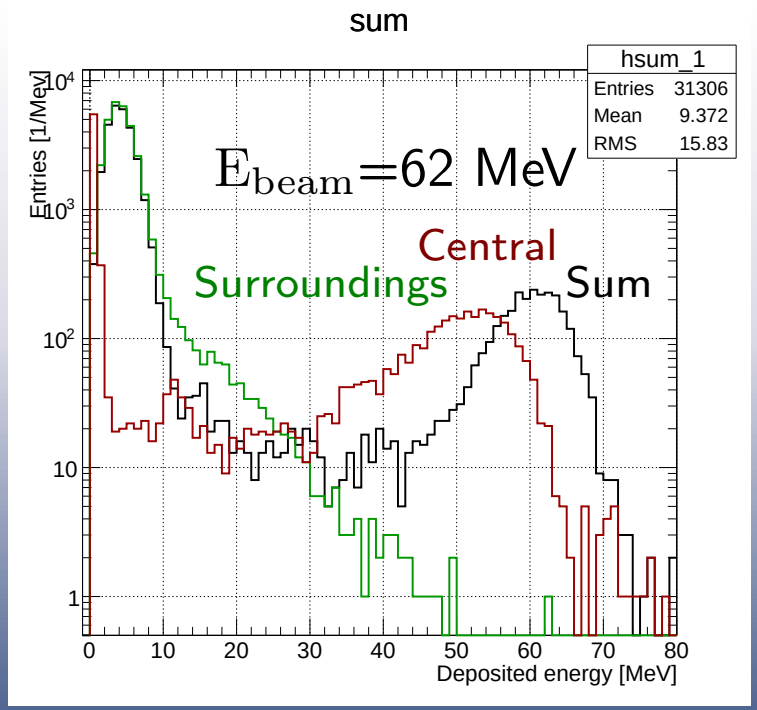
- base-line is determined for every events
- integral is calculated
- filled into histos



Analysis

- base-line is determined for every events
- integral is calculated
- filled into histos
- calibration is similar as Dirk has described

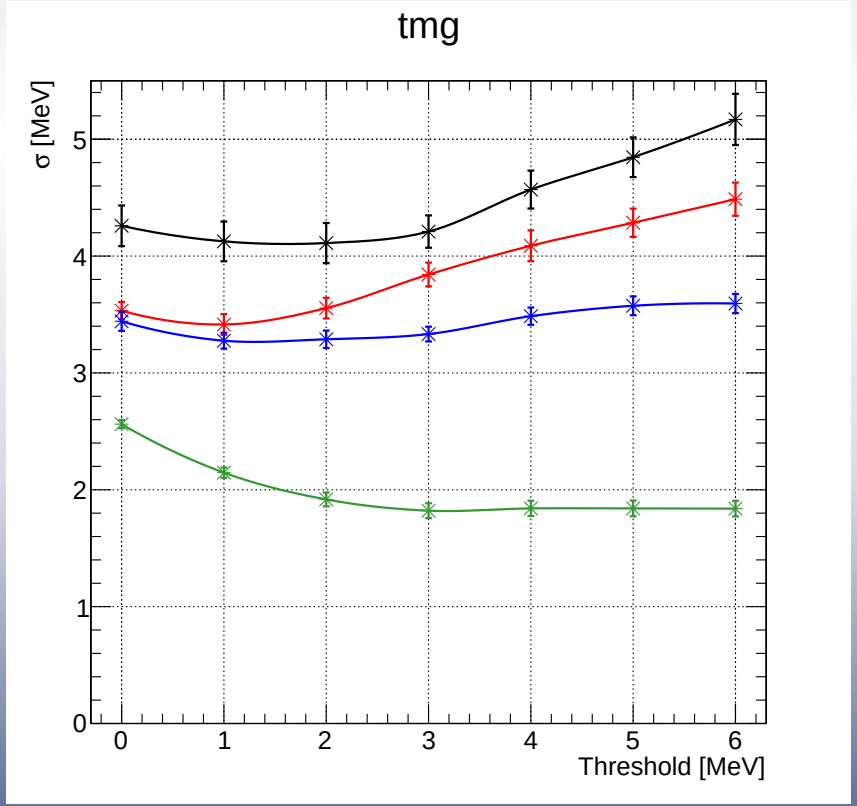




Results

- Optimal Threshold
  Threshold was applied only on the 'surrounding' crystals

$E_{beam} = 62$ MeV
$E_{beam} = 39$ MeV
$E_{beam} = 26$ MeV
$E_{beam} = 12$ MeV



Results

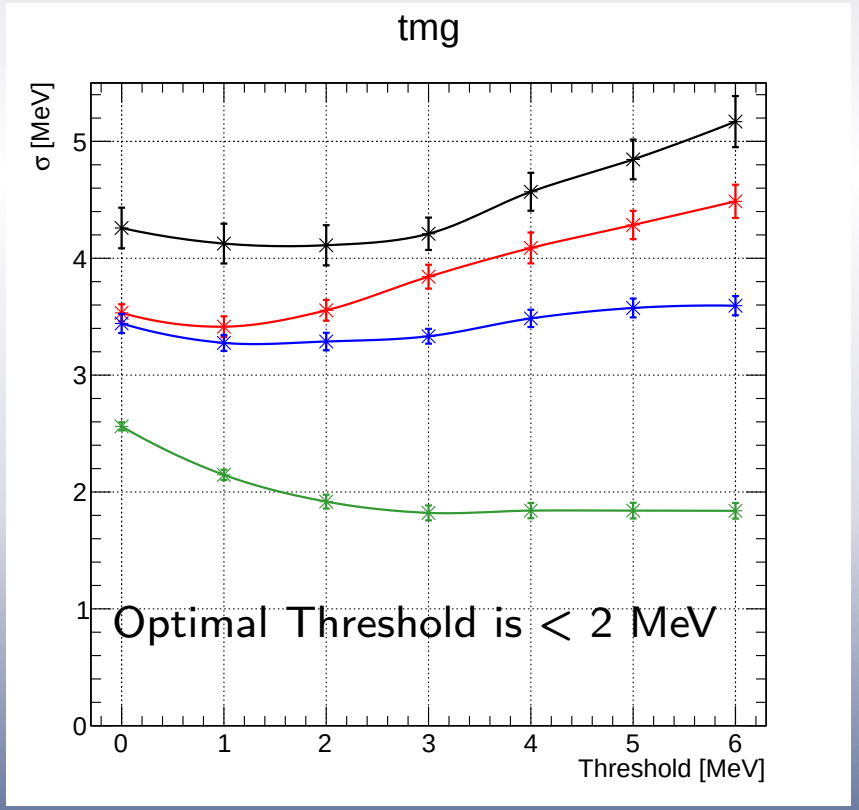
- Optimal Threshold

$E_{beam} = 62$ MeV

$E_{beam} = 39$ MeV

$E_{beam} = 26$ MeV

$E_{beam} = 12$ MeV

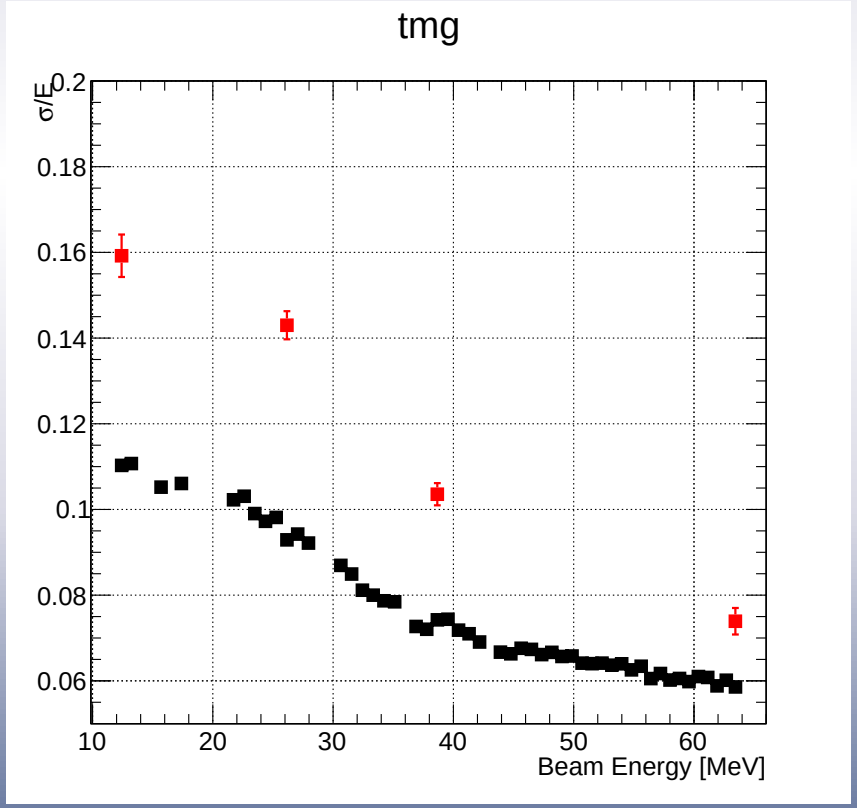


Results

- Optimal Threshold
- Relative resolution

fADC [PANDA prototype] -
2 MeV threshold,
$\approx$ 40 ns shaping

0.8μs shaping,
very low threshold



Thank You