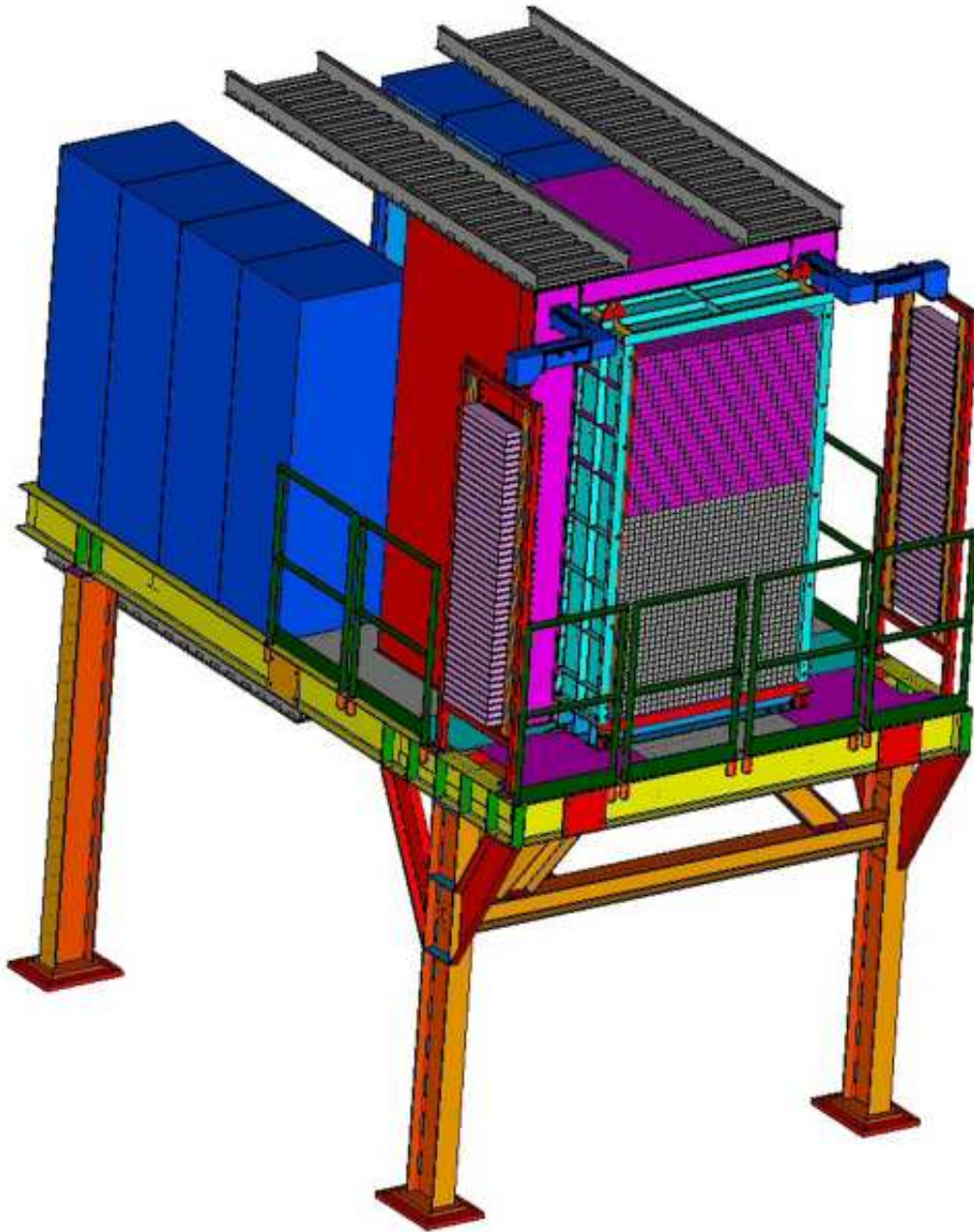


# BigCal

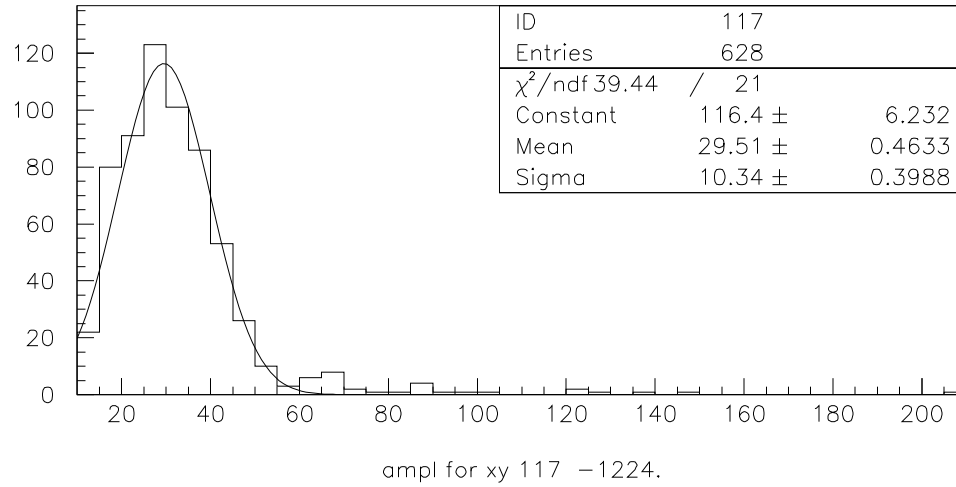
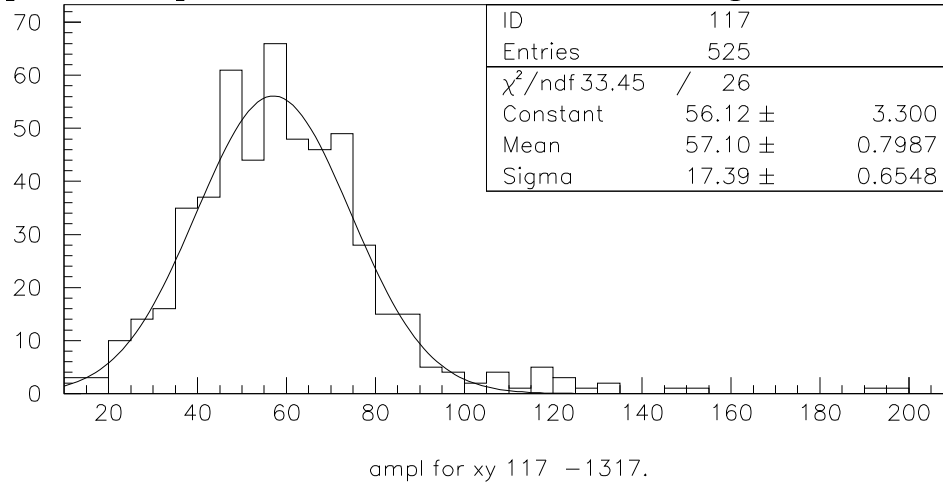


## Status of BigCal

- BigCal being tested with cosmic rays ( Lubomir Pentchev, W&M)
  - Scintillators in placed above and below BigCal to form cosmic trigger.
  - Yuri Melnik, Yuri Goncharenko, Yuri Matulenko arrived March 2005 from IHEP
  - Melnik and Goncharenko have worked on hardware:
    - \* Setup Protvino HV booster
    - \* Traced down problems (bad cables, bad MUX channels, loose connections)
  - Matulenko developed software for automating gain matching of HV with cosmic rays.

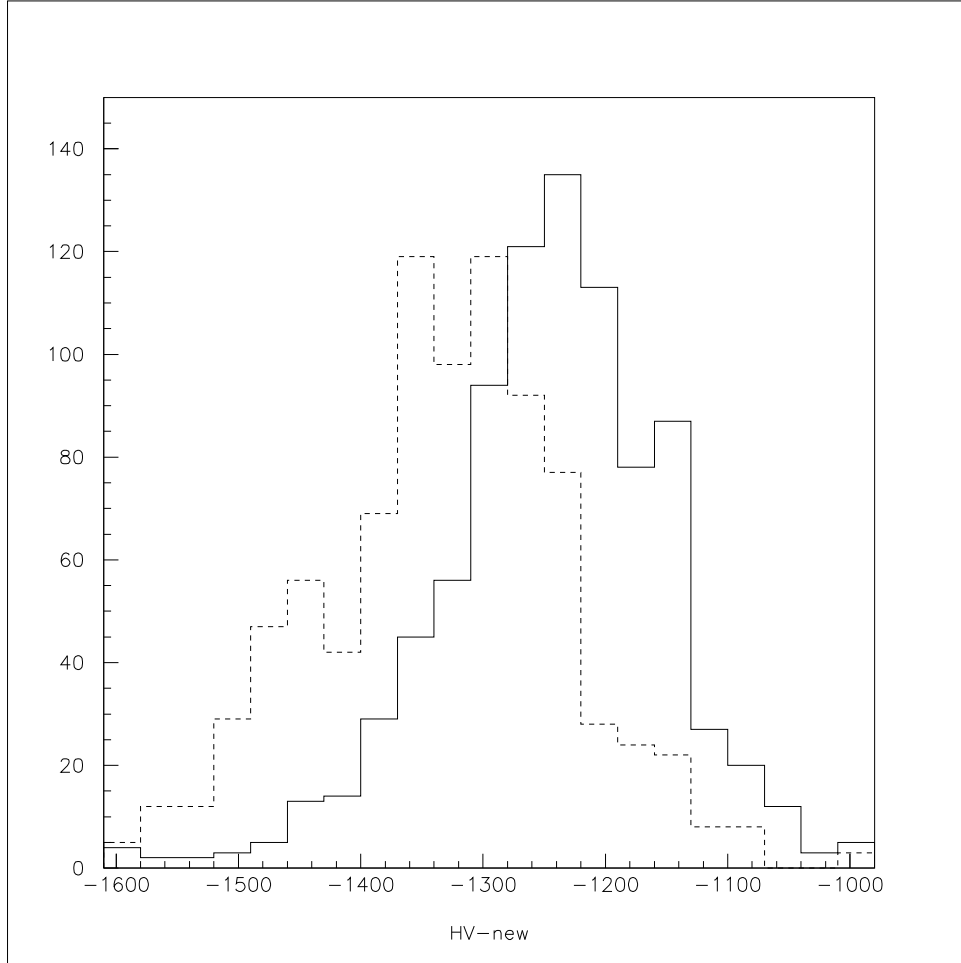
# BigCal calibration

Example ADC spectra for one PM at 2 HV settings



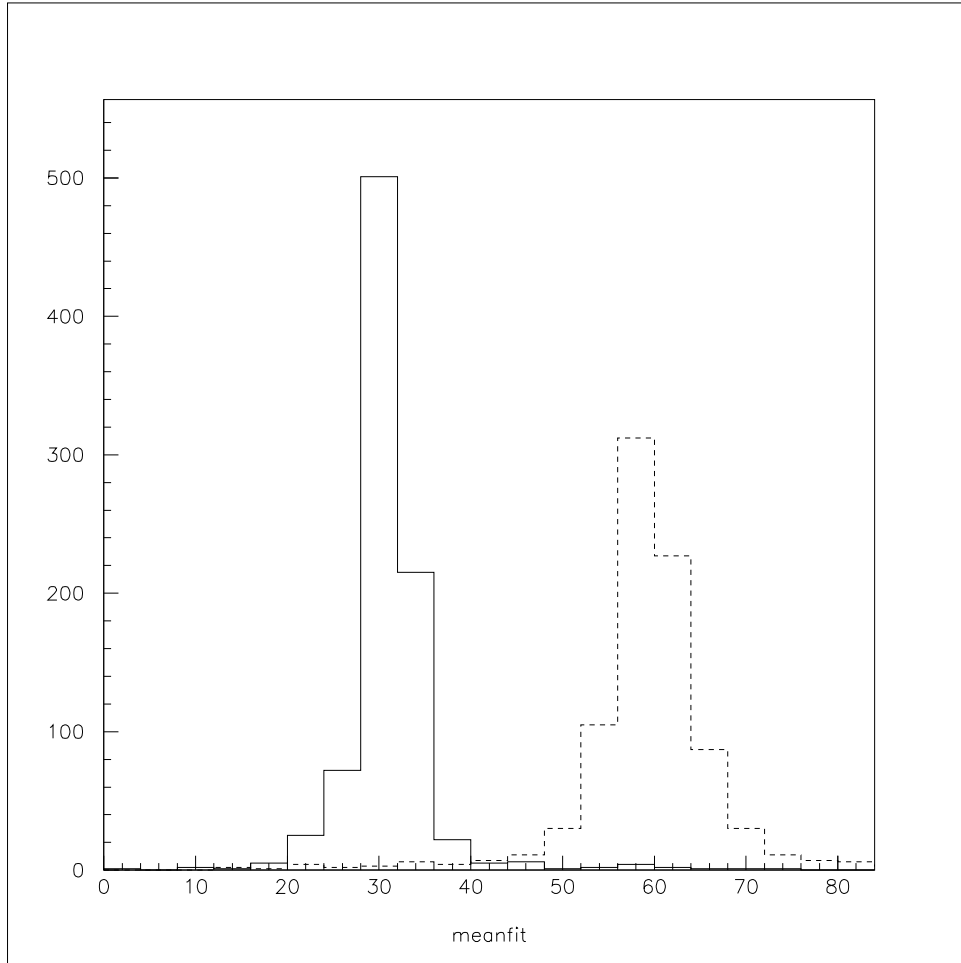
# BigCal calibration

Distribution of HV settings after gain matching to channel 60 (dashed) and channel 30 (solid)



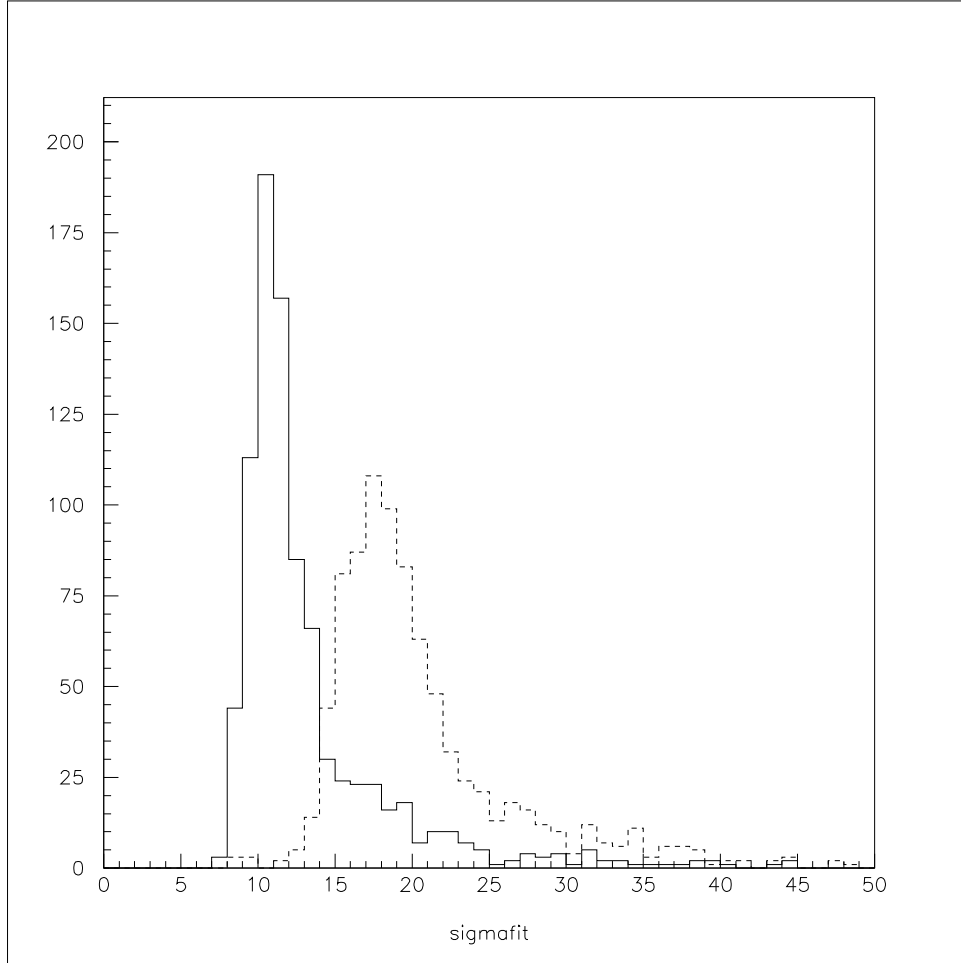
# BigCal calibration

Distribution of mean ADC after gain matching to channel 60 (dashed) and channel 30 (solid)

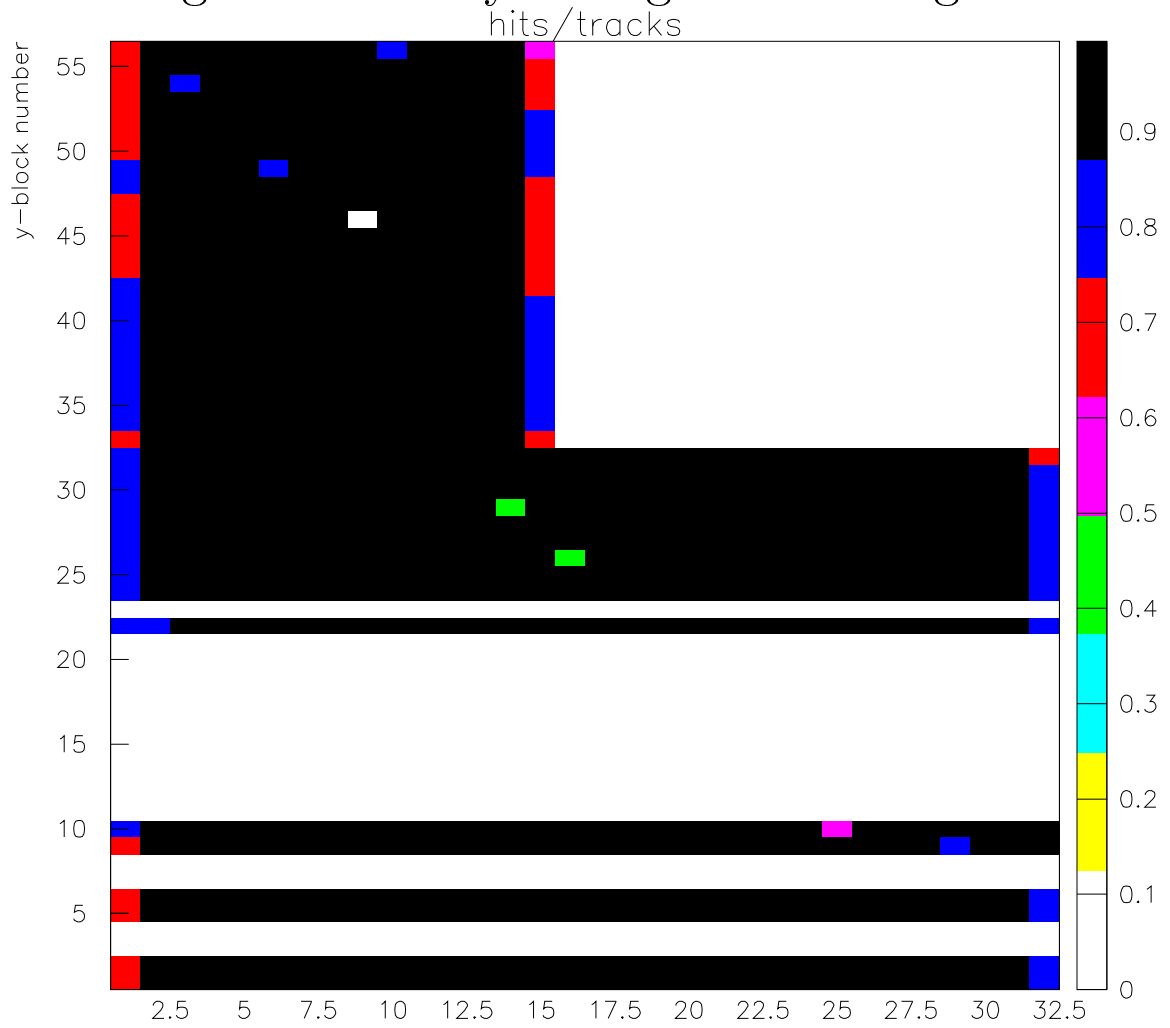


# BigCal calibration

Distribution of sigma ADC after gain matching to channel 60 (dashed) and channel 30 (solid)



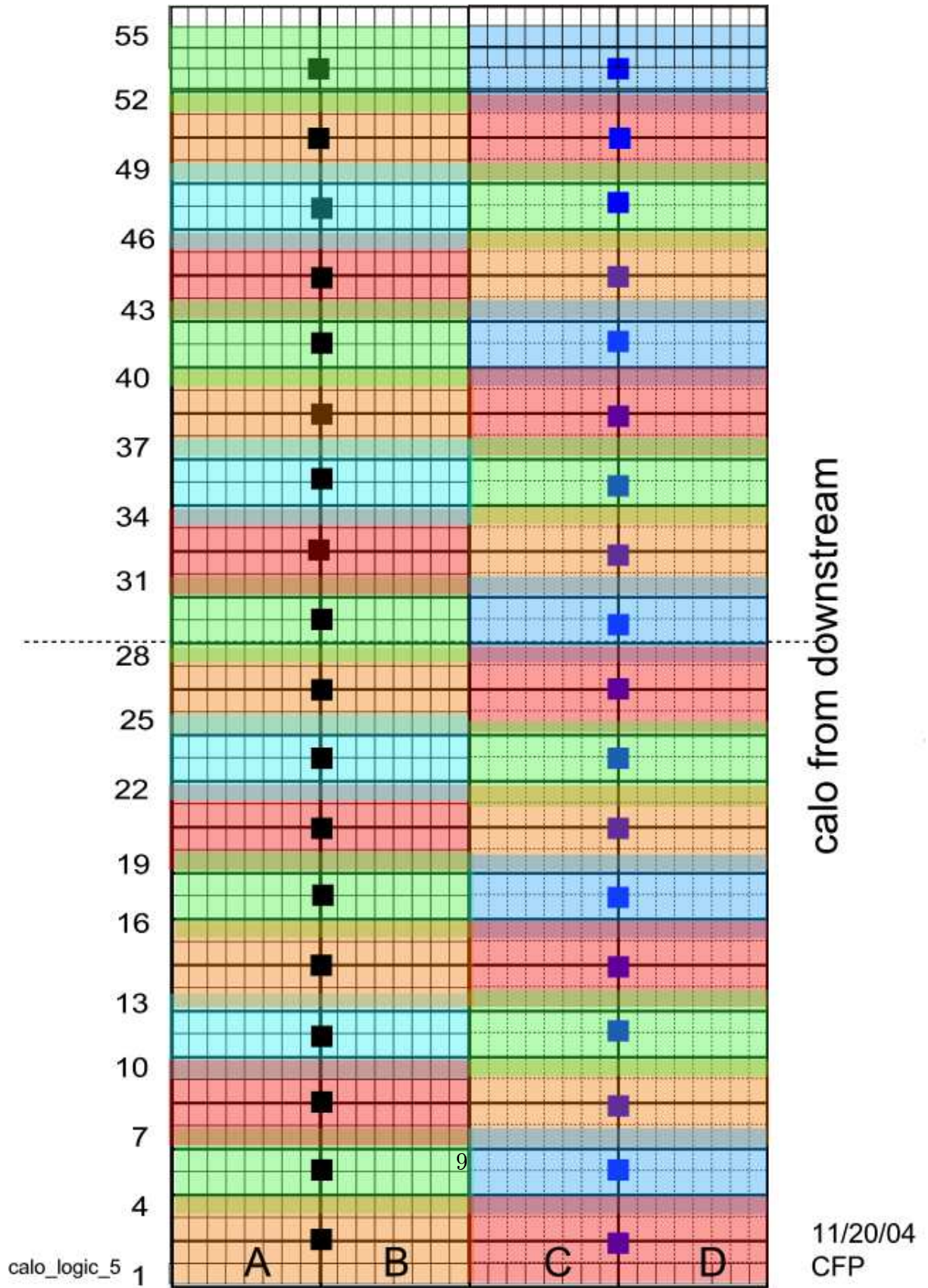
# BigCal Efficiency after gain matching



## BigCal Trigger

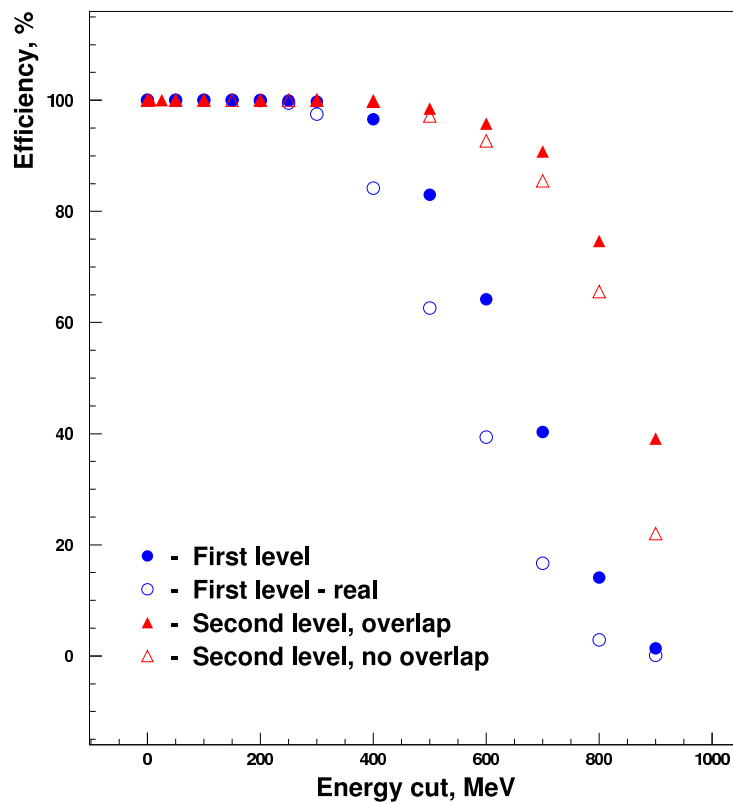
- Each PM signal goes to summing module (Rutgers). The summing module takes 8 inputs and produces eight individual output signals (5x larger) for ADC and 6 summed outputs.





## Trigger tests in Monte Carlo

- Vladimir Kravtsov (IHEP) used MC to study different triggers
- MC used 1 GeV electrons on 32x32 Protvino lead glass blocks (50K events)
  - 1st level: 128 groups of 8 blocks
  - 2nd level : with 20 overlapping groups of 4x16 blocks
  - 2nd level : with 16 nonlapping groups of 4x16 blocks



## Electronics for trigger

- 20 summing modules ( 2x8 per module)
- 3 16 chan disc
- 3 logic FI/FO