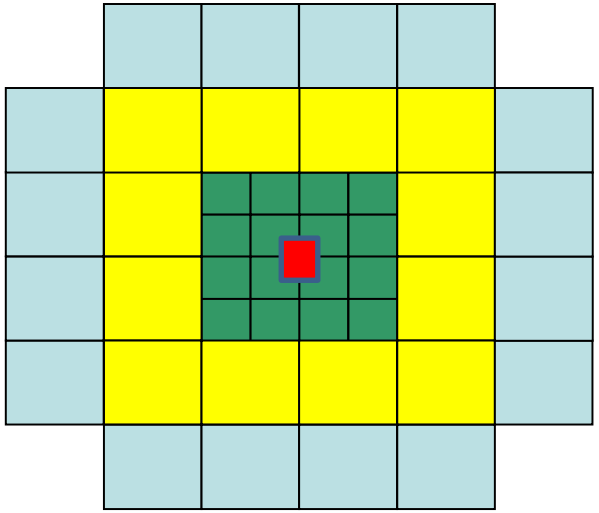
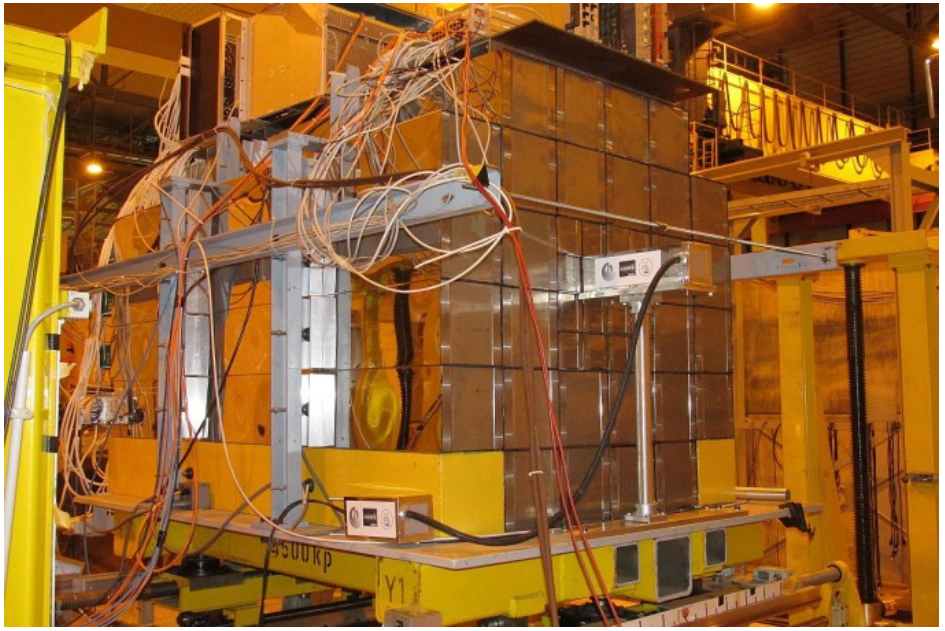
Calibrations of PSD NA61





Calibration program for main PSD NA61, April – May 2018:

- muon + proton calibration scan of all 45 modules (16 small (10x10 cm^2), 28 large (20x20 cm^2) and 1 short (10x10 cm^2))

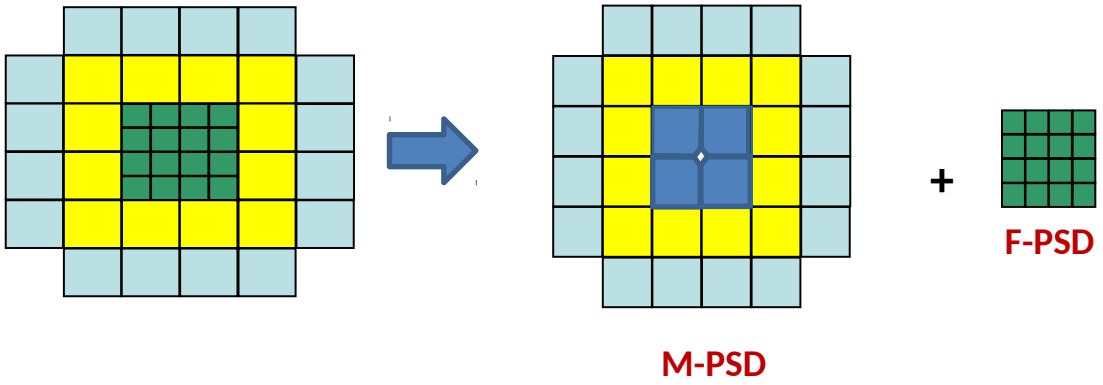
- muon + proton calibration scan at reduced HV on SiPMs in small modules (for PbPb 2018)

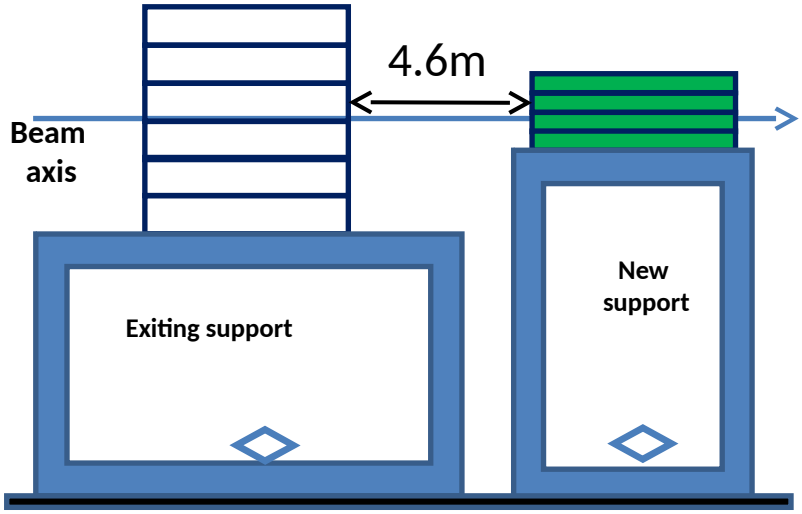
- energy scan of calorimeter response 10, 19, 30, 40, 80, 120, 150 and 200 GeV/c beams

- LED calibration of one large module for light yield estimation

Proposed PSD upgrade (2017)

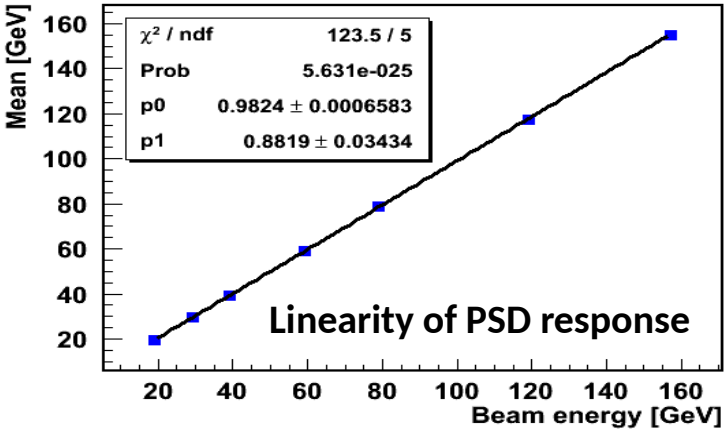
Replace 16 central small modules in present PSD by 4 new large modules with truncated edge to have hole in the center with 60 mm diameter and use existing 16 modules as new second calorimeter.

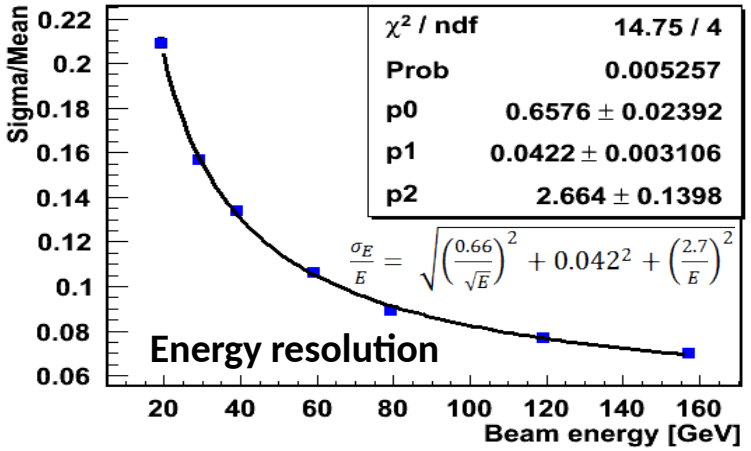


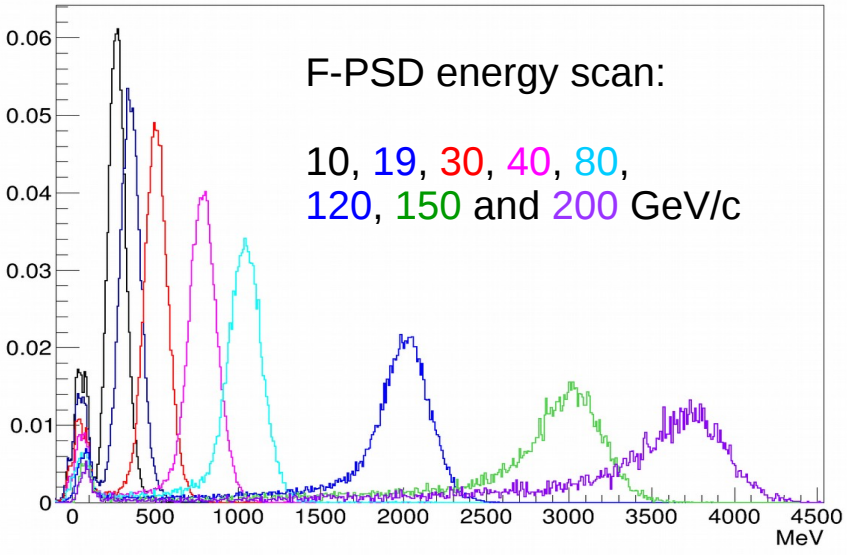


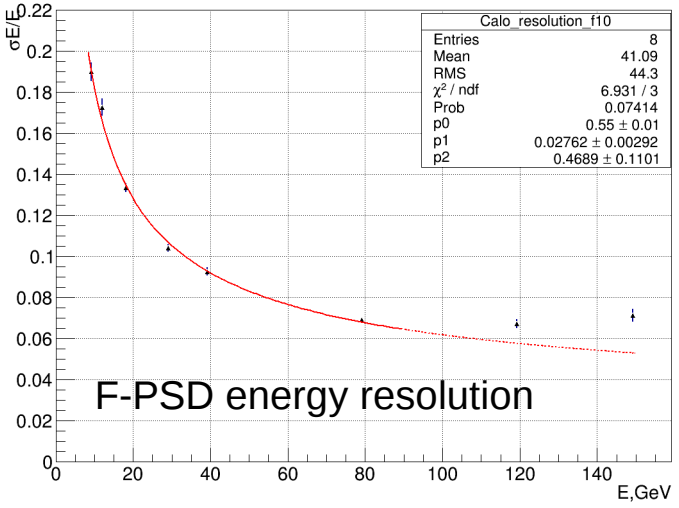
Photos of F-PSD behind main PSD (2018)

PSD performance

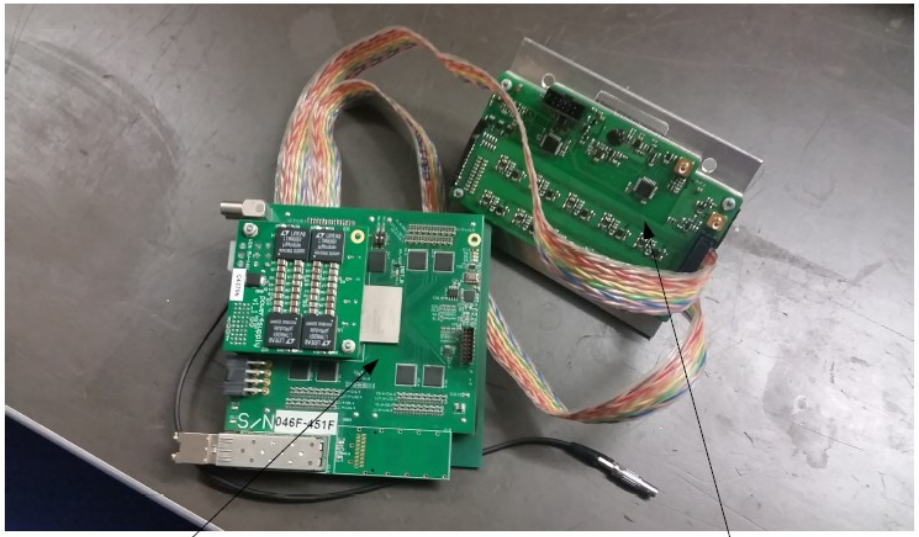








Different variants for PSD readout

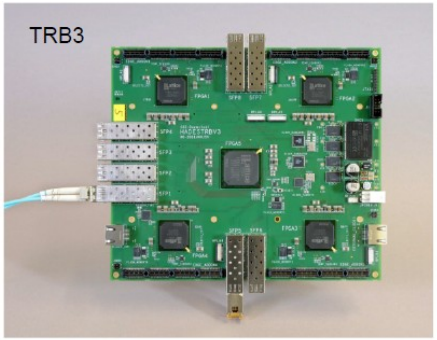


Dubna ADC64s2 readout board.

- 64 MHz pipe-line ADCs.
- 64 channes on board.
- 1 kHz trigger rate tested.
- Differential amplifiers and ADCs.

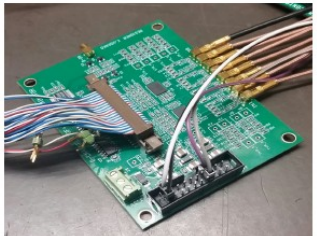
ToT FEE + TRB3 board.

- 256 channes on TRB3 board.
- NINO chip based design.
- DAQ functionality.
- Performance is to be tested.



TRBv3 - multi purpose time digitisation board:

- 23 ps RMS TDC (FPGAs)
- up to 256 channels
- DAQ functionality
- fast data transfer via gigabit Ethernet



ToT board - front-end charge-to-Time-Over-Threshold conversion:

- 8 MMCX inputs → 32 TDC channels on TRBv3 needed
- NINO chip based design
- threshold settings through TRB3 SPI protocol

Thank you for the beam!