



BESIII TB plans

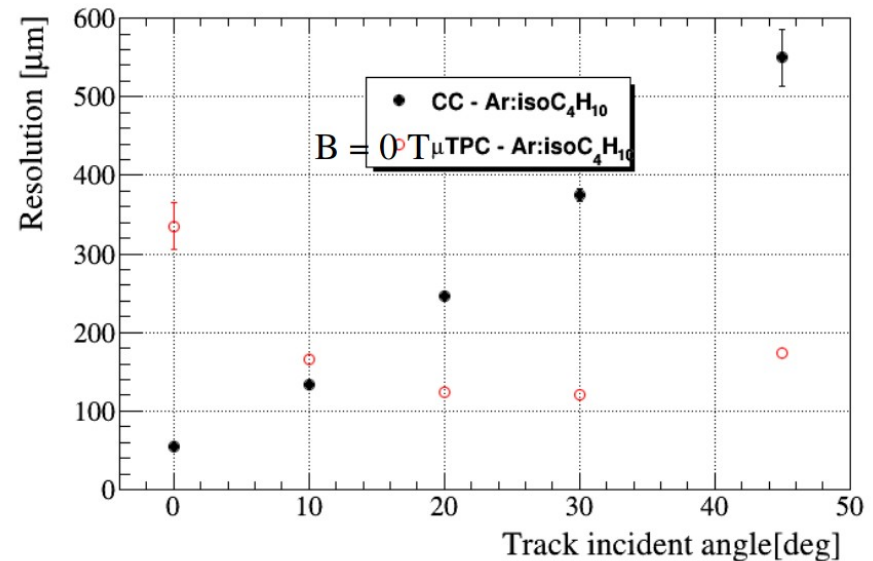
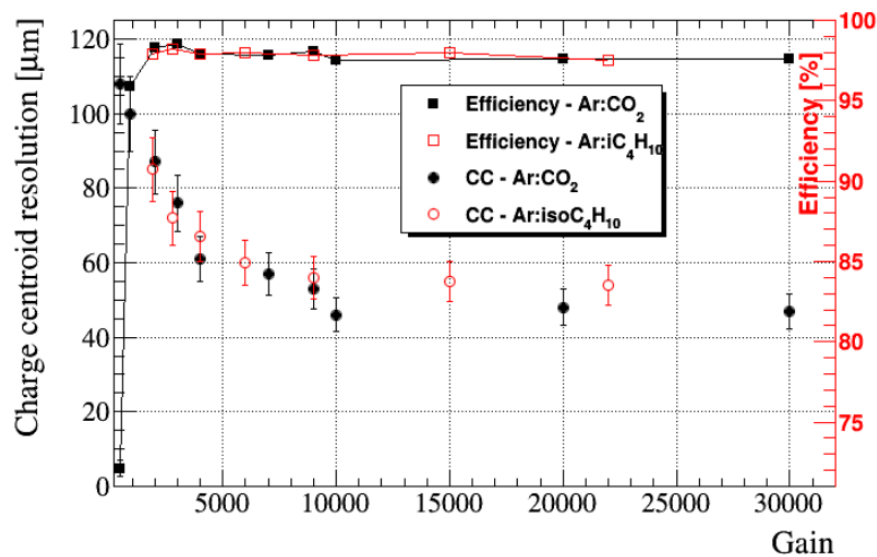
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On behalf of the TO-LNF-FE working group

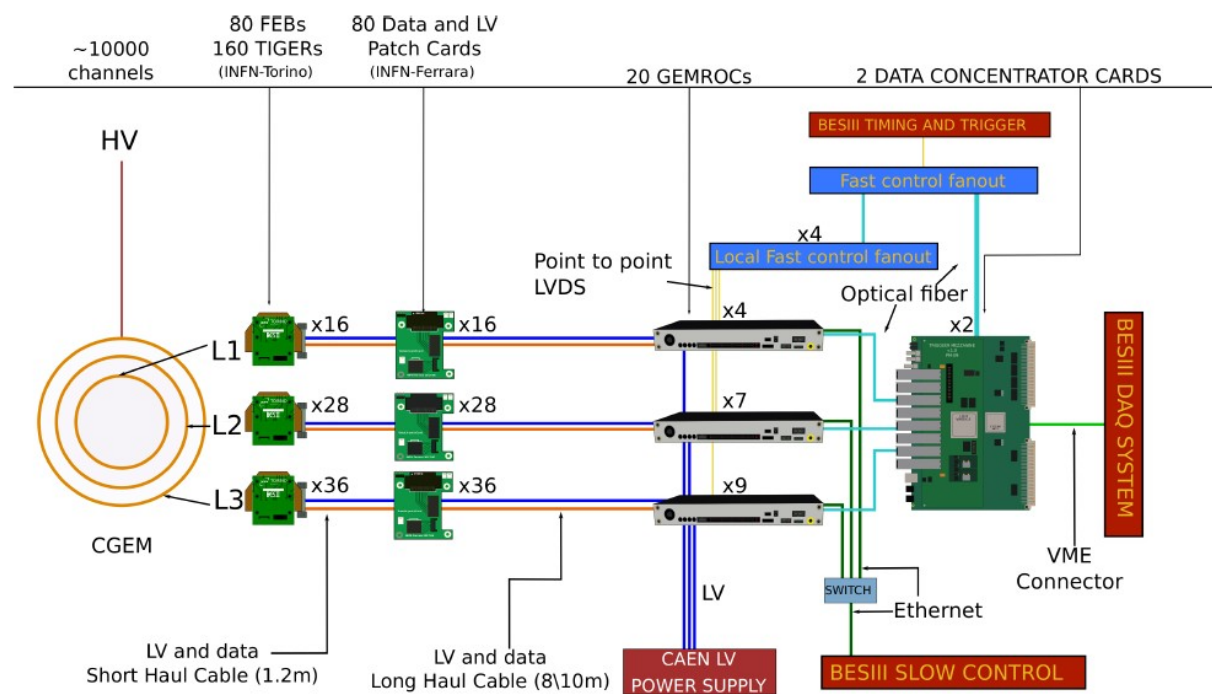
BESIII – Where we stand

We have performed a long R&D to develop a Cylindrical GEM detector for BESIII new Inner Tracker

- Between 2014 and 2018 several test beams with both planar and cylindrical prototypes with and without magnetic field



CGEM-IT readout chain



TIGER (Torino Integrated GEM Electronics Readout)

JINST 12 C07017

- 64 ch ASIC to extract time and charge information
- Two Readout mode: ToT and S&H

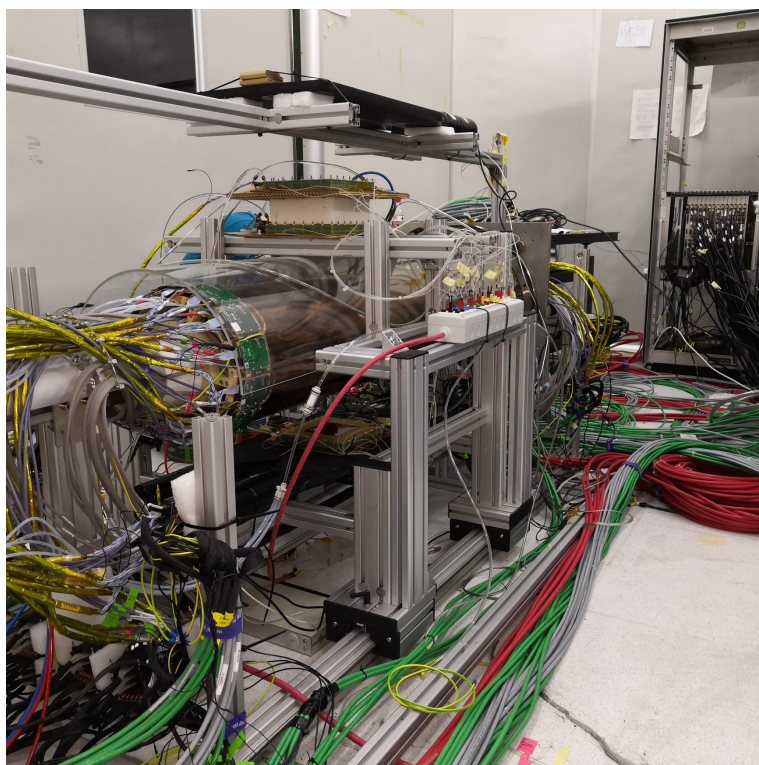
GEMROC (GEM Read Out Cards)

- Based on FPGA Intel/ALTERA ARRIA V X family
- Distribute supply voltage, configure and readout the signals

BESIII – Where we stand

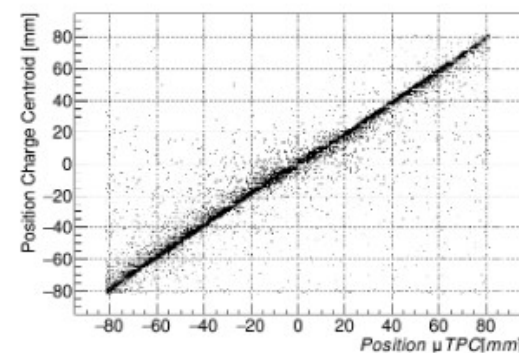
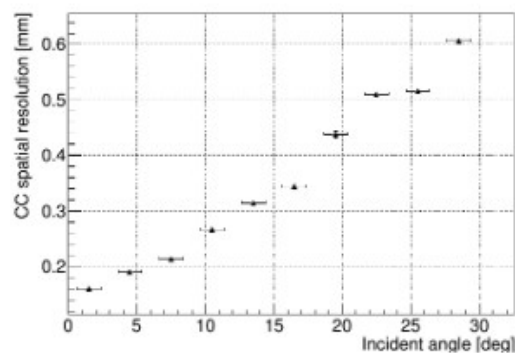
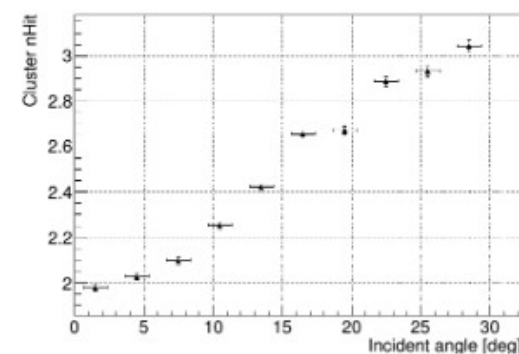
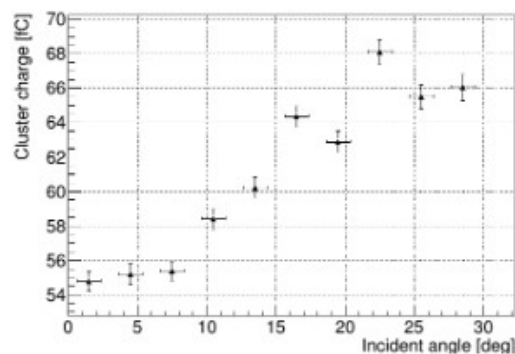
We have started the commissioning in IHEP with cosmic rays

- First two layers
- Final readout chain

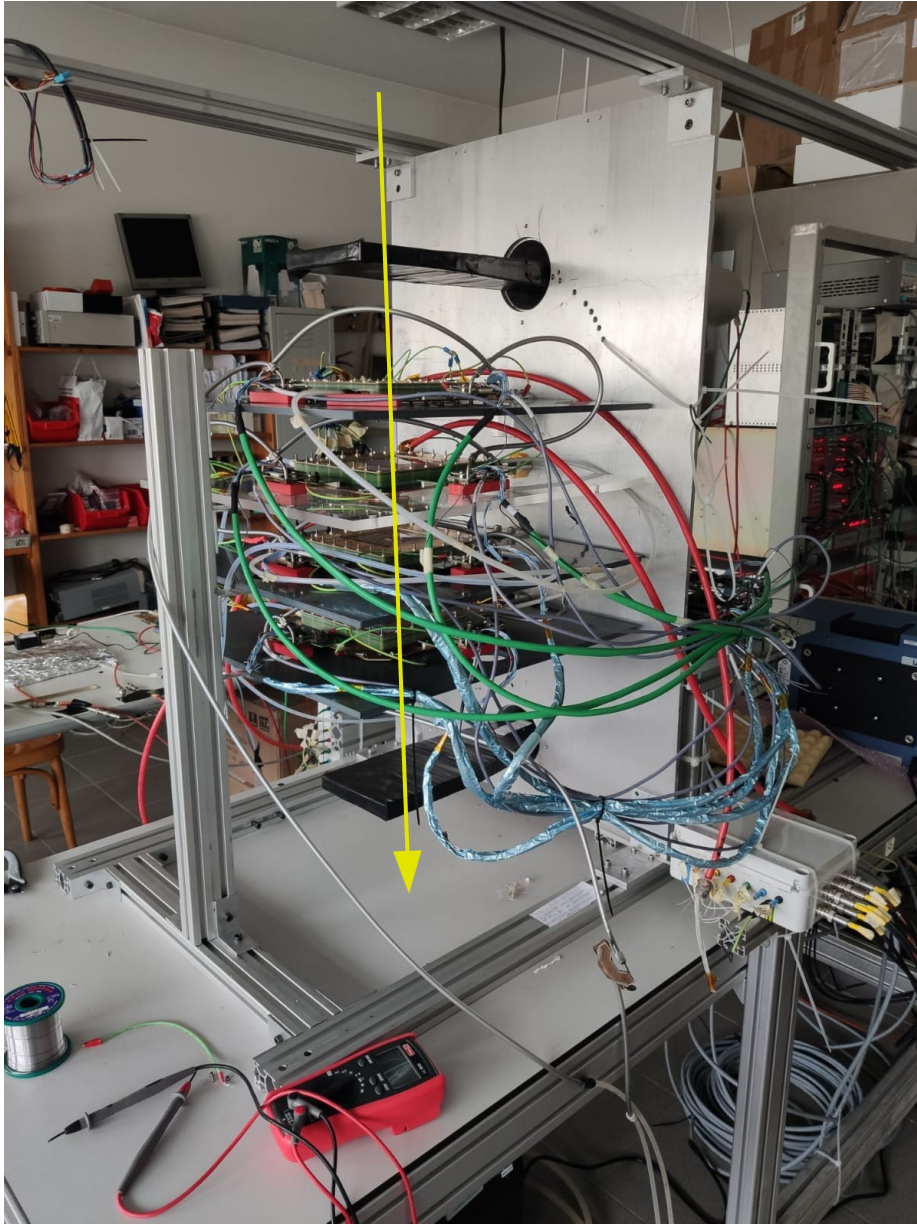


Preliminary Results
presented at INSTR20

JINST 15 (2020) 08, C08004



BESIII - TB

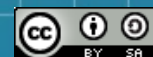
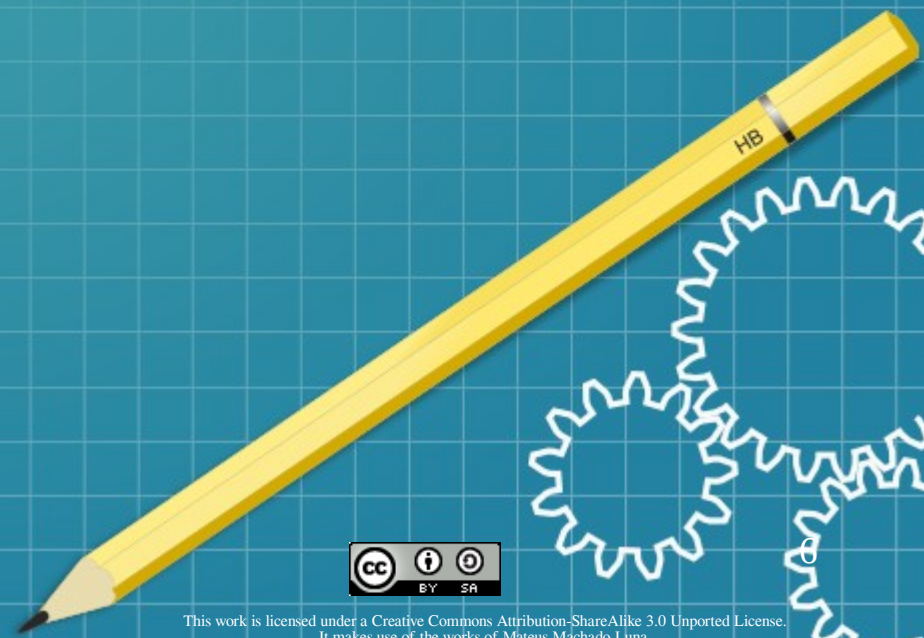


Test 4 10x10 cm² planar prototypes with both SRS+APV and final CGEM-IT electronics

- We plan to operate with either ArCO₂ or ArISO gas mixtures
- No magnetic field
- We plan to run with muons (but no problems with pions run)
- Different HV and incident angles
- Triggers will be provided by two scintillators squares
- We will have water cooling for TIGER ASIC

External sizes: 100x60x60 cm³

THANKS!



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