

Detector prototyping: E&DAQ support for forward calorimeter prototype.

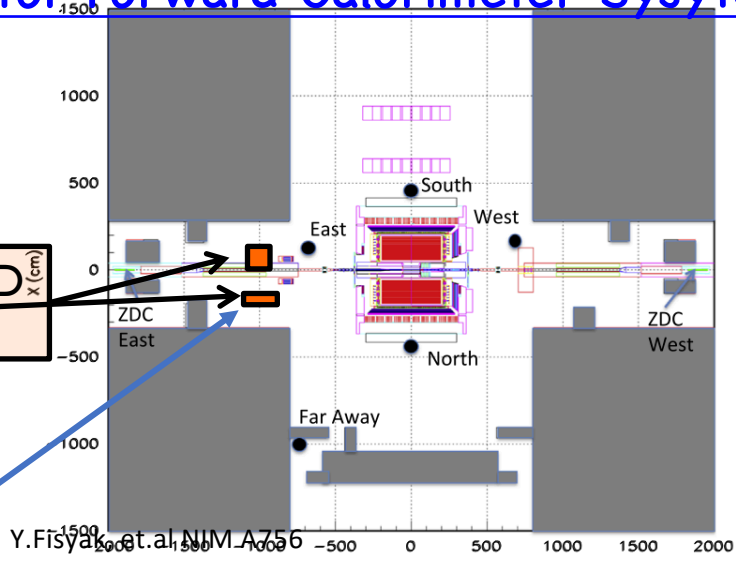
O. Tsai (UCLA/BNL)

Prototyping for Forward Calorimeter System in Run17

- STAR IP ideal test place for EIC.
- Conditions for FEMC in ePIC very close to one we have in STAR now (pp510).

ePIC Isert Hcal Run24-Run25

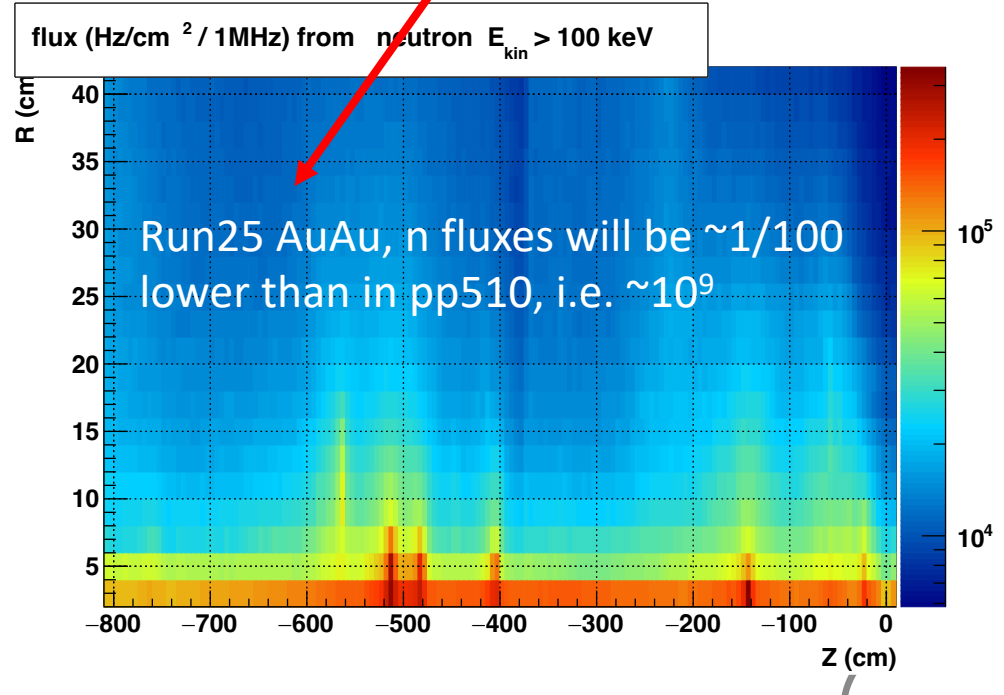
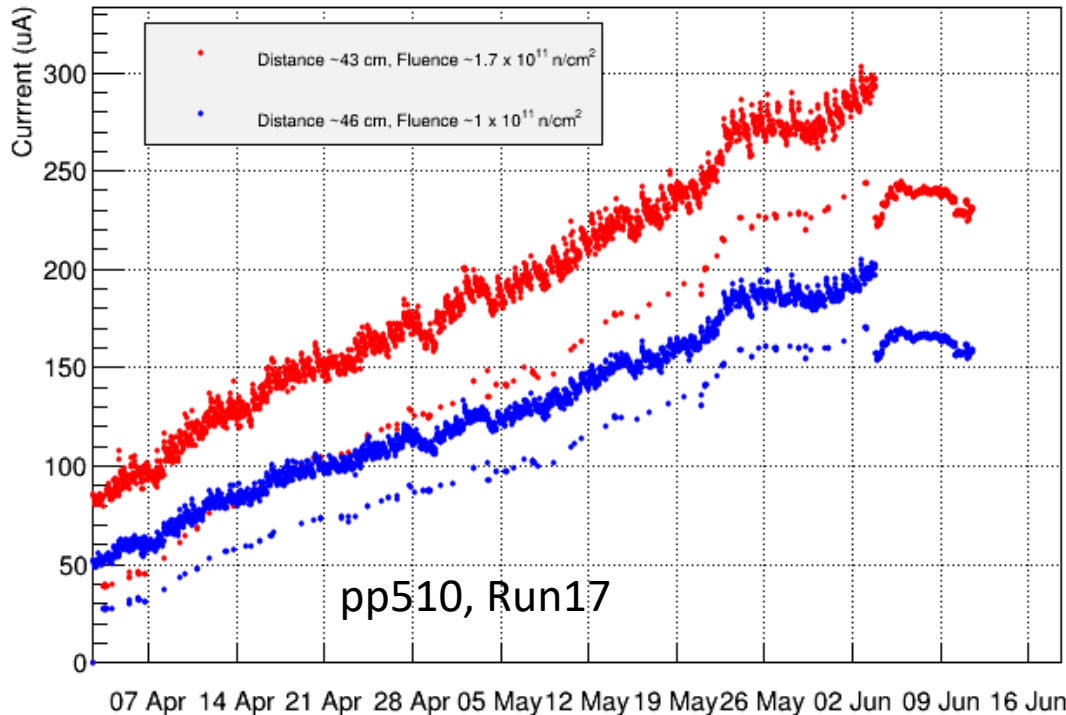
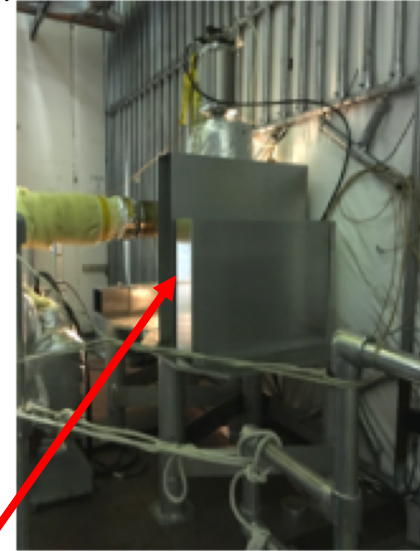
EIC R&D 2017



EIC R&D pp500 STAR IP. MPPC S13360-6025PE. ~35 cm from the Beam Line, Z = -750 cm

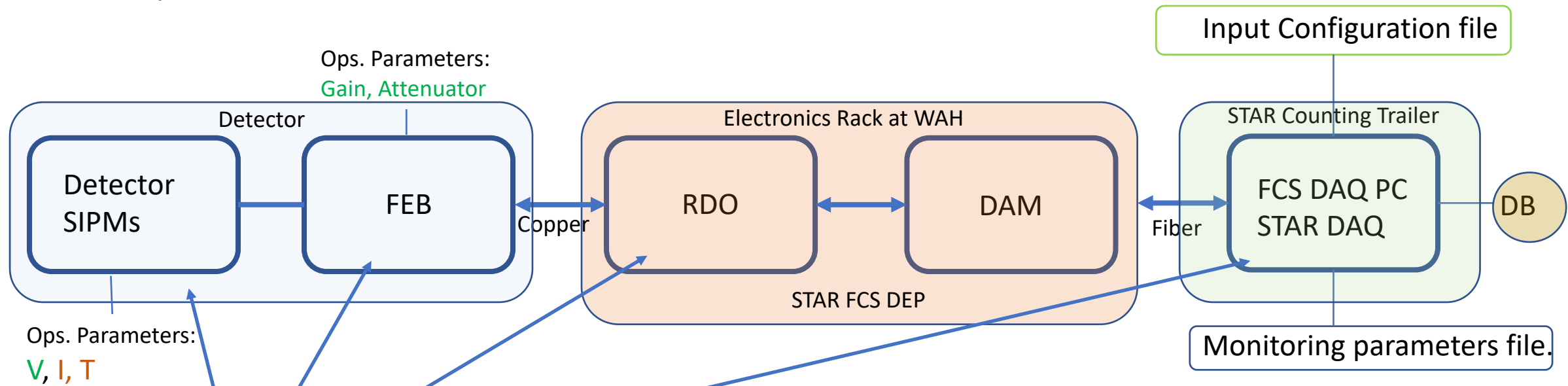
EIC, Run 17 STAR IP:

- 152 SiPM at ~135 cm (since Feb.)
- 26 SiPMs at ~45 cm (since April)
- APDs at ~45 cm, (since April)



Run25 AuAu, n fluxes will be ~1/100 lower than in pp510, i.e. ~10⁹

Recalled, STAR FCS 2017 tests at STAR.



- Run17, tested prototypes of FEE, RDO.
- Tonko utilized existing DAQ PC, fiber and integrated with STAR data taking.
- Very useful tests eventually leading to a successful FCS operation in Run22.

From Gerard Visser

'a main goal for FEB is operational stability / shakedown including dealing with SEU's if we have them. and dealing with actual random hits at high rate (we can always lower thresholds to stress that). Another goal I hope you can get something physics-wise from the data that confirms especially for low energy signals that things are working as needed. We should probably have extra, DC, LED's to fake radiation damage of SiPM's.'

Questions / Discussion:

- Will it make sense to push for ePIC fEMCal test at STAR in Run25? - **Yes**
- Is it enough time and manpower to do this for upcoming Run25? - **I don't know.**

Projections:

Hardware:

- Two installation ECal blocks with SiPM boards will be available late fall.
(64 channels, partially instrumented with SiPMs)
- First version of FEB in late fall? Gerard V.
- 'RDO' and DAQ – Tonko said he already have ppRDO board for SEU tests, but can it be used with Gerard's FEB?

Software?

A. Ogawa (BNL) ?