Fermilab U.S. DEPARTMENT OF ENERGY Office of Science

Muon g-2 status

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All Experimenters' Meeting (AEM)

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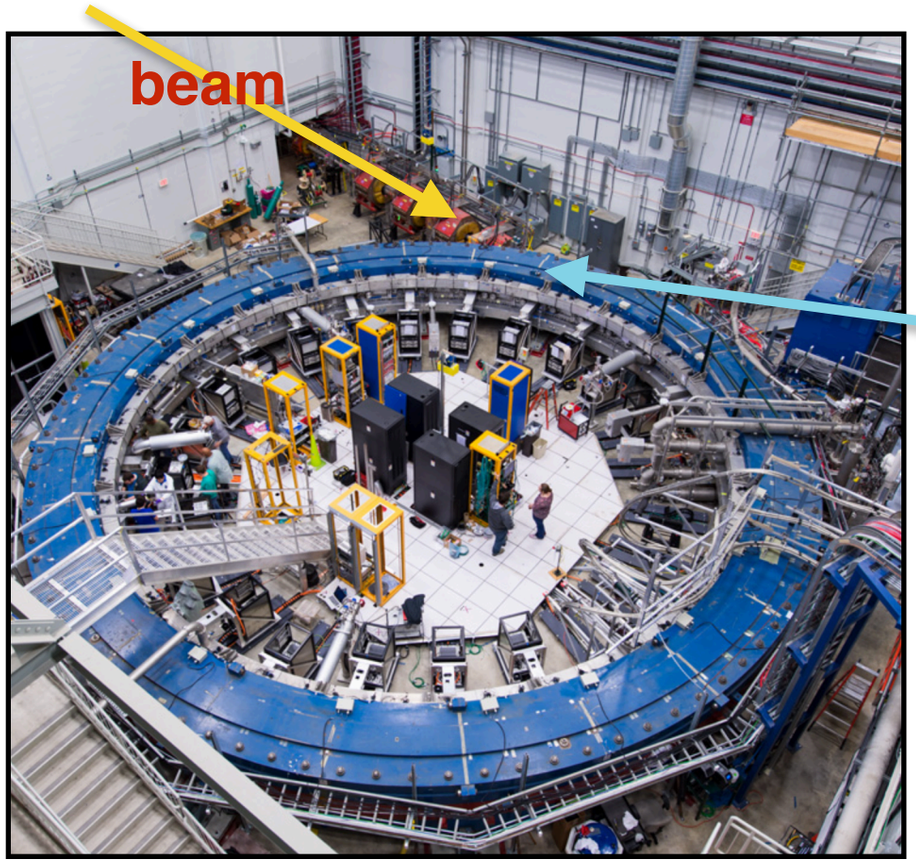
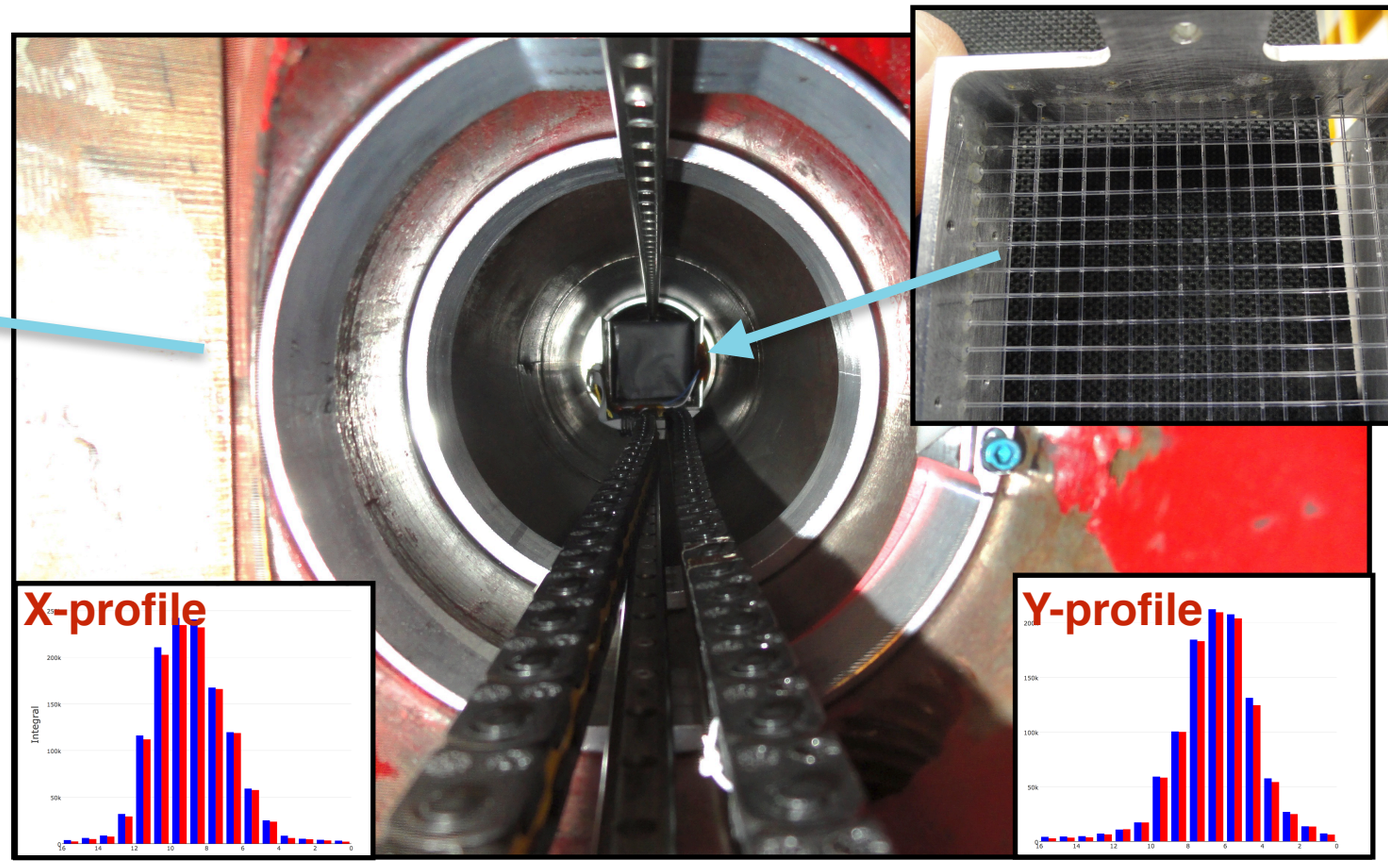
Summary from last week

- Receiving beam ~ 60% of the time
- DAQ has been running smoothly
- > 60% uptime hours (DAQ integration still on-going)
- 5.8 TB, 1 M bunch events collected (mostly protons)
- One of the Quad pulsers failed, to be fixed by external expert
- Calorimeters, trackers, fiber harps, T0 detector, laser system and kickers are performing well (no critical issues)
- Magnet was on ~90% of the time, ~80% healthy fixed probes
- Inflector PS tripped occasionally, but otherwise working well

Major milestones from last week





- Beam profile monitor (IBMS) installed and is providing shot-by-shot feedback to the accelerator team for beam tuning (now right in front of the inflector)
- Established & optimized proton storage (counting dumped protons after turning off quad focusing)
- Kickers timed on muons on Jun 10 night

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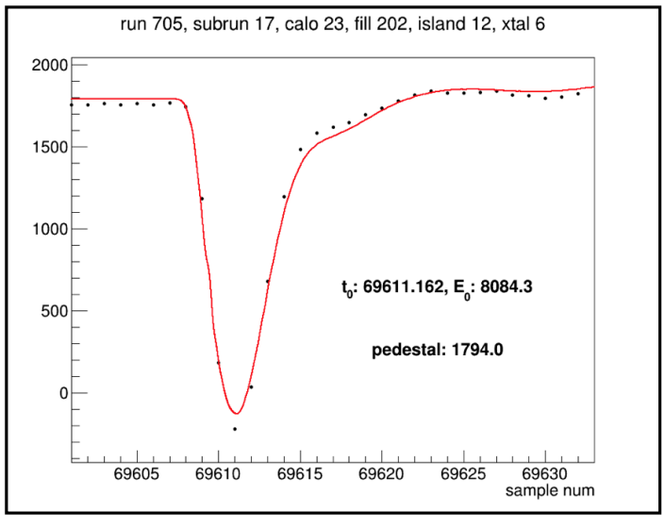
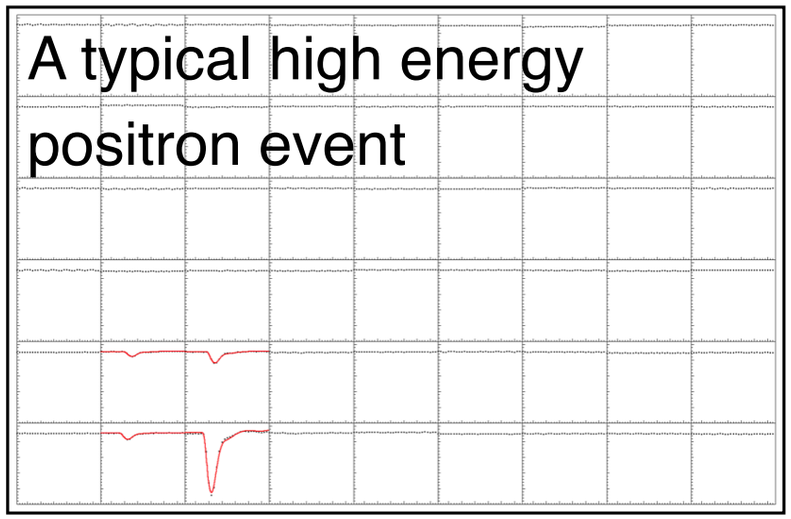
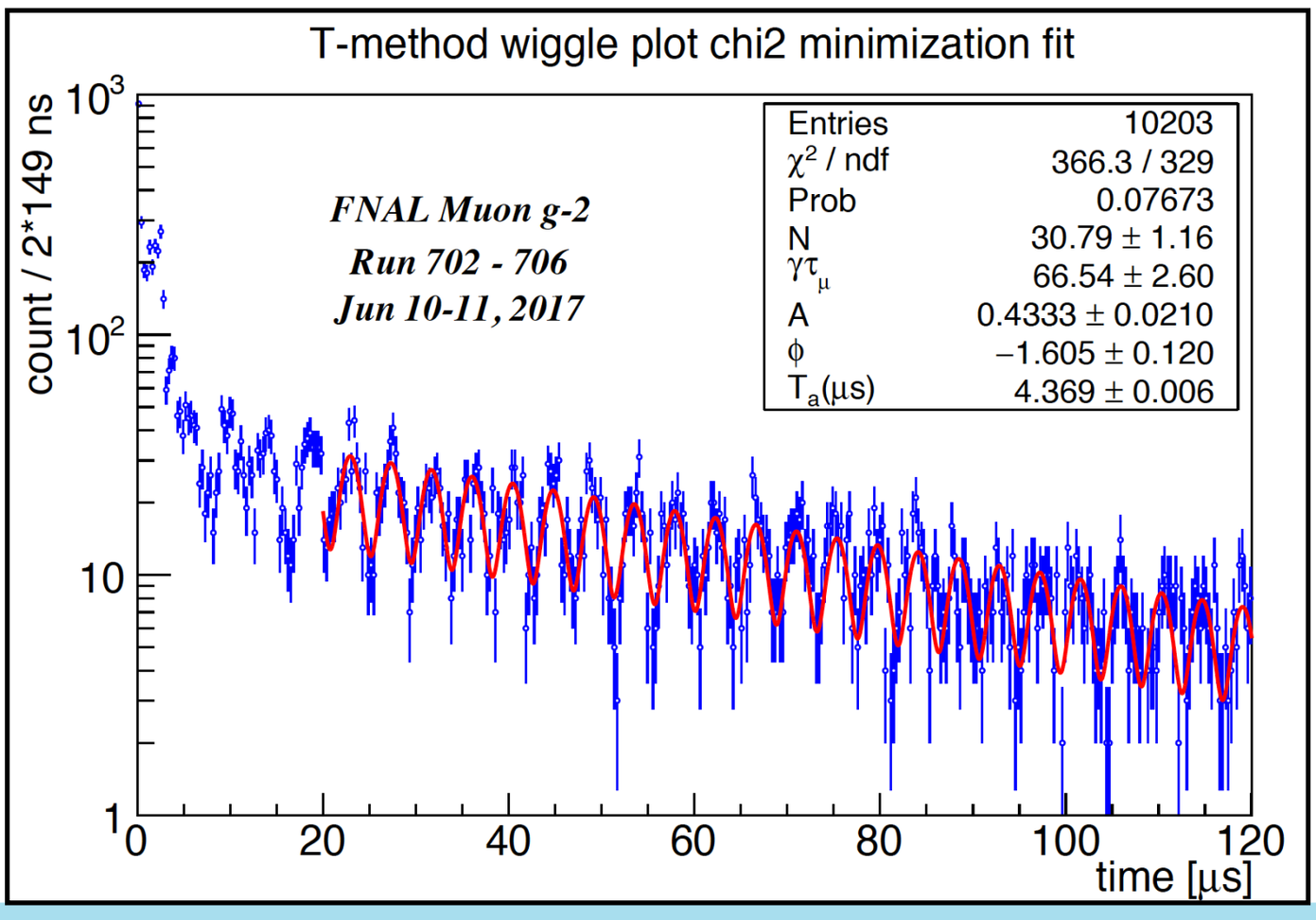
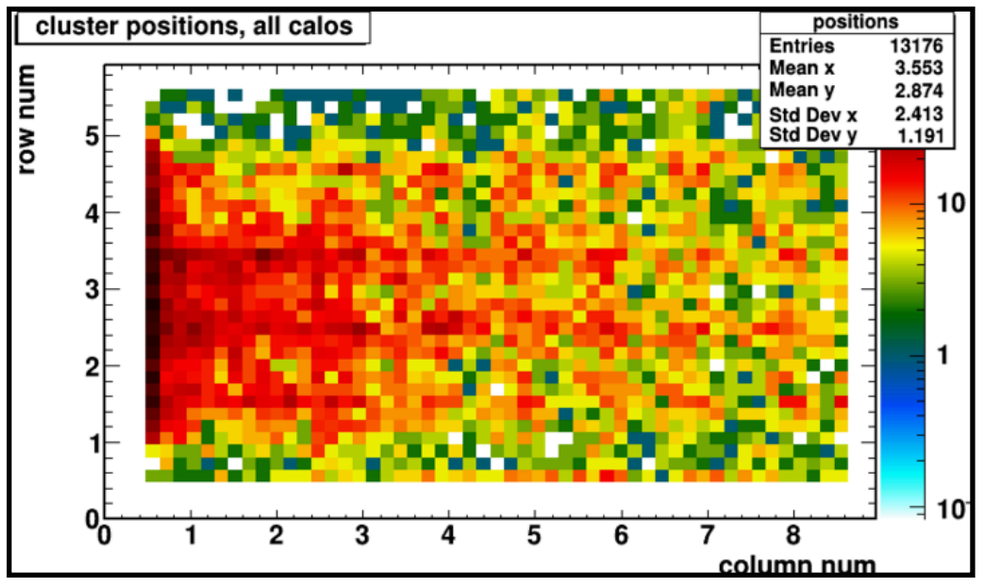
Stored muons in the ring!







Distribution of reconstructed positions similar to MC prediction



First FNAL g-2 wiggle plot made after several hours of data taking

Offline reconstruction in a good shape, provided wiggle plot minutes after data taking ended

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Near future plans

- Continuing DAQ integration and maximize up time
- Production of DAQ data using FIFE tools
- Recalibration of detectors to check for gain drift
- Optimizing beam injection using IBMS
- Operating kickers at 100% of full voltage
- Operating quads at 20 kV
- Optimizing muon storage fraction