Muon g-2 AEM Update

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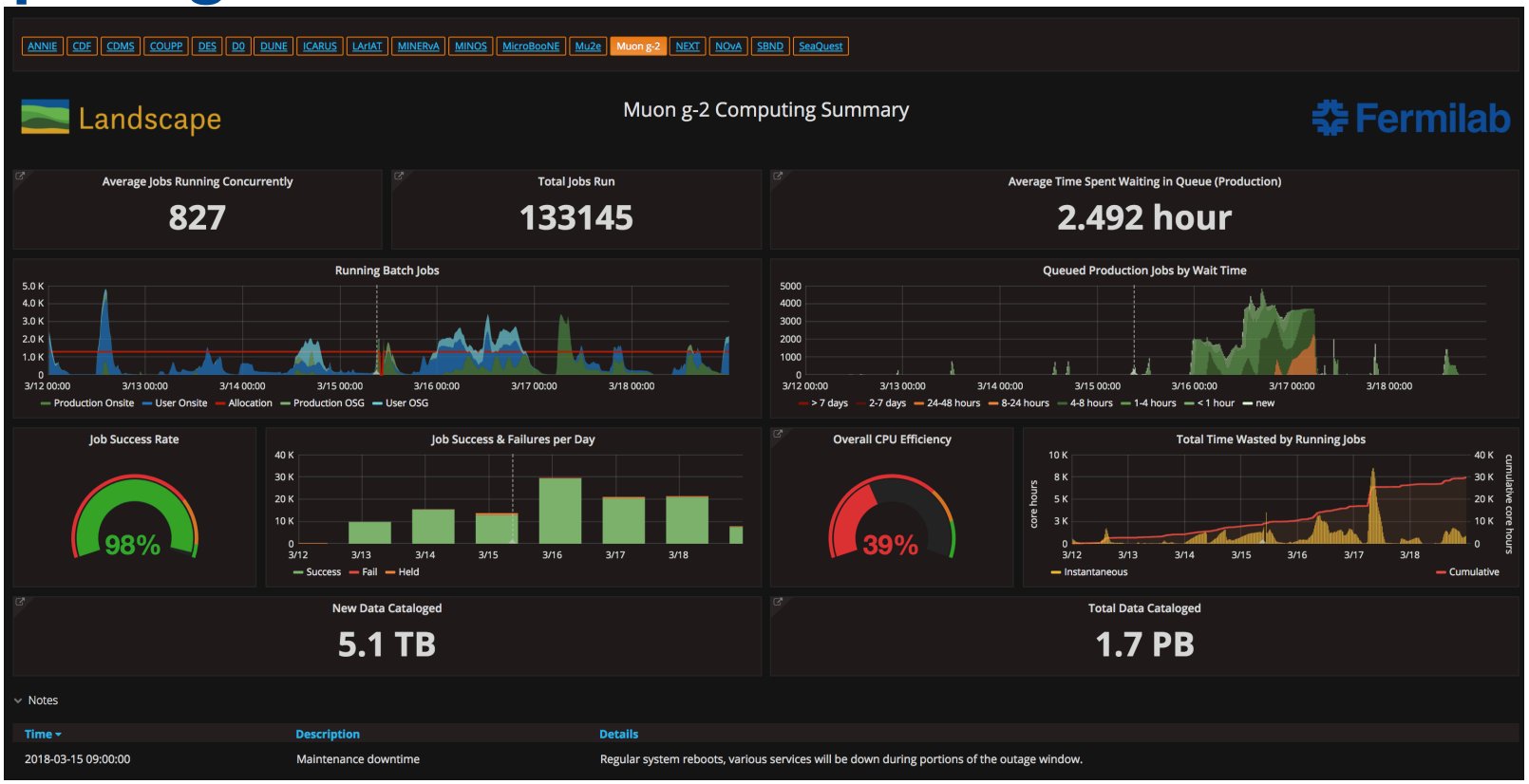
Mar 19, 2018

Computing

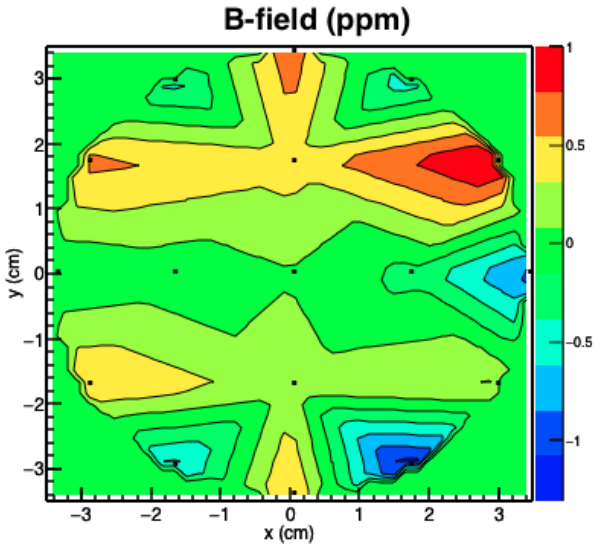


- No real changes to last week

Work last week

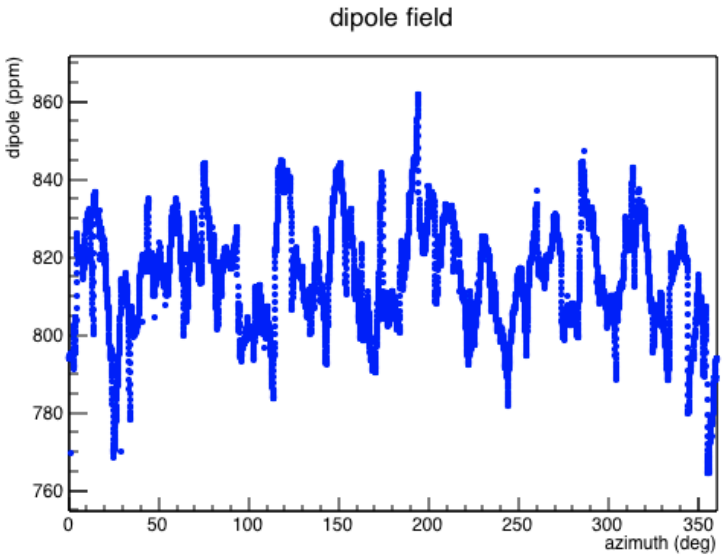
- One set of quad plugs (out of vacuum) was having trouble
  - **Mon**: Pulled from system → other 7 to nominal voltage
  - **Wed**: Restored to system→ Continue conditioning
  - **Thu**: Turned off magnet for faster conditioning (recovery from sparks)
  - **Fri**: Reached physics setpoint, turned magnet on
- **Fri:** Beam tuning w/ AD → restored flux 40%
- **Sat:** First trolley run w/ default config
- **Sat—Mon:** Stable Data Collection

Trolley Run



	Norm	Skew
Quad	-0.19	0.28
Sext	0.05	0.27
Octu	-0.07	0.25
Decu	0.23	0.07
Dipole	-0.0	

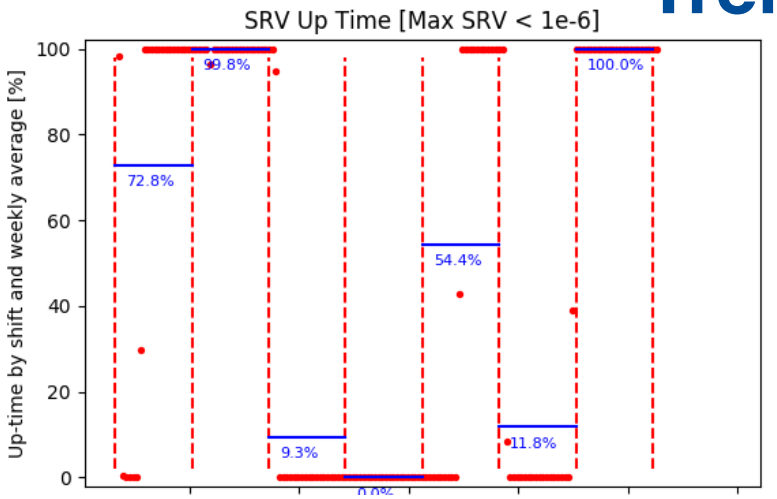
100 ppm

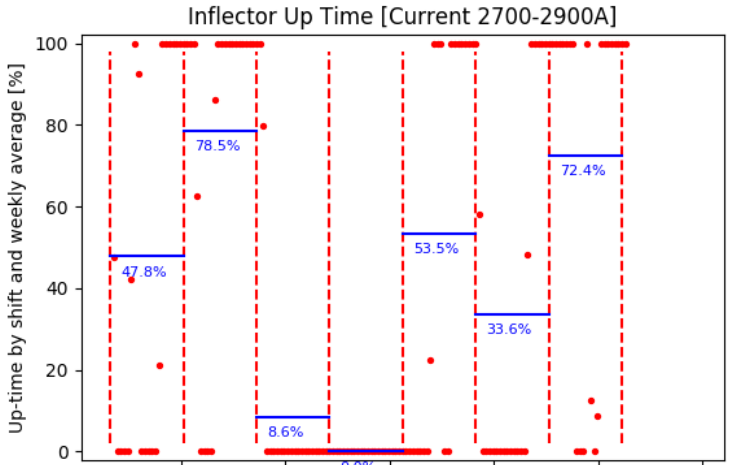


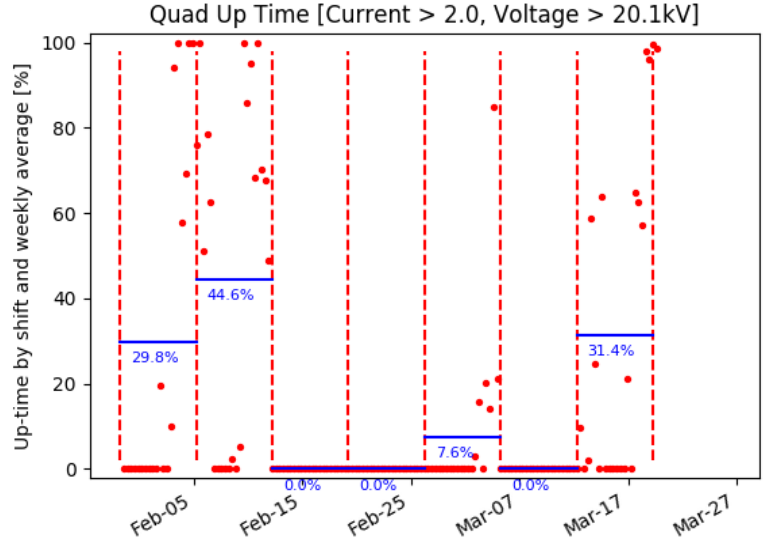
- Moments all < 0.28 ppm! Goal was < 0.5 ppm
- Variation of dipole +/-1ppm over storage region
- BNL +/-1.5 ppm

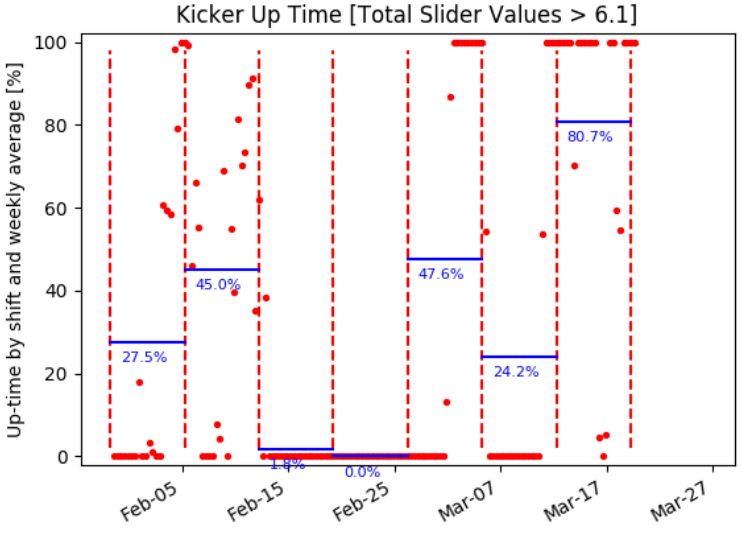
- Variation of dipole: RMS=14.2 ppm
- BNL RMS: 29—39 ppm

Trend Plots Ring



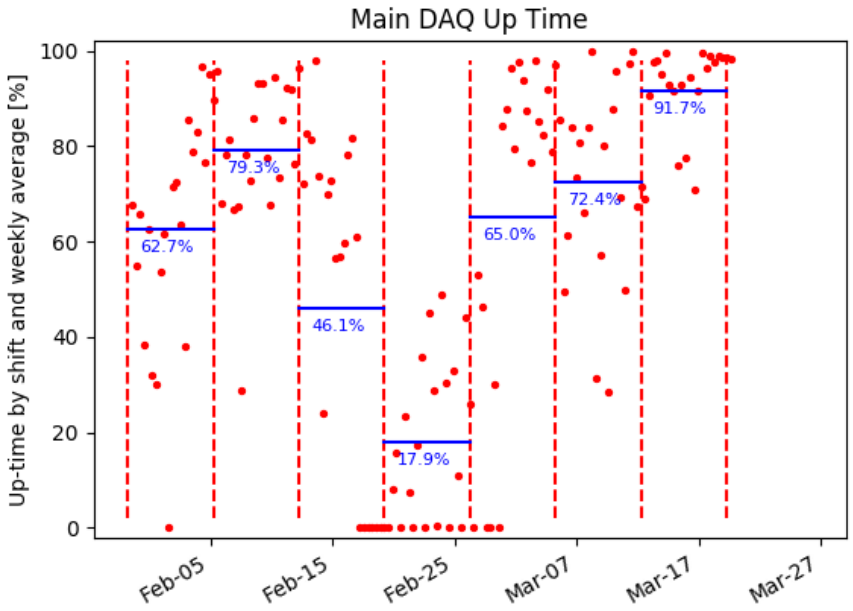


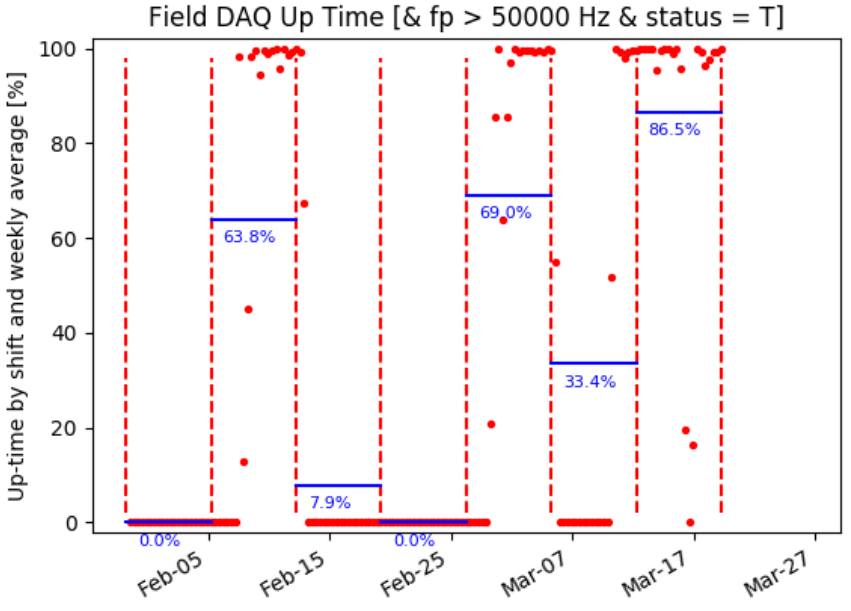




- No work in SRV (100%). Inflector only down w/ magnet, plus 2 times db failed to record. Kicker on whenever needed.
- Quad conditioning during week, then 95%+ efficiency on weekend

Trend Plots DAQ

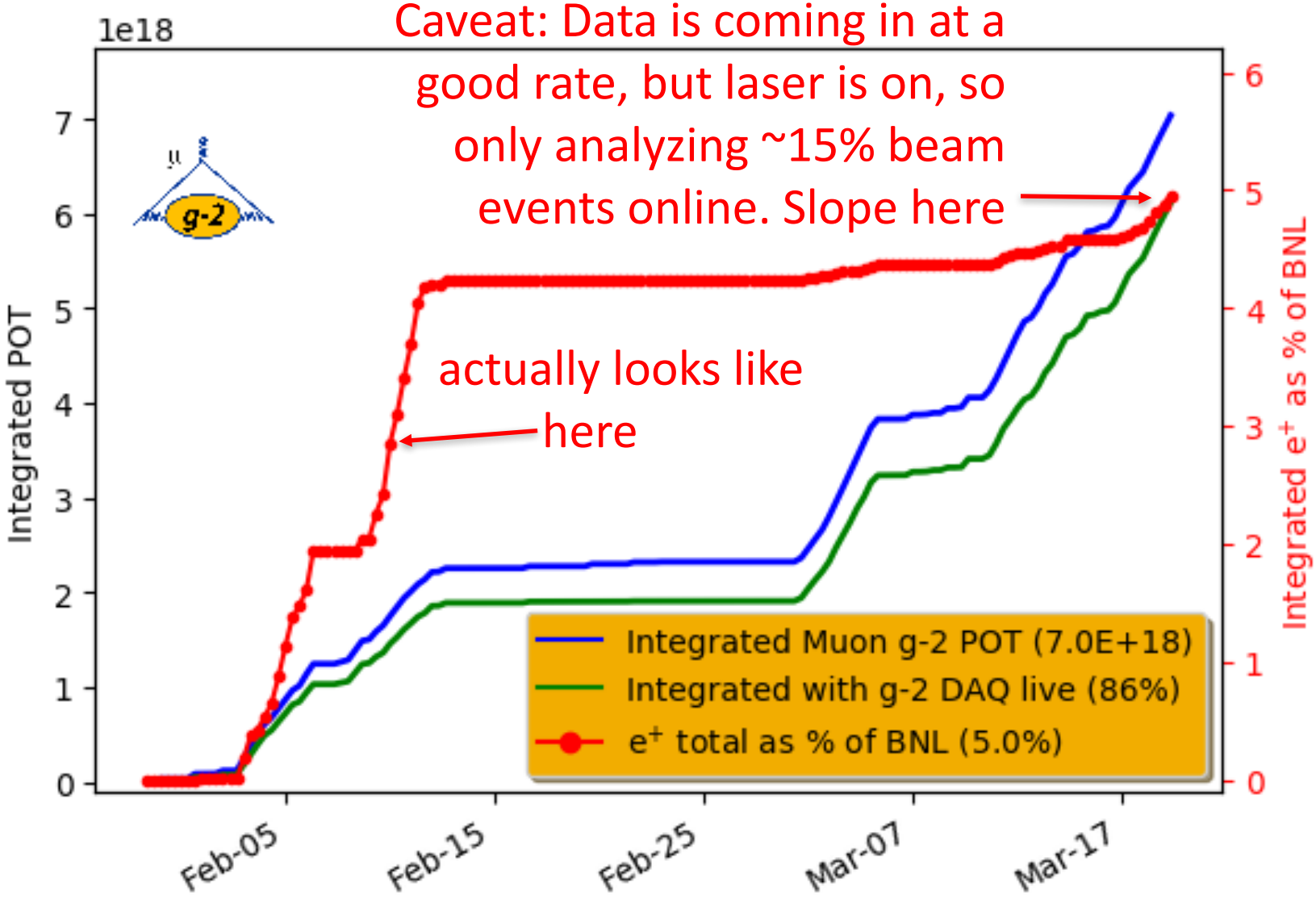




- Main DAQ very stable
- Low efficiency during laser studies, timed with magnet off

- Field DAQ very stable
- Turned off during magnet down time mid week
- Lower efficiency during trolley run (stopping/starting)

Integrated POT / decay events



Path Forward

- Bookend stable data period with trolley run tonight
- A few more AD beam studies
- AD down day Tues + Wed
  - Minimal work in hall
  - Some infrastructure measurements
  - Some mu2e fridge room work (magnet down)
- Trolley Run Wednesday to start next data collection period
  - Beam back Wed pm
  - Re-establish 8 pulses
  - Coordinate switching to 16 pulses Thursday or Friday