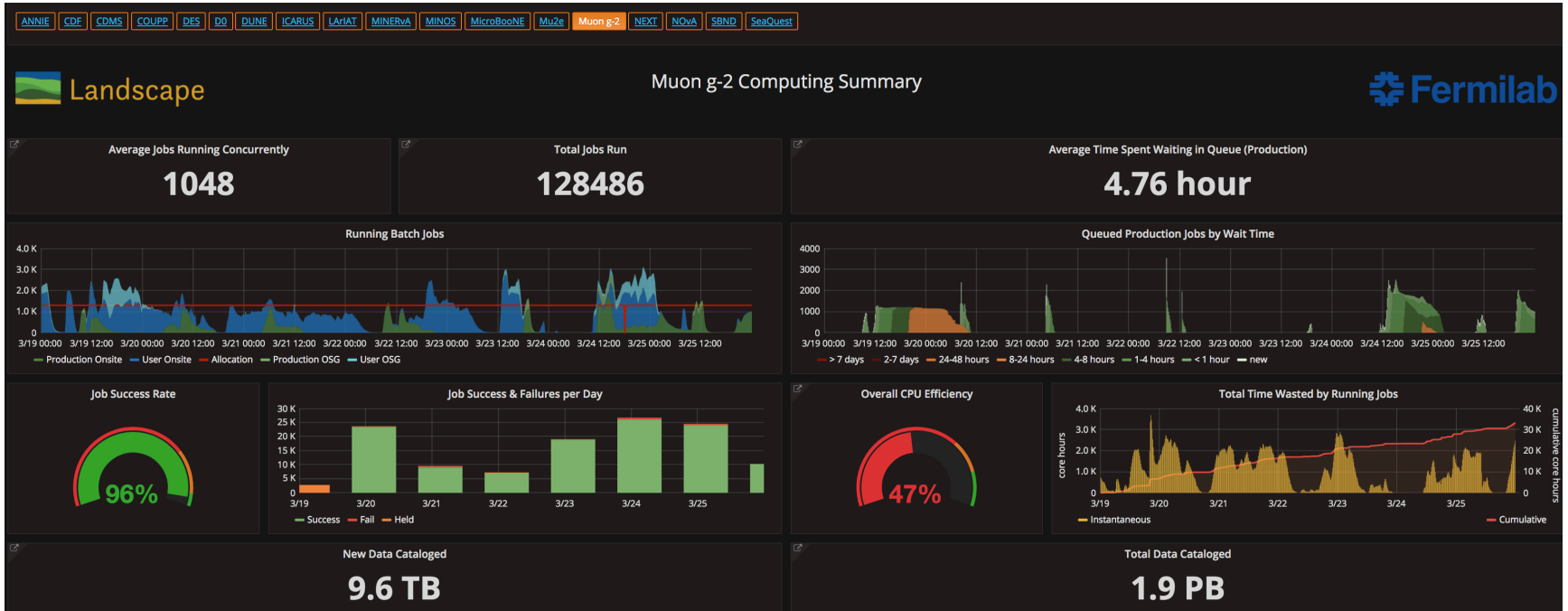


# Muon $g-2$ AEM Update

Brendan Kiburg, Jarek Kasper  
Mar 26, 2018

# Computing



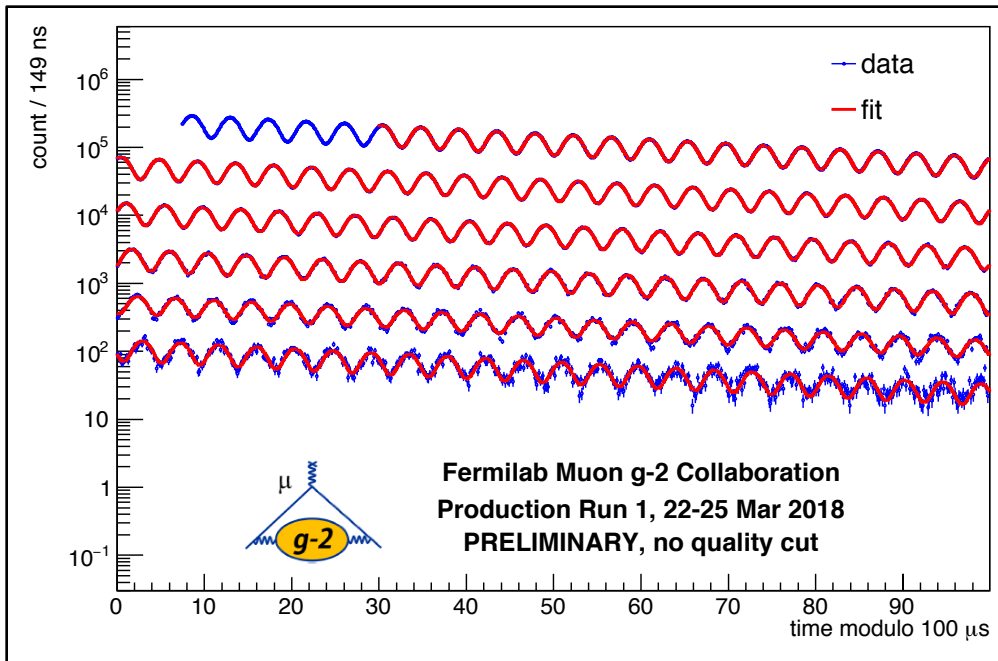
- More data being catalogued
- Similar rates/efficiencies

# Week of Mar 19--25

- 2 Days of shutdown
  - Turned magnet off for Mu2e fridge room work
  - Performed studies on magnet ramp up
- Issues:
  - Some DAQ instabilities
  - Some Quad instabilities, identified
  - Mostly Adjusted to 16 pulse rate
- Balance of Trolley runs, recovery, production
- Some TurboPump Display/Control Units (DCUs) failed
  - Tue Mar 20 @ 12:52 am → swap pump control location Tue
  - Sun Mar 25 @ 7:45 pm → was in a good location,
  - Reviewed system to ensure loss of a pump leads to safe shutdown of equipment
  - Both times reacted by turning pulsed systems off
  - Have 1<sup>st</sup> replacement, in contact w/ vendor to understand issue

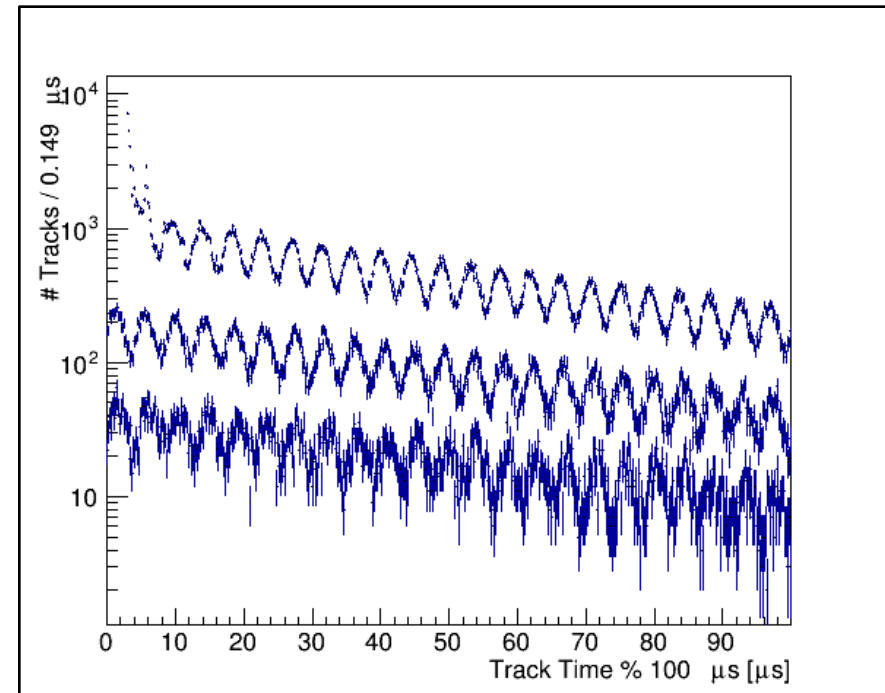
# Detector: Offline Analysis Wiggle Plots from Sun Mar 25

## Calo



- $\sim 5$ ppm / day precision
- Output from fraction of offline analysis

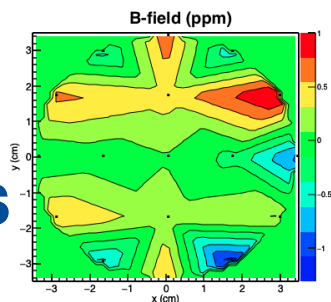
## Tracker



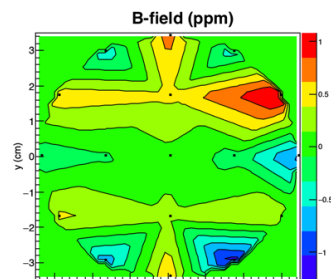
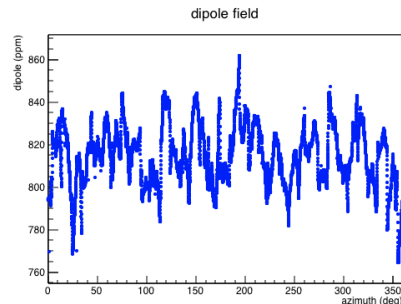
- 42 minute run
- Output from fraction of offline analysis

# Production Trolley Runs

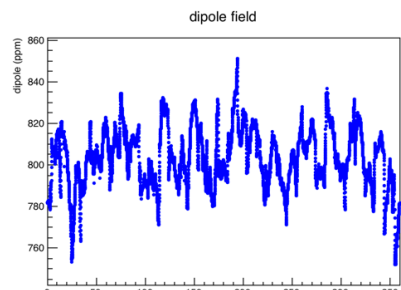
Dates  
(3/17)



	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	

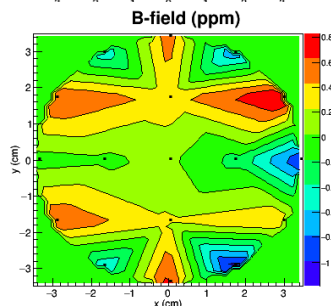


	Norm	Skew
Quad	-0.07	0.30
Sext	-0.00	0.30
Octu	-0.07	0.26
Decu	0.23	0.05
Dipole	-0.0	

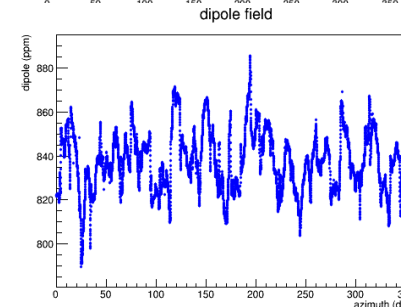


(3/19)

6h between beam pulses

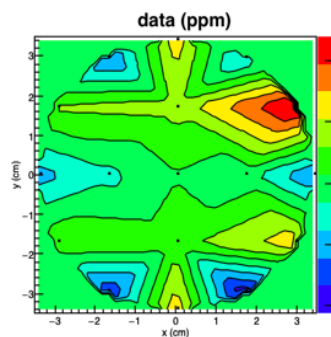


	Norm	Skew
Quad	-0.29	0.10
Sext	0.06	0.19
Octu	-0.06	0.25
Decu	0.25	0.05
Dipole	-0.0	



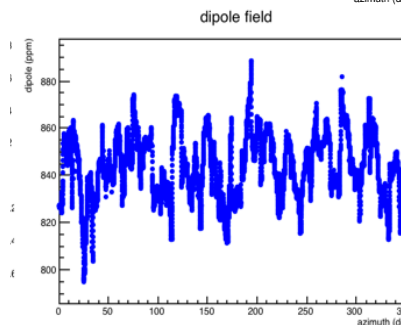
(3/21)

4h6 minutes between beam pulses



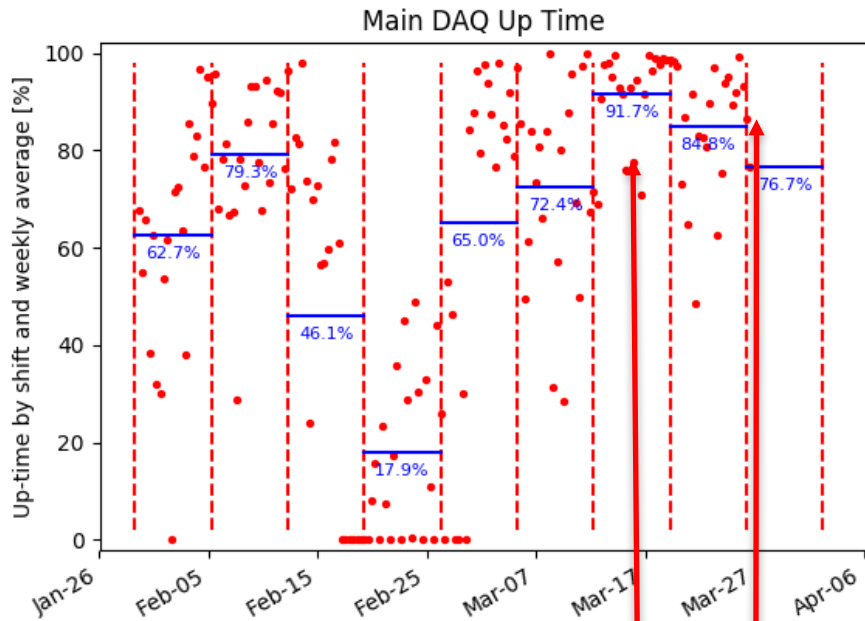
	Norm	Skew
Quad	0.21	0.20
Sext	0.02	0.23
Octu	-0.07	0.26
Decu	0.25	0.06
Dipole	-0.0	

Run 3483

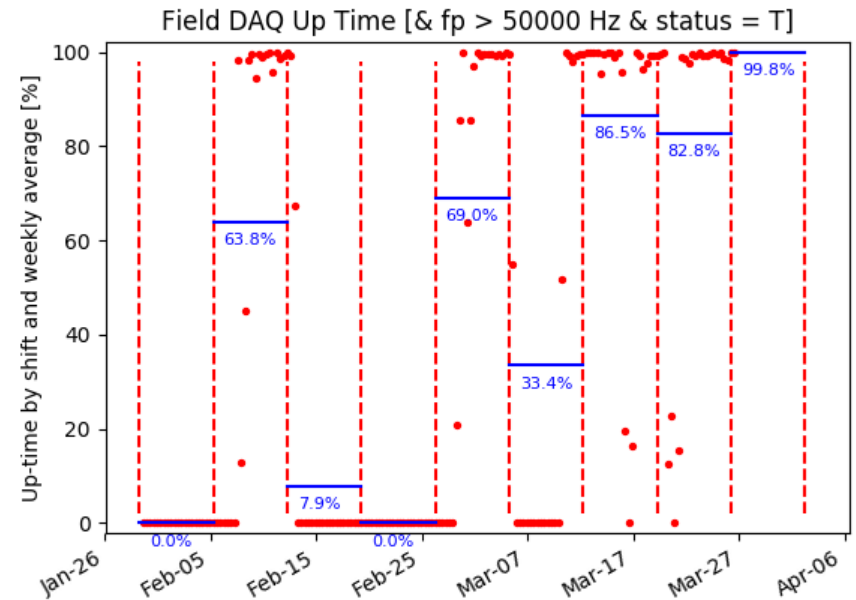


(3/25)

# DAQ Up Time Trend Plots

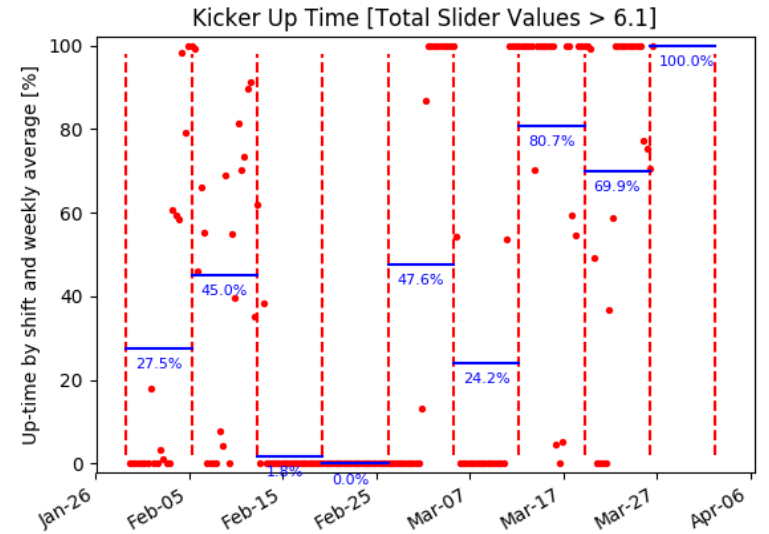
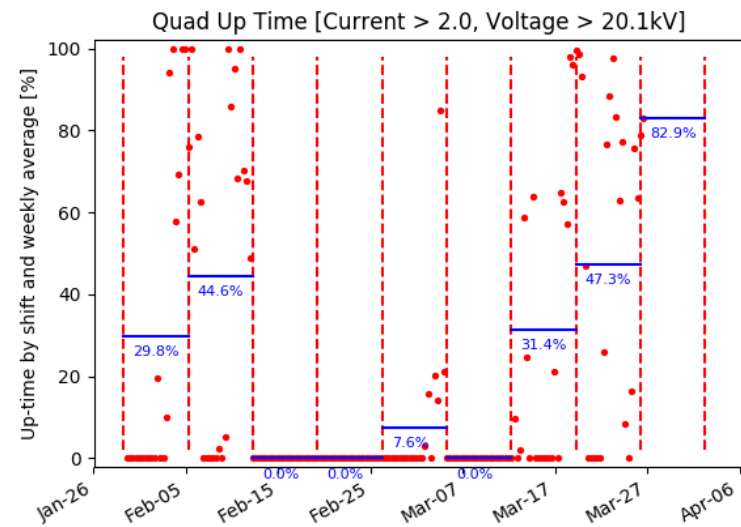
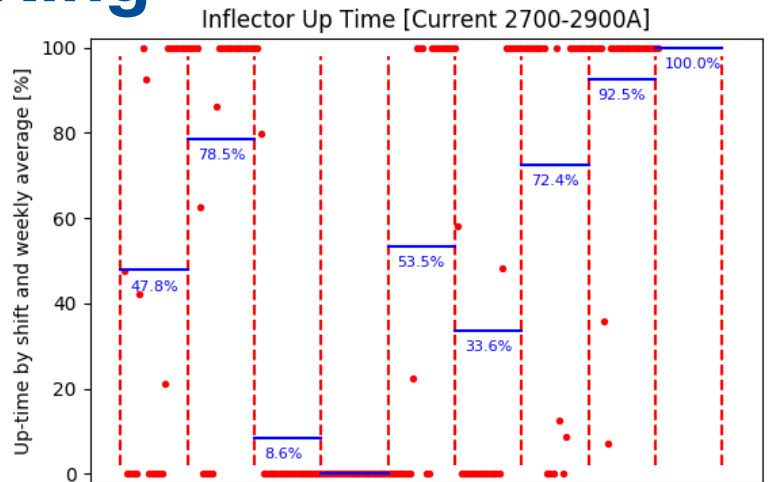
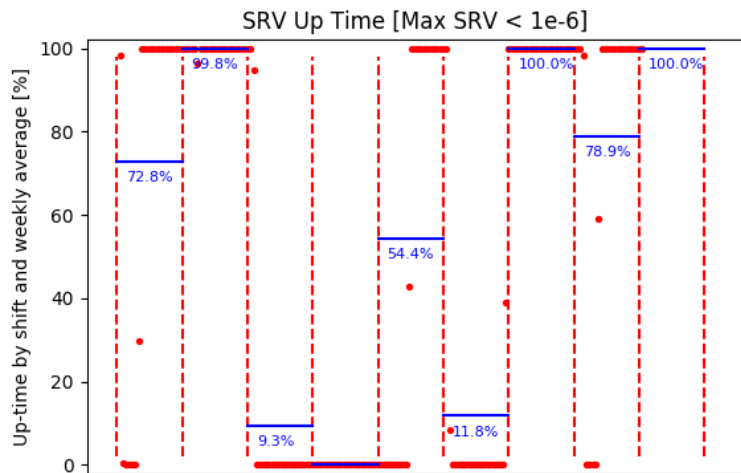


Typically:  
8 pulse prod shifts > 95%  
16 pulse prod shifts > 90%



Typically on w/ the magnet  
Most deviations from 100%  
adjacent to magnet ramps,  
trolley runs

# Trend Plots Ring



- SRV Up-time usually reflects other issues. Inflector only down w/ magnet, Kicker efficiencies high when needed.
- Quad 95%+ efficiency. 80% eff full V at 16-pulse mode, can run sub-full V

# Path Forward

- Production Running in 16 pulse mode
- Accumulate Statistics

