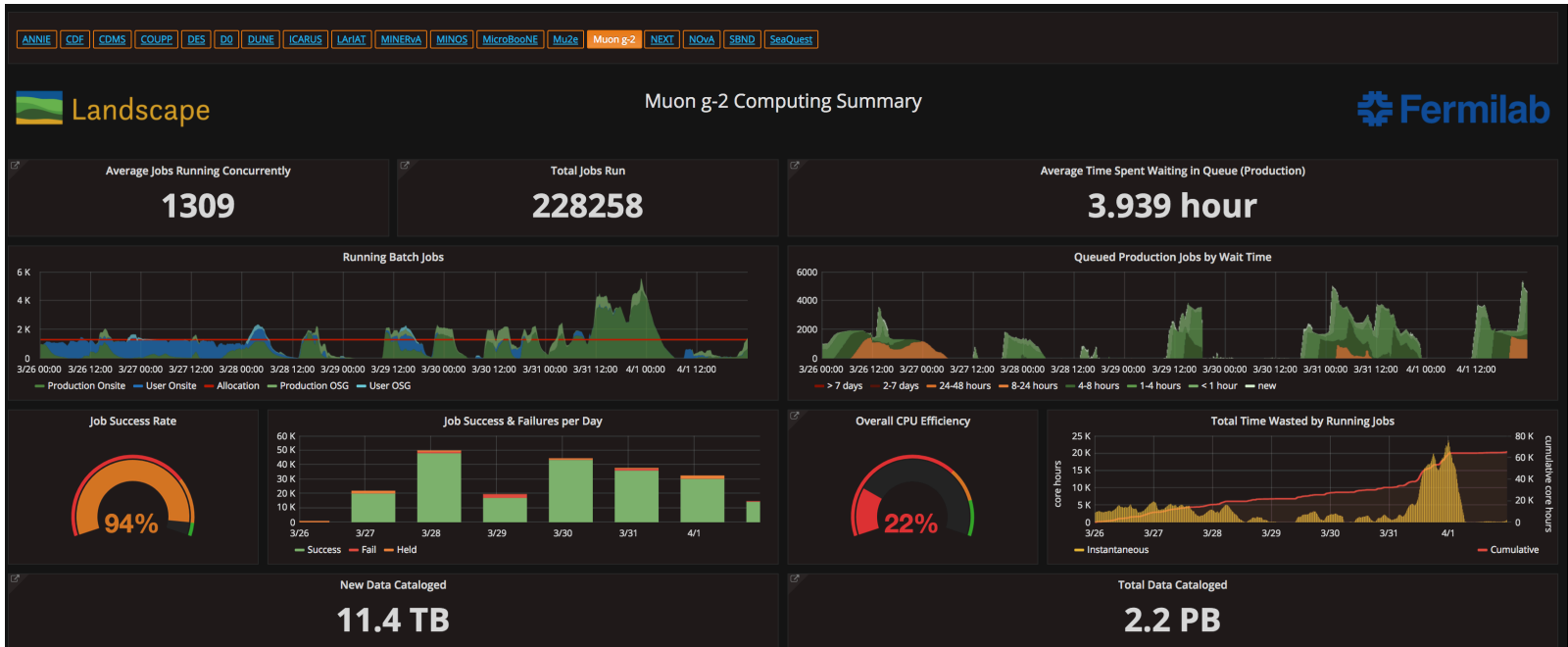


Muon $g-2$ AEM Update

Brendan Kiburg, Jarek Kasper
Apr 2, 2018

Computing



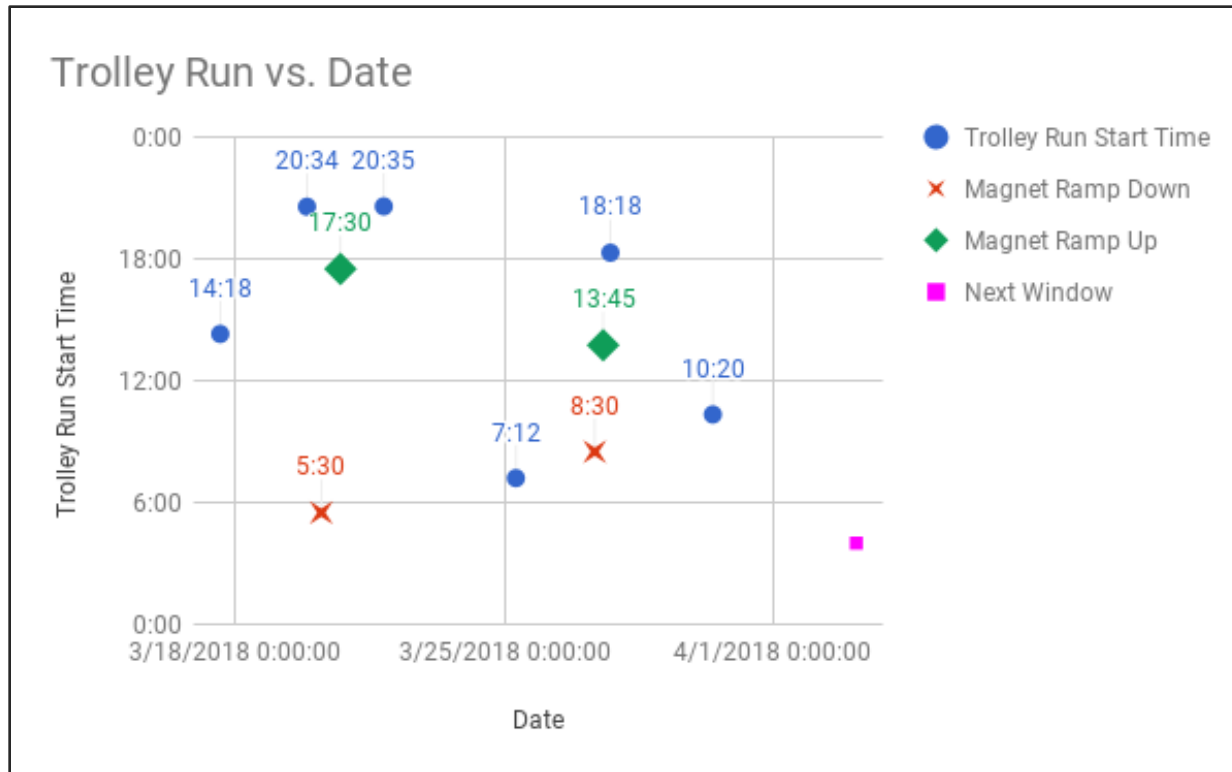
- Looks like the bulk of inefficiency was weekend jobs held
 - data are unpacked about 8-16h after been acquired.
 - Some new fixes/upgrades with the next software release

Studies / Planned Downtime Last Week

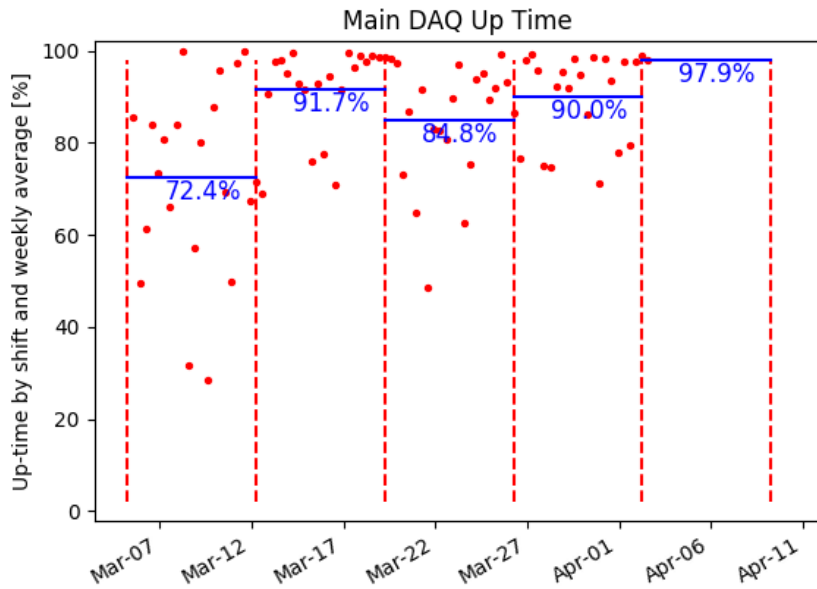
- Tue Mar 27: **12 hours** Magnet off (power issue)
 - Improved procedures re: communication, procedures facing outage
- Wed Mar 28: 12 pm – 2pm, Jim Morgan tuning **+25% flux increase** via beam transmission
 - Recovered previous highwater marks
- Wed Mar 28: During AD downtime, developed cryo cooling issue. Extended our downtime by **4 hours to stabilize**
 - Cryo Dry Engine inefficiency
 - Worked with engineers to address this and tweak engine speeds
 - Improved cooling power. Will address underlying cause right after the next trolley run (that validates the previous beam data)
- Planned Trolley Runs
 - Two trolley runs → 8.5 hours trolley out of garage (baseline 6h, so **2.5h**)
- Ongoing Inefficiencies (affect data rate)
 - DAQ crashes + Quad Sparking + Recovery

Trolley Runs Continue

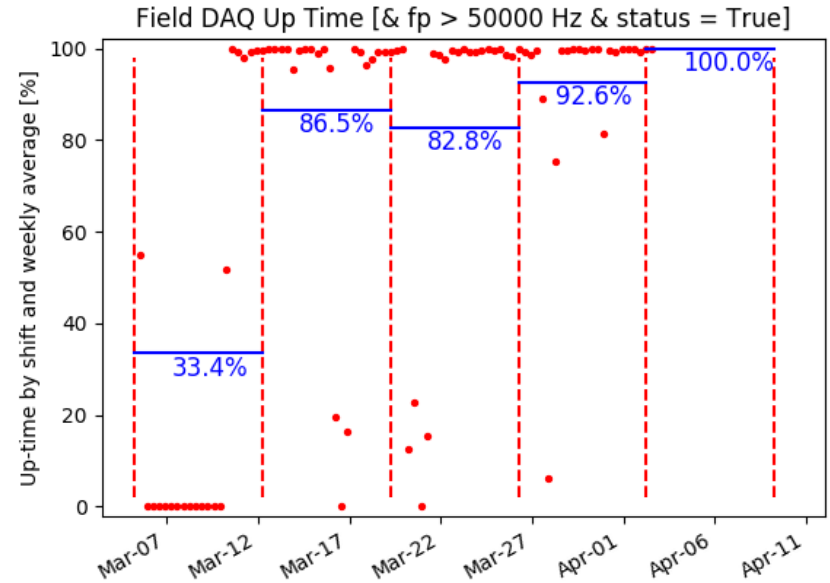
- Two successful trolley runs since last AEM.
- Next run scheduled Tue Apr 3rd 04:00



DAQ Up Time Trend Plots

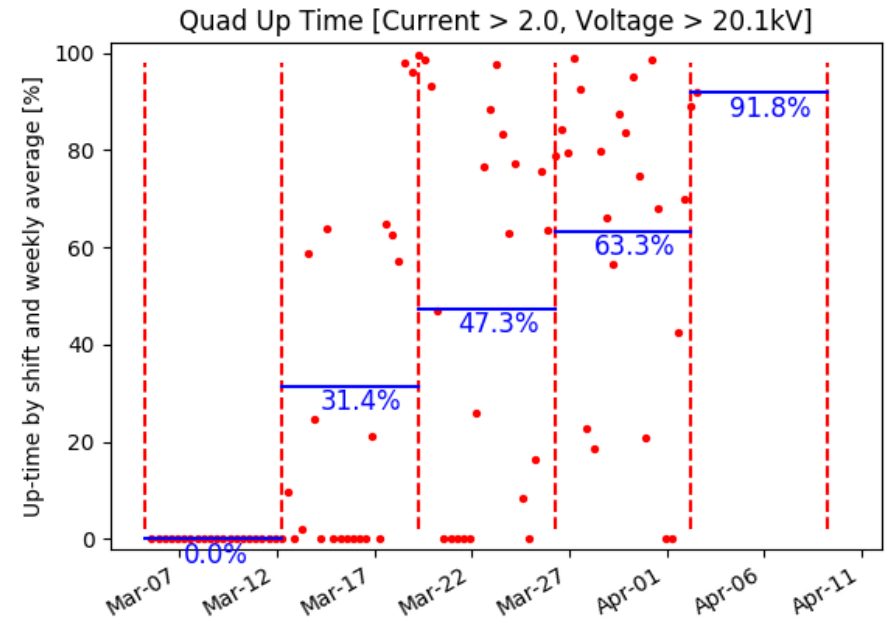
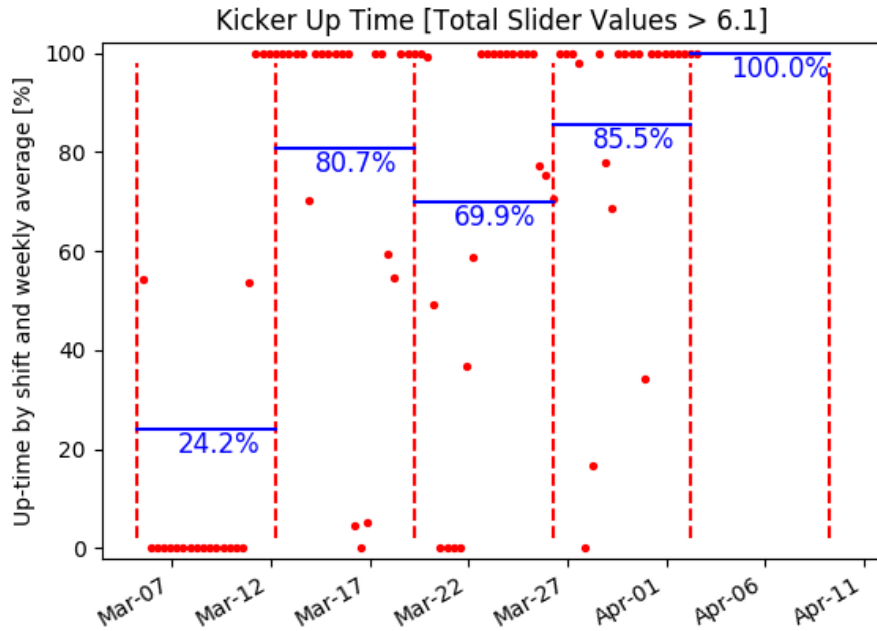


Making progress
Downtime mostly laser
studies during trolley runs



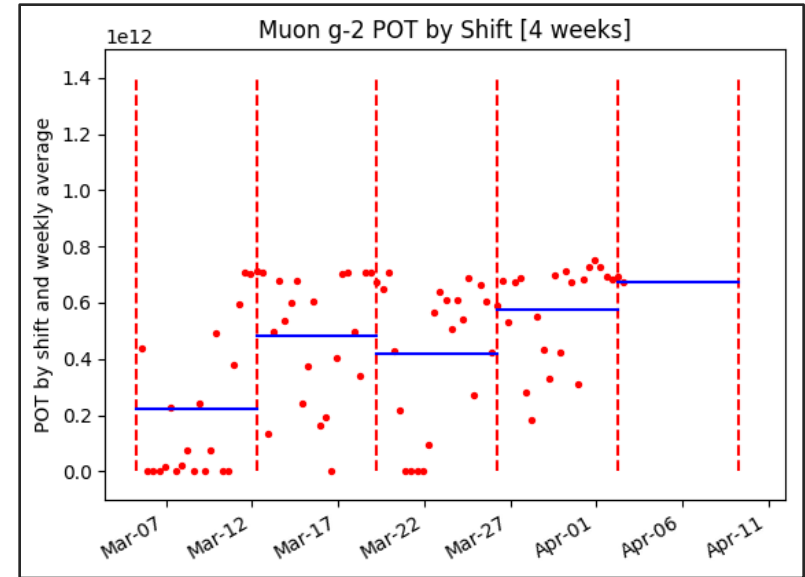
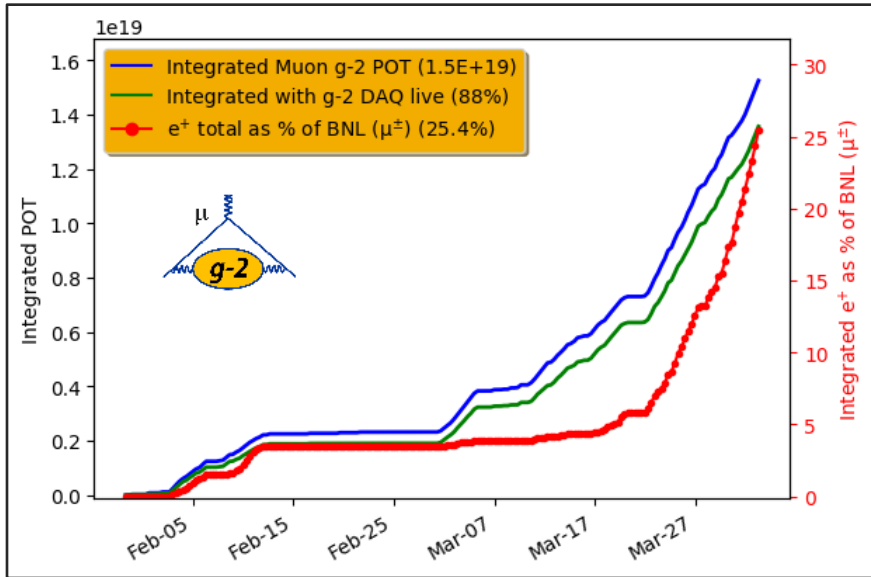
Stable.
Downtime during magnet off

Trend Plots Ring



- Magnet off for 12h and Ring stayed pumped down
- Kicker off during magnet cycle + trolley run
- Quad stability improving, still have some rough shifts

Performance



- All decay positrons
 - Will divide into different quad voltage subsets
- $\sim 0.20x$ BNL since 3/21
- 88% POT weighted livetime
- Decay positrons / shift sees steady increase over last 3 weeks

