

Ar(e,e'p) RC Report

Evan McClellan

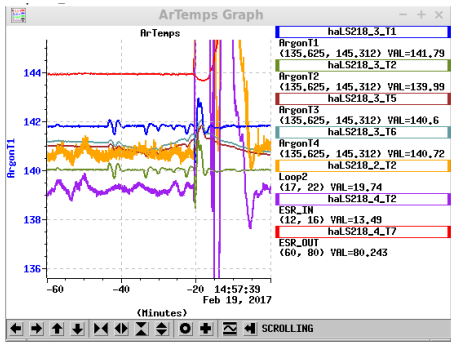
Feb 21st, 2017

- Beam delivered during Swing on Friday
- Saturday Owl:
 - Beam Center and rastersize set
 - High Rate DAQ problem identified
- Saturday Day - Monday Owl: commissioning and $4 \mu\text{A}$ production
- Monday Day:
 - DAQ fixed!
 - Ramp down, Q3 fault
- Monday Swing: $20 \mu\text{A}$ production
- Tuesday Owl: $20 \mu\text{A}$ production
- Tuesday Day: Beam studies

Notify Hall D before/after Accesses!

- When we change status (permit \Leftrightarrow access), Hall D loses beam for 5-10 minutes.
- They have priority, so we should check with them before asking MCC for a change of status.

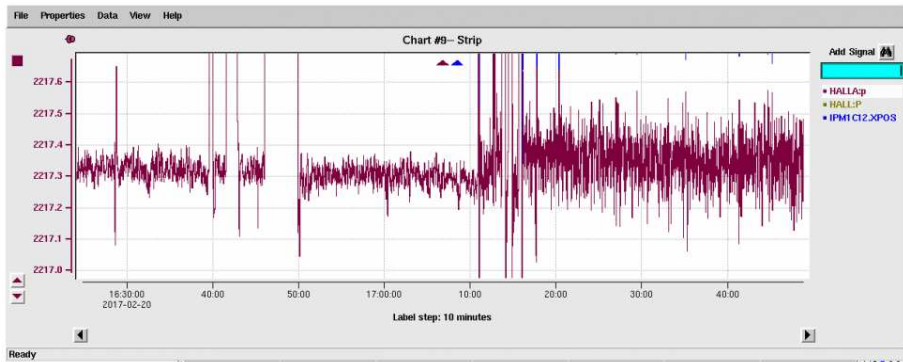
Target warm up and pressure increase event



- An effective cryo pump!

- Accidental target warm up (Loop 2 to 50K)
- vacuum pressure came up to 10^{-3} mbar
- expected due to known downstream leak

Energy Stability



- Energy is typically quite stable
- Noticeable change on Monday Swing



Tracking Issues on (empty) Github repository

JeffersonLab / ArgonIssueTracker Private Unwatch 8 Star 0 Fork 0

[Code](#) **Issues 15** [Pull requests 0](#) [Projects 0](#) [Wiki](#) [Pulse](#) [Graphs](#) [Settings](#)

Filters Labels Milestones New issue

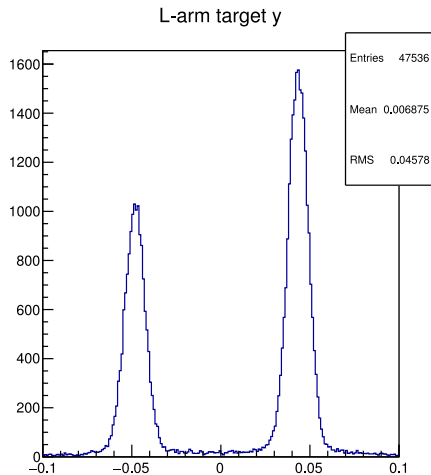
15 Open 0 Closed Author Labels Milestones Assignee Sort

- Check/Adjust relative timing of various triggers**
#15 opened 12 hours ago by vanlellan
- Look at BPM and Raster signals in Y-axis**  2
#14 opened 12 hours ago by HagueT-Work
- check spec angles**
#13 opened 14 hours ago by ShujieL
- how long does it take to reach target equilibrium after a long down?**
#12 opened 14 hours ago by vanlellan
- slow current scan for target "boiling"** 4
#11 opened 14 hours ago by vanlellan
- BCM/unser calibration**  1
#10 opened 14 hours ago by vanlellan
- VDC calibration** 1
#9 opened 14 hours ago by vanlellan
- Optics: verify polarity of Q1 magnets** 1
#8 opened 14 hours ago by vanlellan
- Update db_run.dat file**
#7 opened 14 hours ago by vanlellan

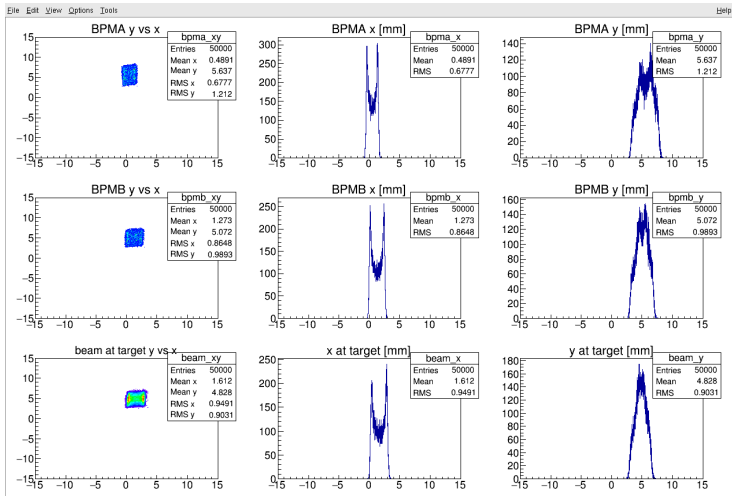
- Symptom: Above $5\ \mu\text{A}$, accepted event rate dropped
- (nearly 0 rate at $15\ \mu\text{A}$)
- Bryan Moffit noticed multiple gates per L1accept in the data
- Bob and Alex checked the Left arm retiming circuit, ensuring 1 gate per L1accept
- Fixed! We can now run at $20\ \mu\text{A}$!

- With buffering mode, deadtime is $\approx 5\%$ at $20\ \mu\text{A}$

Dummy Target Endcaps!

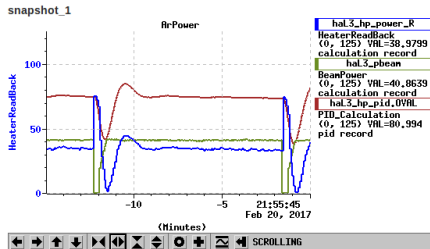


BPMy distributions look odd



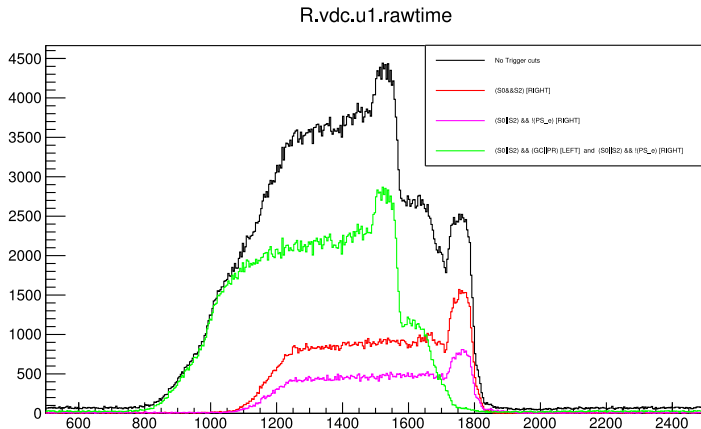
Tyler is investigating! (with advice from Barak)

Target heater overcorrection on short beam trips



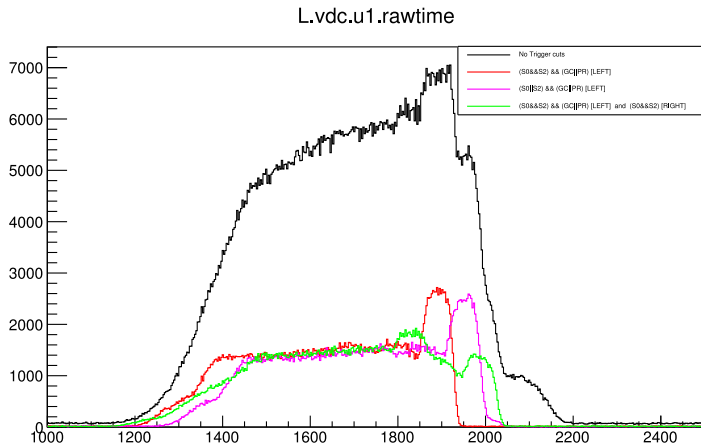
- For short beam trips, the heater drops very low when beam returns
- Often bottoms-out, causing a target alarm
- Could be mitigated by tuning PID calculation parameters?
- (adjusted by Chris Keith this morning)

VDC Timing on Right Arm Looks Good



- Right Arm VDCs show good timing alignment for right arm triggers
- Coincidence triggered events have quite different timing...

Trigger Timing on Left Arm Needs Adjustment



- Left Arm VDCs show poor timing alignment between trigger types
- Planned access tomorrow with spectrometer survey/move

Run Plan

	E_e MeV	$E_{e'}$ MeV	θ_e deg	P_p MeV/c	θ_p deg	$ \mathbf{q} $ MeV/c	p_m MeV/c	min. time hours
kin1	2222	1799	21.5	915	-50.0	857.5	57.7	18
kin2	2222	1799	14.5	915	-43.0	658.5	256.5	34
kin3	2222	1799	17.5	915	-47.0	740.9	174.1	13
kin4	2222	1799	13.0	915	-41.0	619.5	295.5	74
kin5	2222	1799	27.5	915	-53.0	1040.3	-125.3	59

Table 1: Kinematic settings

- Began with kin1, 11hrs Ar, 1hr Ti collected so far
- kin1 - until morning
- kin3 - Wednesday until Friday
- kin4 - Over the weekend

- Surveys of both arms at each angle