RG-D RC Report for Dec. 11th – Dec. 15th & THANK YOU Notes

Dec. 18th, 2023

Lamiaa El Fassi
(for Run Group D)

Run Activities: Dec. 11th – Dec. 12th for CuSn @ 100 nA

- Dec. 11th Owl shift: RC Report
  - ✔ Owl: ABU: 5.86; BANU: 0.53; BNA: 1.61 h
    - ✗ BANU ⟹ rich4 (*100% busy*) & adc/tdcftof5 (*low occupancy*) ROCs reboot; RICH fast recov. (*missing tiles*); RICH full daily recov. (*scalers & rich4 livetime alarms*)
- Dec 11th Day – Dec. 12th Owl Shift: RC report
  - ✔ Day: ABU: 7.1 h; BANU: 0.3 h; BNA: 0.63 h
    - ✗ BANU ⟹ Regular start/end run sequence
  - ✔ Swing: ABU: 6.1 h; BANU: 1.38 h; BNA: 0.53 h
    - ✗ BANU ⟹ mvt1 (*100% busy*) ROC reboot & MVT HV comm. issue due to faulty PS Booster
  - ✔ Dec. 12th Owl: ABU: 7.1 h; BANU: 0.19 h; BNA: 0.71 h
    - ✗ BANU ⟹ Regular start/end run sequence

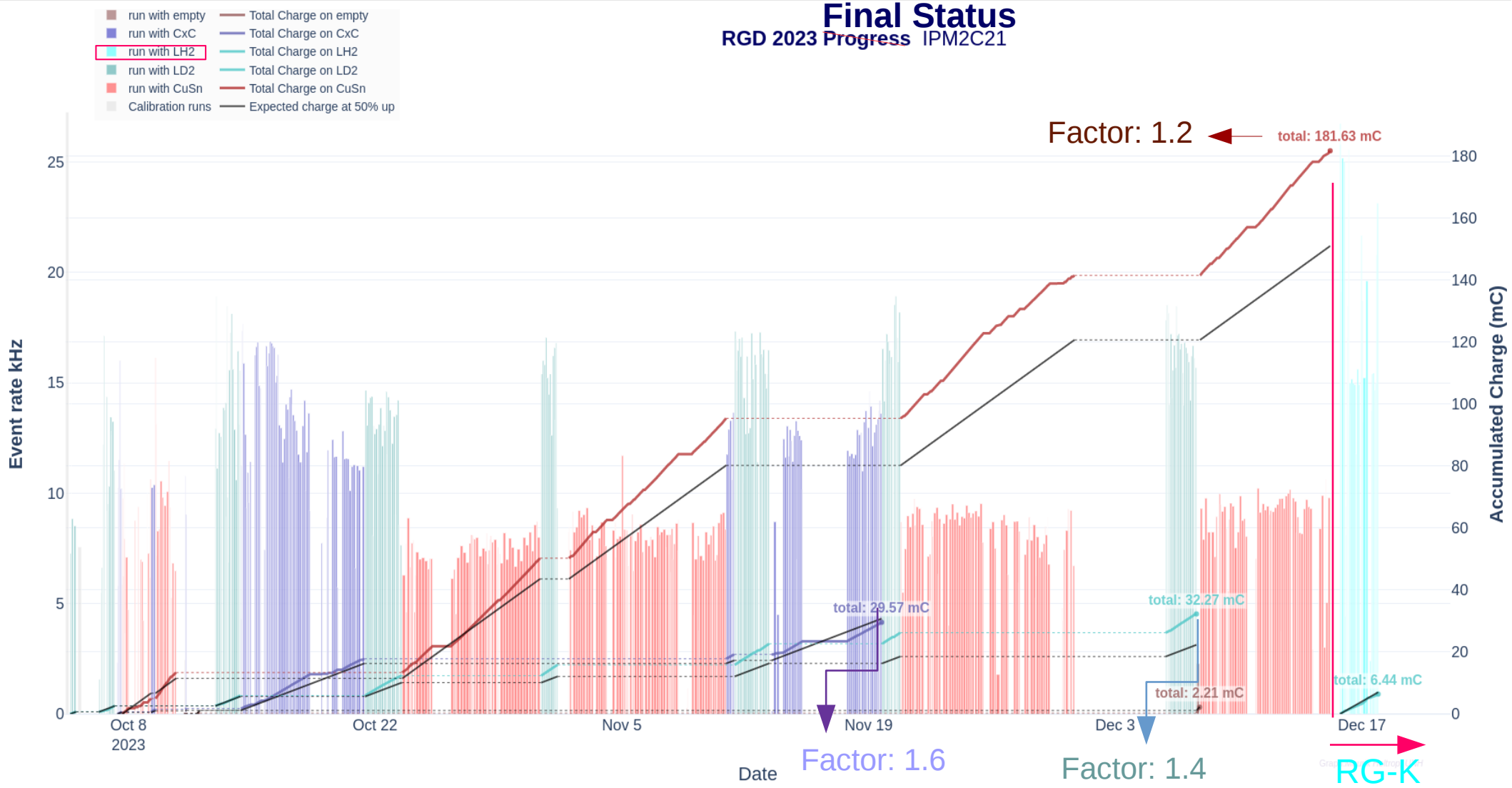
Run Activities: Dec. 12th – Dec. 14th for CuSn @ 100 (30*) nA

- Dec 12th Day – Dec. 13th Owl Shift: RC report
  - ✔ Day: ABU: 6.9 h; BANU: 0.5 h; BNA: 0.6 h
    - ✗ BANU ⟹ adcecal1, adcecal1 & adcpcal2 (*100% busy*) ROCs reboot & DAQ reset
  - ✔ Swing: ABU: 6.56 h; BANU: 1.04 h; BNA: 0.4 h
    - ✗ BANU ⟹ DC S3, 4 & 5 R1 HV communication issue
  - ✔ Dec. 13th Owl: ABU: 5.6 h; BANU: 1.6 h; BNA: 0.5 h
    - ✗ BANU ⟹ C.A. to change DC HV PS; adcftof1 (*100% busy*) ROC reboot & DAQ reset
- Dec 13th Day – Dec. 14th Owl Shift: RC report
  - ✔ Day: ABU: 6.23 h; BANU: 0.25 h; BNA: 1.5 h
    - ✗ BANU ⟹ mvt2 (*100% busy*) ROC reboot & VNC/DAQ full recovery (*shrunken VNC window!*)
  - ✔ Swing: ABU: 6.97 h; BANU: 0.37 h; BNA: 0.66 h
    - ✗ BANU ⟹ adcftof1 (*100% busy*) ROC reboot & DAQ reset
  - ✔ Dec. 14th Owl: ABU: 4.5 h; BANU: 0.36 h; BNA: 3.18 h (**Short 30 nA low Lum. run*)
    - ✗ BANU ⟹ dc11 (*100% busy*) ROC reboot & DAQ reset

Run Activities: Dec. 14th – Dec. 15th for CuSn @ 100 (30*) nA

- Dec 14th Day – Dec. 15th Owl Shift: RC report
  - ✔ Day: ABU: 2.4 h; BANU: 0.2 h; BNA: 5.4 h
    - ✗ BANU ⟹ adcftof5 (*100% busy*) ROC reboot & DAQ reset
  - ✔ Swing: ABU: 6.5 h; BANU: 0.36 h; BNA: 1.14 h (*30M *30 nA low Lum. run*)
    - ✗ BANU ⟹ Regular start/end run sequence; BB insert/retract in/from beamline
  - ✔ Dec. 15th Owl: ABU: 5.16 h; BANU: 0.23 h; BNA: 1.6 h
    - ✗ BANU ⟹ DAQ reset (*low occupancy in S5 ECal, PCal, FTOF 1A/B Panels & HTCC*); adcecal1 (*100% busy*) ROC reboot (*ended the last RG-D run 10min earlier than 7AM cut-off for RG change!*)

Final RG-D Collected Data



THANK YOU Notes

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Given this is my last call for the RG-D RC/OA meeting, I would like to express my sincere gratitude to everyone who diligently contributed to the success of RG-D run periods, which had its ups and downs with three fast dumps of torus and solenoid magnets, Faraday Cup failure, Moller cone sagging, 5 days of injector gun downtime, several upsets of electronics/DAQ, etc. Still, we collected very nice data, as reflected in our live charge plot https://clasweb.jlab.org/clas12online/timelines/rg-d/RGD2023_progress_all.html, and the run group is determined to extract the best physics results from it.
On behalf of the whole RG members, THANK YOU very much for your support, and I am looking forward to continuing the work coordination with y'all until these dataset results are published as soon as possible.

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THANK YOU Notes (Cont'd)

- Many thanks for all support and guidance provided by our TF during RG-D preparation:
  https://clasweb.jlab.org/wiki/index.php/Hall-B_Run_Group_Task_Forces#tab=RG-D_2FE

[edit]

Overview | RG-C | RG-D/E | RG-H | RG-I | RG-J | RG-L | RG-M | RG-N

(click here to edit this task force)

RG-D is tentatively scheduled as the next experiment to run in Hall B after RG-C. Its configuration is very similar to the previous RG-M run, with the same solid target assembly but the successor to the Saclay cryotarget.

RG-E has a new target system being developed by the UTFSM group in Chile, possibly requiring a new experimental readiness review by the physics division.

Members

- N. Baltzell (PI)
- B. Miller
- F. Hauenstein
- X. Wei
- L. El Fassi
- W. Brooks

& S. Stepanyan

Meetings

3rd Monday of every month, with ZOOM: https://jlab-org.zoomgov.com/j/1604731240

Documentation

- PAC Proposals: D and E, and 2021 Status Reports: D and E
- 2019 Experimental Readiness Review
  - wiki, committee's report, RG-D's response, committee's reply, RG-D's followup
  - Combined RG-D/E final response
- Target Apparatus
  - RG-D solid target
  - RG-E double target
    - Presentation and Milan Ungerer's master's thesis
    - Drawing and 3d Model, and another drawing.
  - New Hall B cryo target
- Run Plan and Conditions
  - RG-D
  - RG-E
- Run Wiki (to be split)

February 21, 2022 ← **First Meeting**

This meeting focuses on RG-D

1. Overview and Run Plan (Lamiaa)

August 21, 2023 ← **Last Meeting**

- https://jlab-org.zoomgov.com/j/1604731240
- RG-D
  - run preparations

THANK YOU Notes (Cont'd)

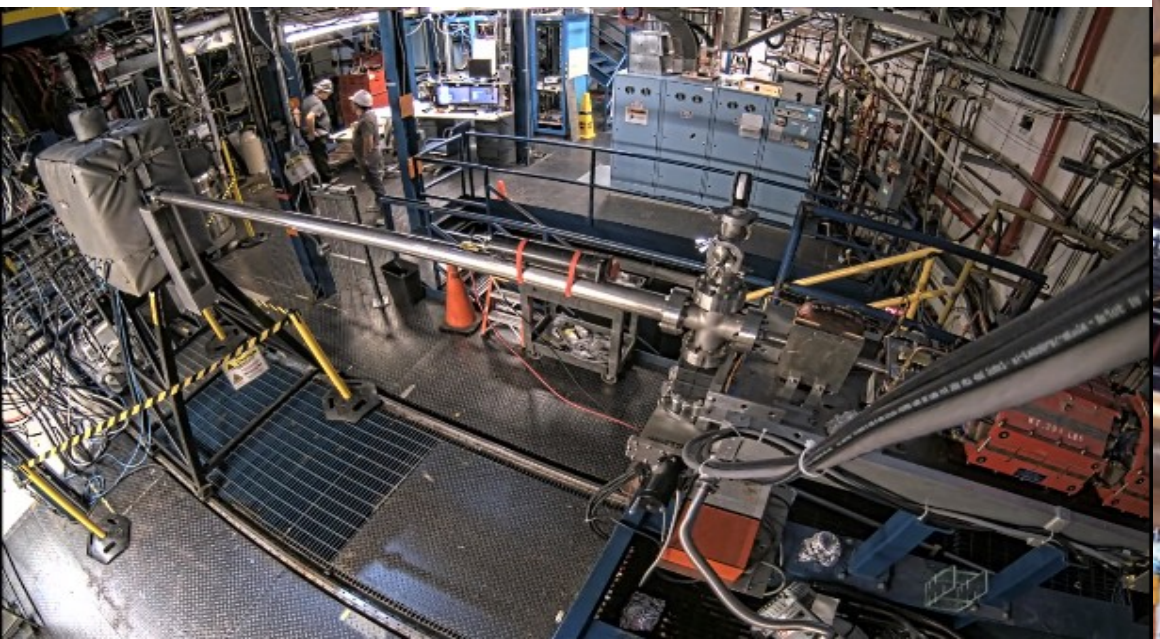
- Many thanks for all support provided for trigger road generation & validation:
  - ✔ Detailed info under the RG-D analysis wiki-page Run Info tab:

RG-D Trigger Studies

- Velery's HBLOG entry#: 4234663 about the archive location of RG-D trigger files.
- Valery's HBLOG entry#: 4201758 about the RG-D outbending low-Q^2 suppression trigger files.
- Valery's HBLOG entry#: 4201027 about the RG-D outbending trigger file with the position trigger prescaled by a factor of 20.
- Valery's HBLOG entry#: 4177341 about modified triggers files for RG-D commissioning and production periods with various FCup Prescale Ractor (PR= 2^{n-1} + 1).
- Valery's HBLOG entry#: 4177341 about RG-D triggers files during commissioning.
- Ben Raydo HBLOG entry#: 4175213 about the RG-D electron trigger firmware production.
- The trigger DC road dictionaries specific to the RG-D run conditions were generated for inbending and outbending torus configurations:
  - ◊ Trigger roads generation and validation by Raffaella D., Rafayel P., and Mikhail Y.

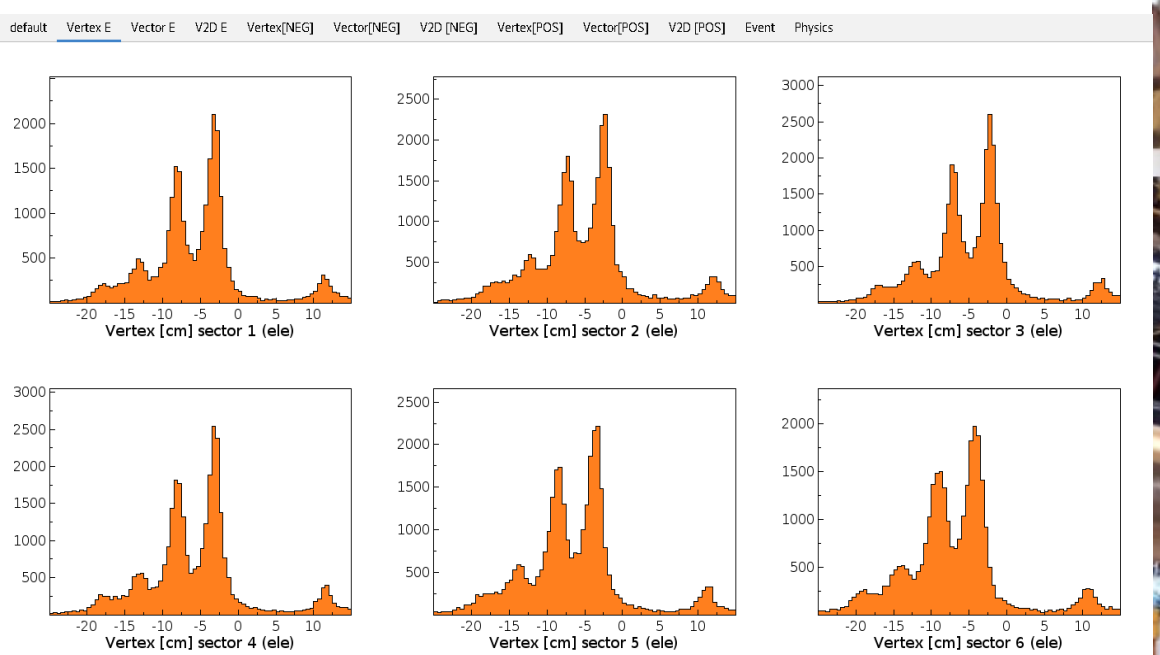
THANK YOU Notes (Cont'd)

- Many thanks for supporting RG-D target system:
  - ✔ Hall B Staff: Patrick A., Stepan S., Xiangdong W., Eugene P., ……
  - ✔ Cryogenic group: Chris K., James M. & James B., …
  - ✔ Hall B Engineers and Technicians: Bob M., Denny I., Dontre T., …..



THANK YOU Notes (Cont'd)

- Many thanks for supporting RG-D target system:
  - ✔ Hall B Staff: Patrick A., Stepan S., Xiangdong W., Eugene P., Gagik G. for Online Reconstruction….
  - ✔ Cryogenic group: Chris K., James M. & James B., …
  - ✔ Hall B Engineers and Technicians: Bob M., Denny I., Dontre T., …..



THANK YOU Notes (Cont'd)

- Many thanks for all support provided by detector/calibration experts during RG-D commissioning & various run periods:
  - ✔ Detailed info under the RG-D analysis wiki-page Run Info tab:

Comissioning Plans

- The list of commissioning runs suggested by the Hall-B detector experts on the July 26th meeting can be found in this WORD document created by the RG-D PDL Nathan Baltzell.

Møller Runs

- Results of RG-D Møller run with **1/2-wave plate IN and current H.Wien angle of (-50 degrees** & *spin controls related to the Injector Gun HV of* **140 kV** *rather than the previous 180 kV prior to the Gun incident* and new photocathode) are summarized in the HBLOG entry #: **4230331**. It leads to a polarization of **-80.262 +/- 1.463%**.
- Results of RG-D Møller run with **1/2-wave plate IN and new H.Wien angle of (-50 degrees**) are summarized in the HBLOG entry #: **4229016**. It leads to a polarization of **-73.788 +/- 1.463%**.
- Results of RG-D Møller run with **1/2-wave plate OUT and new Wien angle (-30 degrees**) are summarized in the HBLOG entry #: **4221922**. It leads to a polarization of **83.180 +/- 1.57 %**.
- Results of RG-D Møller run with **1/2-wave plate OUT and new Wien angle (-45.3 degrees**) and after **the Hall C pass change** are summarized in the HBLOG entry #: **4220054**. It leads to a polarization of **84.818 +/- 1.574 %**.
- Results of RG-D Møller run with **1/2-wave plate OUT & new Wien angle (-15.3 degrees**) are summarized in the HBLOG entry #: **4213710**. It leads to a polarization of **79.550 +/- 2.035 %**.
  - The Wien angle for the past Møller runs was **-48.3 degrees**.
- Results of RG-D Møller run with **1/2-wave plate IN** are summarize in the HBLOG entry #: **4208922**. It leads to a polarization of **-79.228 +/- 1.583 %**.
- Results of RG-D Møller run with **1/2-wave plate OUT** are summarize in the HBLOG entry #: **4202624**. It leads to a polarization of **79.089 +/- 1.477 %**.
- Results of RG-D Møller run with **1/2-wave plate OUT** are summarized in the HBLOG entry #: **4197887**. It leads to a polarization of **78.012 +/- 1.473 %**.
- Results of the first RG-D Møller run with **1/2-wave plate IN** are summarize in the HBLOG entry #: **4193442**. It leads to a polarization of **-79.228 +/- 1.498 %**.

Special thanks to Nathan P., Eugene P. for all assistance with beam polarization measurement, and our Engineers/Techs along with the Magnet Group for debugging/resolving fast dumps magnet issues

THANK YOU Notes (Cont'd)

- Many thanks for all support provided by detector/calibration experts during RG-D commissioning & various run periods:
  - ✔ Detailed info under the RG-D analysis wiki-page Calibration and Alignment tab:

Online Calibration/Alignment w/. Empty Target

Nov. 21st, 2023

- Yuri overrode the 7.15 mm y-offset previously applied to the CVT alignment and also shifted the z-vertex position to set the downstream window to -2.5 cm; see HBLOG entry #: 4224438.
- Raffaella overrode the 7.15 mm y-offset previously applied to the DC geometry and beam offsets as the source of the observed relative shift between the beam direction and the Møller cone was found to be mostly due to the cone's sagging; see HBLOG entry #: 4224427.

Oct. 31st, 2023

- Yuri Gotra uploaded the CVT alignment constants extracted using the run 18316 to the RG-D variation "rgd_fall2023"; see HBLOG entry #: 4213129.

Oct. 20th, 2023

- Raffaella and Matthew completed the third DC alignment iteration using the run 18316, which included a y-shift of 0.715 cm to account for the beam offset; see the info recorded on the rgd_fall2023 variation.

Oct. 17th, 2023

- Yuri Gotra uploaded RG-C CVT alignment constants to the RG-D variation "rgd_fall2023" as the initial constants for FD alignment, calibration, and cooking; see HBLOG entry #: 4201866.

Oct. 11th, 2023

- DC: Florian loaded the T2D calibration constants to CCDB, which were extracted using the alignment run 18316; see HBLOG entry #: 4197254.

Oct. 9th, 2023

- DC: Florian Hauenstein performed T2D calibration using the alignment run 18316; see HBLOG entry #: 4196249.

EPICS Calibration

Oct. 17th, 2023

- BPM Calibration w.r.t. FC: Rafo calibrated BPMs current w.r.t. FCup current reading based on the BB analysis he performed on Oct. 8th; see HBLOG entries #: 4201989.

Oct. 8th, 2023

- BB (Beam Blocker): Rafayel Paremuzyan extracted attenuation coefficients for CuSn and empty targets w/. and w/o. BB via a scan of beam currents from 5 nA up to 190 nA (5, 20, 40, 60, 80, 120, 160 then 190 nA); see HBLOG entries #: 4195622 and 4195624, respectively.

THANK YOU Notes (Cont'd)

- Many thanks for all support provided by detector/calibration experts during RG-D commissioning & various run periods:
  - ✔ Detailed info under the RG-D analysis wiki-page Calibration and Alignment tab:

Online Calibration w/. Inbending Data

Nov. 28th, 2023

- DC: Florian updated the **L3 sensor pressure values** for the inbending run range 18305 - 18418; see HBLOG entry #: 4228239.

Nov. 27th, 2023

- DC: Florian updated the T2D pressure-dependent calibration using the inbending **LD_2 run 18335** and applied its constants, mainly for SL3 and 6, to the run range **18317 - 18418**; see his HBLOG entry #: 4227888

Nov. 20th, 2023

- FTOF: Daniel calibrated the attenuation length, effective velocity, gain balance, status, time walk, time walk position, time offset, and timing resolution; see his HBLOG entry #: 4223200, using

Oct. 20th, 2023

- CTOF: Daniel calibrated the TDC-FADC time offset using run 18355. He also adjusted the 4 ns shift of some run ranges 18343-18344, 18360-18366, 18376-18377, 18420-18422, and 18475-18478 using the TDC-FADC time offset calibration of run 18362; see his HBLOG entry #: 4203856.
- DC: Florian updated the T0 DC time offsets with individual sector/superlayer offsets (T00) based on inbending run 18333 for Sec4SL6 and Sec6SL6 due to bad fits of this run in the Pass0.1 timeines; see HBLOG entry #: 4203834

Oct. 10th, 2023

- ECAL & PCAL: Cole updated the HV tables using the inbending run 18312 while being down due to the solenoid trip in the Swing shift; see HBLOG entry #: 4196847.

Oct. 8th, 2023

- RF: Raffaella updated the "RF offsets" using the inbending run 18309; see HBLOG entry #: 4195642.

Oct. 6th, 2023

- HTCC: Gain and Time calibration was done by Izzy Illari using the inbending run 18309; see HBLOG entry #: 4194103;
  Gain tables, "CTOF_HTCC/adcctof1_gain.cnf", used in the trigger were updated by Izzy using the inbending run 18309; see HBLOG entry #: 4194054.
- Ecal: Gain and Attenuation were updated by Cole Smith using the inbending run 18312; see HBLOG entry #: 4194393;
  : Time calibration was done by Cole using the inbending run 18312; see HBLOG entry #: 4194914;
- FTOF: Gain & HV tables were updated by Daniel using the inbending run 18312; see HBLOG entry #: 4193839.
- CTOF: Gain & HV tables were updated by Daniel Carman using the inbending runs 18309 & 18312; see HBLOG entry #: 4193758.

Sept. 29th, 2023

- Raffaella De Vita set the RF clock to 2.004 ns (*64 cycles @ 500 MHz electron bunch frequency*) for the RG-D run period since only three halls are running; see HBLOG entry #: 4189477.

THANK YOU Notes (Cont'd)

- Many thanks for all support provided by detector/calibration experts during RG-D commissioning & various run periods:
  - ✔ Detailed info under the RG-D analysis wiki-page Calibration and Alignment tab:

Online Calibration w/. Outbending Data

Dec. 3rd, 2023

- DC: Florian updated the **L3 sensor pressure values** for the outbending run range 18419 - 18900; see HBLOG entry #: 4229902.

Nov. 27th, 2023

- DC: Florian updated the T2D pressure-dependent calibration using the outbending **LD_2 run 18433** and applied its constants, mainly for SL3 and 6, to the run range **18419 - infinty**; see his HBLOG entry #: 4227888

Nov. 20th, 2023

- FTOF: Daniel calibrated the attenuation length, effective velocity, gain balance, status, time walk, time walk position, time offset, and timing resolution; see his HBLOG entry #: 4223200 & 4223207, using

Oct. 31st, 2023

- FTOF: Daniel calibrated the attenuation length, effective velocity, gain balance, status, time walk, time walk position, time offsets, and timing resolution using a run 18437. Constants applied to a run range 18419-infinity; see his HBLOG entry #: 4212976.

Oct. 28th, 2023

- FTOF: Gain & HV tables were updated by Daniel using the outbending run 18437; see HBLOG entry #: 4210799.

Oct. 26th, 2023

- Beam Offset: Mariana Tenorio, in coordination with Raffaella, extracted beam offsets using the outbending run 18437 that was processed after the DC alignment; see HBLOG entry #: 4209436.

Oct. 24th, 2023

- CTOF: Daniel calibrated the attenuation length, effective velocity, gain balance, status, time offsets, hposbin, and tres using run 18437. Constants applied to a run range 18419-infinity; see his HBLOG entry #: 4207408.

Oct. 14th, 2023

- Ecal: FTIME and DTIME tables were adjusted to zero residual offsets based on the outbending run 18419 for the whole datasets (18300 - Inf.); see HBLOG entry #: 4199712;
  Gain and attenuation tables were updated by Cole using the outbending run 18419 for the range (18418 - Inf); see HBLOG entry #: 4199724;

THANK YOU Notes (Cont'd)

- Many thanks for all support provided by software group experts for data processing & timelines:
  - ✔ Efforts led by Nathan B., Raffaella D., Christopher D., & Mikhail Y.,…..
  - ✔ Detailed info under the RG-D analysis wiki-page Data Processing tab:

Data locations

RG-D disk spaces: /mss/clas12/rg-d, /cache/clas12/rg-d, /volatile/clas12/rg-d
Raw data: /mss/clas12/rg-d/data, /cache/clas12/rg-d/data

- Timelines webserver RGD area: /u/group/clas/www/clas12mon/html/hipo/rgd
- Timelines: /volatile/clas12/rg-d/production/tline
- Pass0.* cooking: /volatile/clas12/rg-d/production/pass0.*
- Trigger validation studies: /volatile/clas12/rg-d/production/trig
- CVT efficiency studies: /volatile/clas12/rg-d/production/cvt
- DC HV scan studies: /volatile/clas12/rg-d/production/dchv
- Calibration runs: /volatile/clas12/rg-d/production/calib
- Luminosity scan studies: /volatile/clas12/rg-d/production/lumi
- Physics: /volatile/clas12/rg-d/production/prod
- AI tracking: /volatile/clas12/rg-d/production/ainet

Timeline Summary

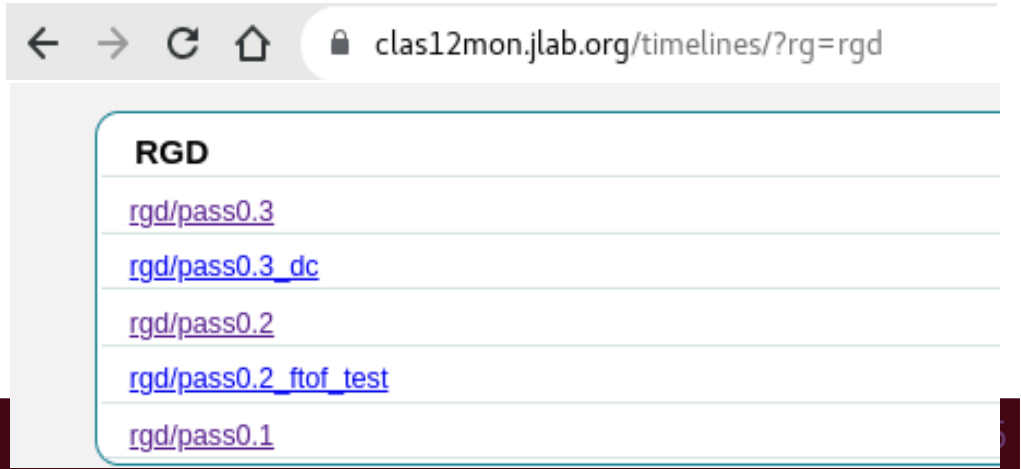
Dec. 06th, 2023
Pass0.3_dc DC pressure. Mini-Timelines https://clas12mon.jlab.org/rgd/pass0.3_dc/tlsummary/

Nov. 29th, 2023
Pass0.3 started. Timelines https://clas12mon.jlab.org/rgd/pass0.3/tlsummary/

Nov. 08th, 2023
Pass0.2 Ftof test. Timelines https://clas12mon.jlab.org/rgd/pass0.2_ftof_test/tlsummary/

Nov. 02th, 2023
Pass0.2 started. Timelines https://clas12mon.jlab.org/rgd/pass0.2/tlsummary/

Oct. 16th, 2023
Pass0.1 started. Timelines https://clas12mon.jlab.org/rgd/pass0.1/tlsummary/



THANK YOU Notes (Cont'd)

- Many thanks for all support provided by software group experts for AI studies and its network training:
  - ✔ Efforts led by Raffaella D., Gagik G., Daniel M. & Mikhail Y.
  - ✔ Detailed info under the RG-D analysis wiki-page AI Studies tab:

- Uses a j4np software from CLAS12 AI tools to produce trained networks.
- To train a network, we first need to select a set of data, a run, to be extracted using the following command:

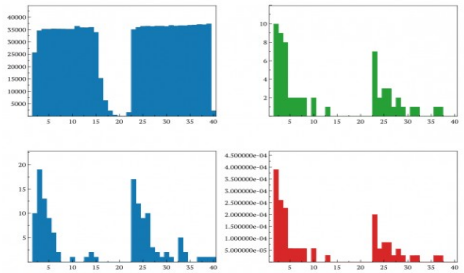
```
./bin/j4np.sh clas12ml -extract -o outputname_ai -max 75000 /volatile/clas12/rg-d/production/ainet/path-to-run/*
```

- Runs used for this extraction must contain "TimeBasedTrkg::TBClusters" and "TimeBasedTrkg::TBTracks" banks. The "ain't" folder was made for this specific run. Two outputs will be created according to the output name defined: outputname_ai_tr.h5 and outputname_ai_va.h5; These outputs are used to train the network as follows

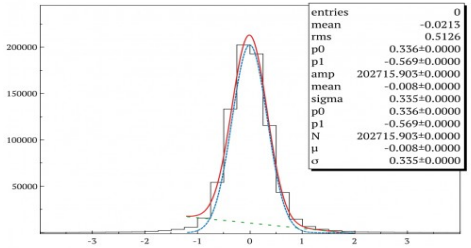
```
./bin/j4np.sh clas12ml -train -a networkname.network -r 18305 -t outputname_ai_tr.h5 -v outputname_ai_va.h5 -e 1250 -max 25000
```

Nov. 25th, 2023

- A new network located at "/volatile/clas12/rg-d/production/ainet/v0_ib_LD2_aicv was produced" from the inbending LD2 luminosity scan runs, 18325 and 18326, collected with 75 nA and 100 nA, respectively (see plots below).
- The produced network is saved in the following directory: volatile/clas12/dmat/networks/newRGD.network, and is available to process data after its complete validation. Once runs 18325 & 18326 are recooked with the new RGD network, a comparison with a previous RG-B network can be made.



The X axis of these four histograms corresponds to the momentum of particles; positively charged covers the range 0 - 20 & negatively charged covers the range 20 - 40, for the typical RG-D momentum range of 0 - 10 GeV. The top left plot corresponds to tracks, while the bottom left plot corresponds to tracks not properly identified. The right bottom plot corresponds to the ratio of the other two as a function of the momentum bin.

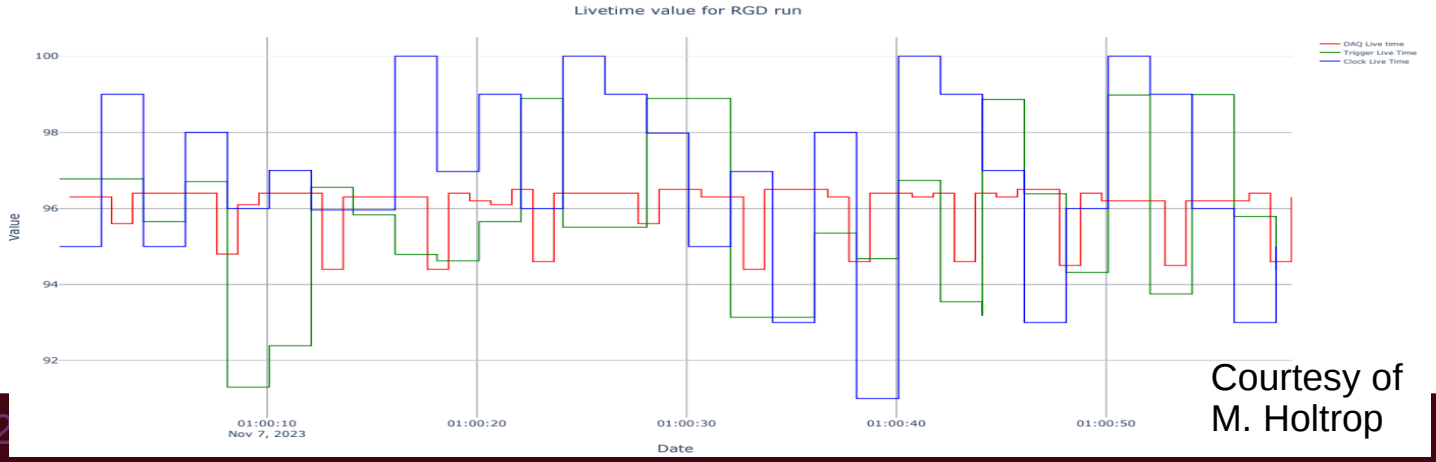


Fit of resolution plot: The network can determine missing cluster position with an accuracy of 0.335 wires.

THANK YOU Notes (Cont'd)

- Many thanks for all support provided by software group experts for debugging the FCup readout corruption issue in RG-D datastream:
  - ✔ Efforts led by Nathan B., Sergey B., Raffaella D., Maurik H., Matthew M., Rafayel P., Eugene P., Stepan S., & Mikhail Y.

- The dedicated meeting to discuss the gated beam charge calculation for RG-D data due to the FCup failure leading to a corrupted gated/ungated charge info in our datastream took place last Thursday, Dec. 7th at 3:30 PM. We had a fruitful discussion with the goal to **1)** understand and compare the livetime info we have in the MYA database, and **2)** dump the MYA BPMs current, calculate the charge out of them, correct them with the livetime, and compare them to each other to extract any systematic uncertainty from that.
- **Work in progress!**



Courtesy of M. Holtrop

B_DAQ:livetime: DAQ based livetime

B_DET_TRIG_DISC_00:cTrg:livetime: Trigger-based live-time

B_DAQ:livetime_pulser: Pulser/Clock based livetime

THANK YOU Notes & End-of-run Party

- Many thanks to JLab as a whole (*RG & RCs*….) for making the RG-D experiments a success!
- As a first celebration: All will be invited to end-of-run party; when?

Friday, Mar. 15th, 2024, @ 2 PM in Resfac (*TBC*) following the closeout of the Spring CLAS Collaboration meeting!

Tenure-Track Experimental Nuclear Physics JLab-bridge Faculty Position

https://inspirehep.net/jobs/2735723

Mississippi State U. • North America

nucl-ex | physics | hep-ex | Junior (leads to Senior)

Deadline on Feb 1, 2024

Job description:

The Department of Physics and Astronomy at Mississippi State University (MSU) invites applications for a tenure-track faculty position in experimental nuclear physics starting August 16, 2024. This position is a Bridge Position with the Thomas Jefferson National Accelerator Facility (JLab), which carries a course release time of 50% for the first five years in order to expedite research efforts at MSU and JLab. We are seeking an individual with a primary research interest in the hadronic and nuclear physics conducted at JLab. The successful individual will be expected to build a strong research program that will enhance the current programs of the medium energy group at Mississippi State University and Jefferson Lab. The medium energy group at MSU is currently involved in experiments at JLab and Fermilab and has plans for the forthcoming Electron-Ion Collider at Brookhaven National Laboratory. We also have groups leading research in theoretical nuclear physics and a low-energy nuclear physics group conducting experiments at LANL and several University-based laboratories, including FRIB.

The position is a nine-month, tenure-track bridge position at the Assistant Professor level. Applicants must have a doctorate in experimental nuclear physics or a related field, an established record of publications in scientific journals, a strong commitment to excellence in teaching at both undergraduate and graduate levels, and will be expected to initiate and lead an independent research program utilizing the state-of-the-art facility at Jefferson Lab. A commitment to maintaining a respectful environment, free from harassment, while striving to ensure equal opportunity for all in research, teaching, and/or service will be considered favorably.

MSU is a land-grant university with an enrollment of about 22,500 students. The department offers B.S., M.S., and Ph.D. degrees. Applicants are expected to continue the departmental tradition of excellence in sponsored research involving students, in teaching, and in service. Local resources include the High-Performance Computing Collaboratory, the Institute of Imaging and Analytical Technologies, and the Institute for Clean Energy Technology.

Applicants must apply online at www.msujobs.msstate.edu (**JOB NO: 506982**; direct link) and include a cover letter, curriculum vitae, a research statement with grantsmanship plans and a plan for Promoting Inclusive and Equitable Research (PIER), a statement of teaching philosophy and experience, and the contact information for at least three references. The guidelines for a PIER plan can be found on the websites of most federal funding agencies, such as https://science.osti.gov/grants/Applicant-and-Awardee-Resources/PIER-Plans. Any inquiries should be sent to Dr. Lamiaa El Fassi (le334@msstate.edu). Screening of applications will begin on February 1, 2024, and continue until the position is filled.

MSU is an equal opportunity employer, and all qualified applicants will receive consideration for employment without regard to race, color, ethnicity, sex, religion, national origin, disability, age, sexual orientation, genetic information, pregnancy, gender identity, status as a U.S. veteran, and/or any other status protected by applicable law. We always welcome nominations and applications from women, members of any minority group, and others who share our passion for building a diverse community that reflects the diversity in our student population.

Contact: Lamiaa El Fassi (le334@msstate.edu)
Letters of Reference should be sent to: le334@msstate.edu
More Information: https://explore.msujobs.msstate.edu/en-us/job/506982/assistant-professor