Fall 2017-Spring 2018 run plan

A. Deur
Jefferson Lab

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- Operation is for physics running. Planned energy: 11.64 GeV (Same as Fall 16, Spring 17, Possible cavity contamination due to CHL1 partial loss of power on July 27th might prevent reaching this energy.)
  - 4-hall operation.

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- Accelerator work related Hall D:
  - Act. Col. fast raster commissioning;
  - FFB commissioning, test nA BPm, test stripline BPM improvements for lower beam current ops.;
  - Beam Energy Monitoring;
  - Rapid-access system.

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- Hall D configuration:
  - Solenoid at 1350A. Repetition rate: 250 MHz (As for Spring 17. Fall 16 was 500 MHz);
  - Beam current 1 nA-1.5 μA. ~170 nA for standard production on 58 μm diamond;
  - Main diamond: 58 μm J70-100 (+old: 50 μm J1a50, new: 47 μm J70-105 & 17 μm JD70-104);
  - 5mm collimator hole (except for TAC runs and possible thin diamond test runs);
  - Slow locks or FFB;
  - Tagger quadrupole on (negative polarity);
  - LH2 target.

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Hall D goals:

- **Gather GlueX polarized data with its necessary systematic data;**
- High intensity DAQ/L1 tests;
- Possibly: low intensity GlueX production runs (TBD);
- TAC V-wire radiator commissioning;
- 17 μm JD70-104 diamond alignment;
- Detector tests: CDC and FDC HV scans, ToF CAEN TDC non-linearity study;
- (muon chamber, TRD. Non-invasive tests).

Schedule and organization

Timeline (12 weeks):

- Nov. 27th-Dec. 3rd: Electron beam restoration.
- Dec. 4th-Dec. 18th: Hall D Fall run. (2 weeks): Focus on checkout/commissioning/tests.
- Dec. 18th-Jan. 8th: Xmas break.
- Jan. 9th-Jan. 11th: Electron beam restoration.
- Jan. 12th-Mar. 23rd: Hall D Spring run. (10 weeks): Focus on production.

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Fall 17: A. Deur.

Spring 18: TBD later this year. Format: 1 week RC + 3 days overlap if first-time RC. 2 week+ 3 days otherwise.

Need one more experienced RC or two green RCs.

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Run coordination, subsystem status, data quality monitoring, offline analysis: Will be discussed at RC meeting (daily during the run. Usually 8:45am, counting house).

Fall 17 2-week runplan

1. Verify electron beam quality and establish photon beam. ~2 days
2. DAQ, L1 trigger, detectors and beamline checkouts. ~1 day
3. Re-align 58 μm diamond (JD70-100). ~0.5 day
4. High-intensity DAQ/LI tests. ~0.5 day (splits in two 4h periods separated by other tests/production)
5. Commission fast raster for A.C. ?0.5 days?
6. CDC, FDC, ToF TDC. ~0.2 day (ToF test: two 1h runs separated by ~2 days)
7. TAC V-wire radiator commissioning+TAC run. ?1 day?
8. Align new 17 μm diamond JD70-104. ~1 day.

~8 days?

9. **Gluex data production**. ~5 days?

10. Straight track run (16h, nominally at the end of the Fall run).

11. Parasitic TRD/muon chamber tests.

Spring 18 10-week runplan

1. Verify electron beam quality and establish photon beam.
2. DAQ, L1 trigger, detectors and beamline checkouts.
3. Check 58 μm diamond (JD70-100) alignment.

4. **Gluex data production**:
   - Harp scans (once every 2 days).
   - Empty target run every 2 weeks. (Done tandard production current.)
   - TAC runs. 2 TAC runs (one at the beginning, one in the middle of the run).
   - Physics production with diamond(s) and 5 mm collimator.
     - Balanced amount of $0^o/90^o/45^o/135^o$ data + shorter Al. run per cycle: gather 10-15% of total number of triggers with Al. radiator.
     - 2h runs and no more.
     - Switch polarization every run.
     - Start production with 58 μm diamond (JD70-100).
     - When/if new 17 μm diamond is aligned, do production runs to assess its quality (1-2 days?). Decide what diamond should be used.
     - Luminosity: Initially, same as Spring 17 run: ~50 kHz, 170nA on 58 μm diamond.

5. Parasitic TRD/muon chamber tests.

Summary

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- Re-establish good beam.
- Equipment checkout.
- Special tests.
- GlueX production.

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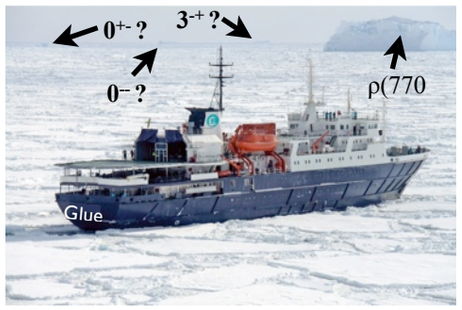

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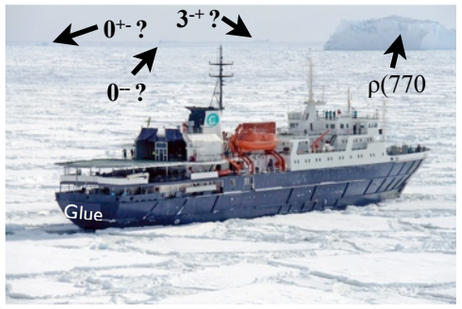

Need:

- Request for tests, with short description and time estimate.
- 1 or 2 RC volunteer(s).