Summary of Spring 2015 Commissioning run

A. Deur Jefferson Lab



A. Deur. GlueX collaboration meeting. 05/12/2015





A. Deur. GlueX collaboration meeting. 05/12/2015

New conditions for Spring 2015 commissioning

- •e⁻ beam: •10.5 GeV Nominal; CHL failure: all useful data taken at 5.5 GeV.
 •~5 nA-200 nA.
 •RF timing available.
- •Diamond radiators: SI45-S90 (90μm), JIA50 (50μm), J2A100.
- •Cryotarget. (30cm. No more long air gap around the target).
- •Polarimeter on the beam line. Tot. Abs. Count. available. Static profiler.
- •Improvements on all subsystems (DAQ, trigger, online, Start Counter straighten,...)

Run plans:

- Original (10.5 GeV): https://halldweb.jlab.org/hdops/wiki/index.php/Spring_2015_Commissioning_Plan
- Revised (5.5 GeV): https://halldweb.jlab.org/hdops/wiki/index.php/Spring_2015_6GeV_Commissioning_Plan

Disclamer: Accelerator commissioning: not physics running.



Run plan



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Run plan

Spring 2015 commissioning. Hall D and tagger close at t=0 Tasks at same y-axis value are interspersed



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Timeline of actual run





•First photons on liquid Hydrogen target.

Vertex reconstruction:

2track POCA,doca cut



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•Empty target vertex reconstruction for target alignment verification. (Simon Taylor)

Empty target runs 3082, 3084

r < 0.2 cm



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Coherent peak also seen with pair-spectrometer.



• π^0 peak seen in the two calorimeters (Justin Steven, Will McGinley).



 3.5 hour run: 20% of the stat. of the Fall 2014 run.
 Good statistics (DAQ and triggers: Sergei Furletov, Alex Somov) (~1% of what would be needed for a good BCal calibration.)



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3.5h of data with polarized photons. (other few hours of polarized data available. different conditions)





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Accelerator repair attempts. Uncertainty on the outcome.

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Continue at 10.5 GeV?









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Continue at 5.5 GeV? **Extension**?



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Apr. 25-May 2: Smooth sailing through 5.5 GeV commissioning: Coherent peak, DAQ, triggers...



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May 6: First physics assymetries seen.



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Spring 2015 goals

I.Commission goniometer and diamonds 🗸.

- 2.Commission H₂ cryotarget and verify alignement \checkmark .
- 3.Run DAQ in Block-Mode at high rates 🗸.
- 4.Optimization of triggers <
- 5.Callibrate calorimeters with π^0 .
- 6.Complete other detector callibrations and alignments <

7.Commission beam stability feedbacks 5.

- 8.Establish that we can run the solenoid at 1300A X.
- 9.Commission accelerator RF timing <
- 10.Commission photon polarimeter 😒
- II.Commission Total Absorption Counter X.

12.Use (polarized) photons with 3.4 mm collimator X.

Obtaining physics asymmetries summarizes the outcome of reaching these goals.