

Hall A 12 GeV DVCS Status report

December 16th 2013
Hall A collaboration meeting
Alexandre Camsonne

Outline

Experiment presentation

Calorimeter building status

Electronics status

Task list

Man power

Conclusion

Hall A 12 GeV DVCS experiment

DVCS

$$\gamma^* + p \rightarrow \gamma + p$$

Electroproduction

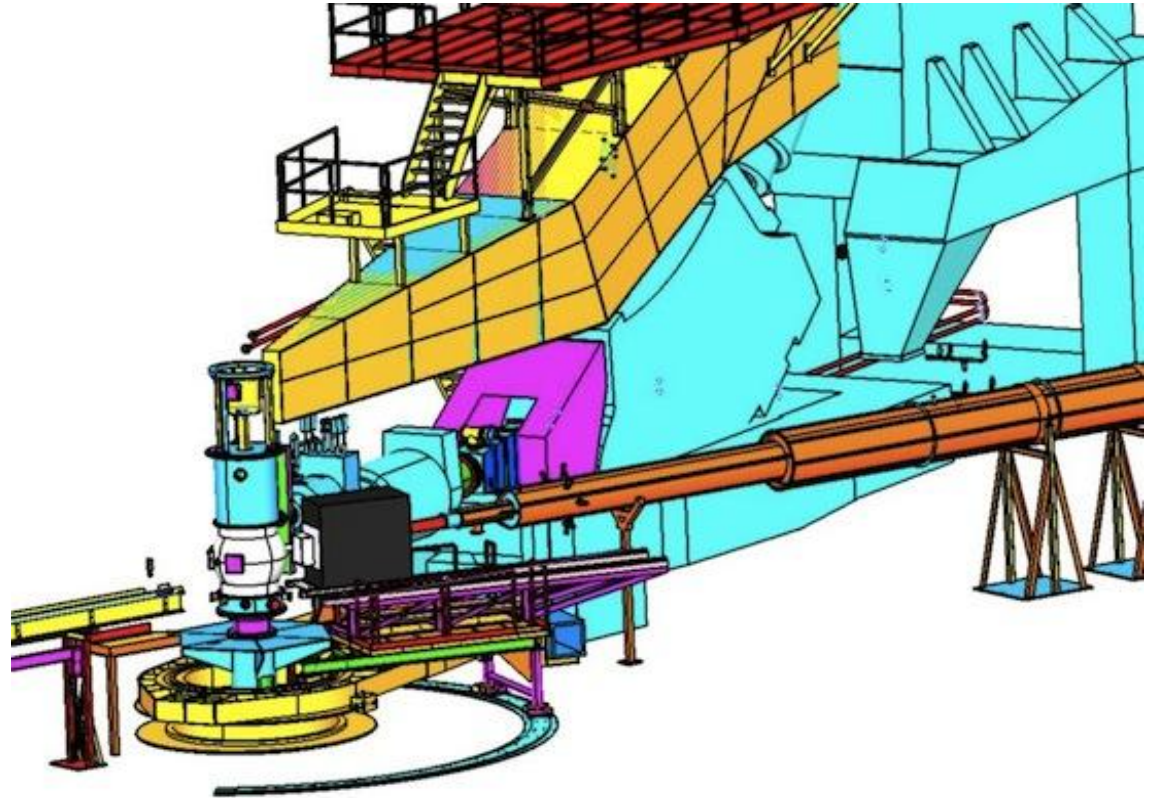
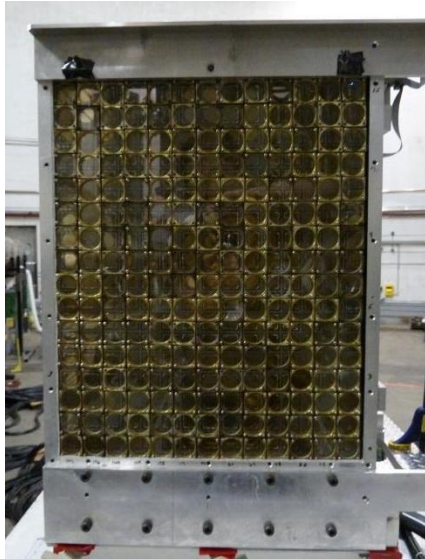
$$e + p \rightarrow e' + \gamma + p$$

Use HRS to detect electron in DIS

Use Lead fluoride calorimeter to detect the real photon

Same setup as 6 GeV experiment

Experimental setup



E12-06-114: setup and tests at JLab



- Photon arm in Test Lab
- All cabling is done
- PbF_2 blocks are ready (PMTs are assembled and blocks wrapped)
- (Almost) ready to pile up blocks and take cosmics



Calorimeter progress

- DVCS area in test lab
 - DVCS stand moved
 - Shelves installed
 - PMTs checked in France and sent back
 - All PbF2 blocks rewrapped and on site
 - Racks for DAQ and slow control
 - 2 HV crates, controls software working
 - Power, network installed
 - All RG58 cables tested and connected
 - HV cables connected

Electronics progress

- 1 VME64X crate with intel CPU in FPP rack
- Readout and decoder using Intel CPU (90 MB/s per crate)
- Calorimeter trigger installed
 - Logic and readout on separate FPGA
 - larger bus for interFPGA transfer to not loose resolution on threshold
 - block transfer mode implemented but need to be debugged and tested
- Review in March

Task list - Timeline

- Calorimeter
 - Stack calorimeter - 2 weeks - End Dec 2013
 - Test cosmics - Jan 2014 to June 2014
 - Test DC current ADC (missing patch panel) - 1 week
 - Layout RG213 install stand - 2 month
- DVCS Electronics
 - Install 2nd and 3rd VME crate - 3 days - Jan 2014
 - Test trigger Block Transfer (Need engineer for debugging)
2 weeks - February 2014
 - Cable trigger - 3 days - January 2014

Task list - Timeline

- DVCS electronics
 - Test high rates full setup - End Feb 2014
- Hall A standard equipment
 - HRS
 - High Resolution VME TDC - 2 weeks - Feb 14
 - Scintillator timing - 1 week - Feb / Mar 14
 - BCM -1 week - Jan 14
 - BPM - 1 week - Jan 14
 - Helicity - 1 week - Jan 14
 - Polarimetry

Man power

- Orsay (calo / soft)

- Carlos Munoz
- Rafayel Paremuzyan
- Camille Desnault

- Ohio University
(DAQ / analysis)

- Julie Roche
- Paul King
- **Norman Israel**
- **Mongi Diamini**

- Old Dominion University
(Calo / HRS)

- Charles Hyde
- **Hashir Rashad** HRS
- **Stacey Allison**
- Kijun Park Calo / HV

- Jefferson Laboratory

- Alexandre Camsonne DAQ / Calo
- Robert Michaels DAQ / BCM/BPM/ Helicity / HV

- Clermont Ferrand

- Magali Magne Electronics

DVCS collaboration meeting

19-20 December 2013
Old Dominion University
4600 Elkhorn Ave
Norfolk VA 23529
Room: OCNPS/PSB 1100

<https://www.jlab.org/indico/conferenceDisplay.py?confId=58>

Conclusion

Calorimeter ready by the end of the year

Electronics needs debugging and test high rates, ready by March 2014 for review

Can test electronics when beam is here in March.

No issues to be ready by summer 2014, should be ready by March in case beam is good.