



HRS Status and Installation Timeline

Vincent Sulkosky

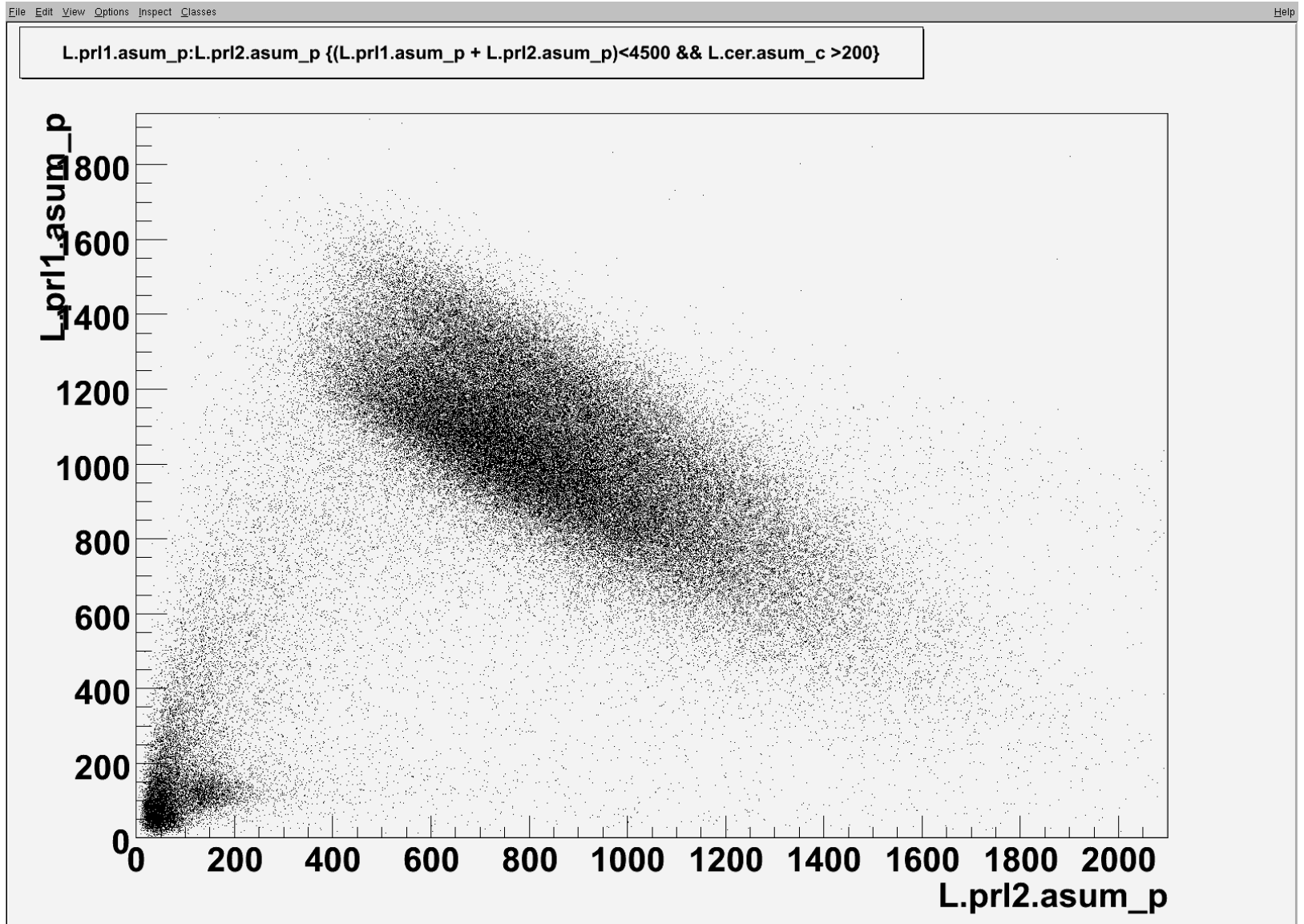
Massachusetts Institute of Technology

SRC Collaboration Meeting
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HRS Detector Status

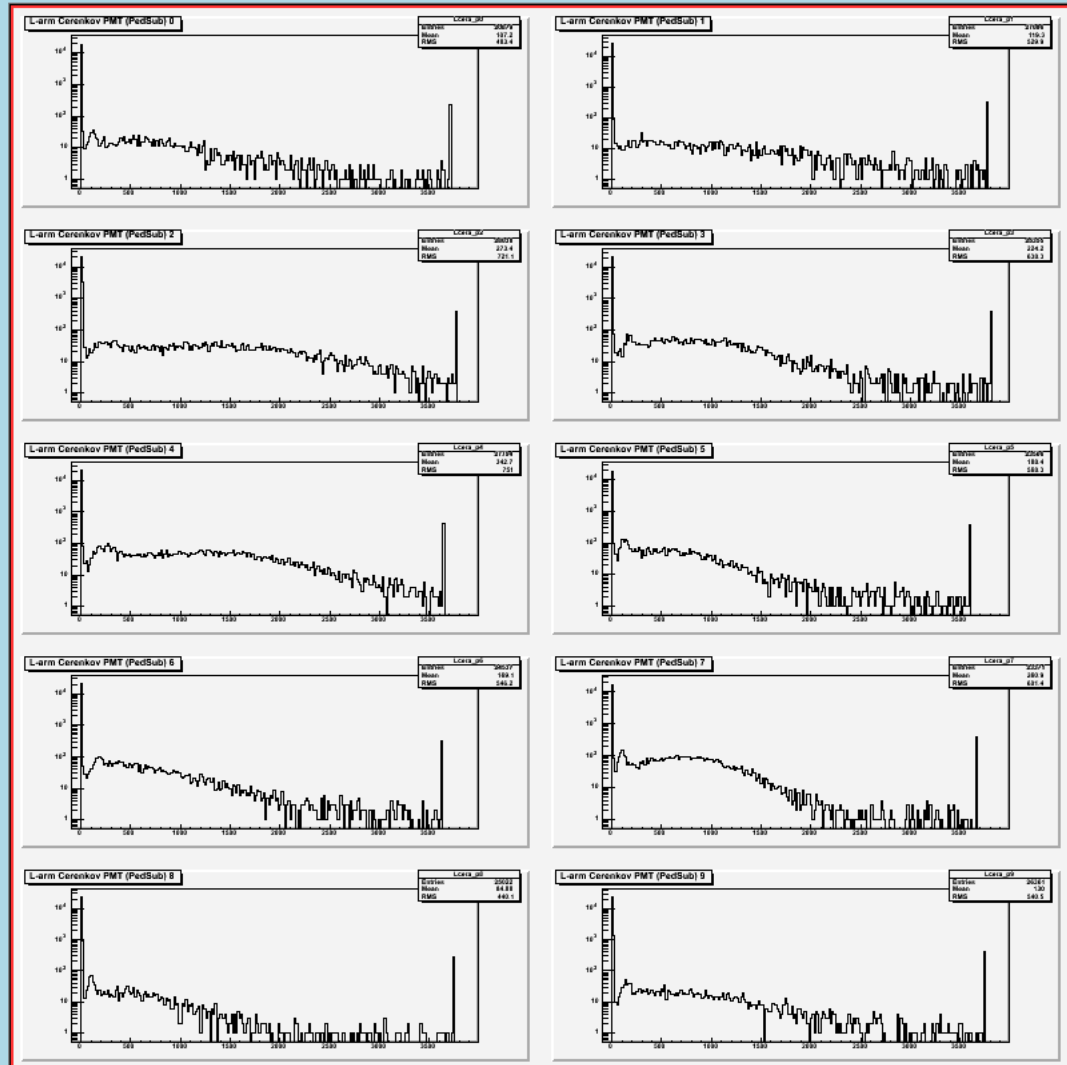
- Left HRS detectors:
 - VDCs, S0, S1, S2m, gas Cerenkov and lead glass
 - All currently being used by DVCS and fully functional
 - Zhihong Ye calibrated the detectors at the start of DVCS

HRS Detector Status PR



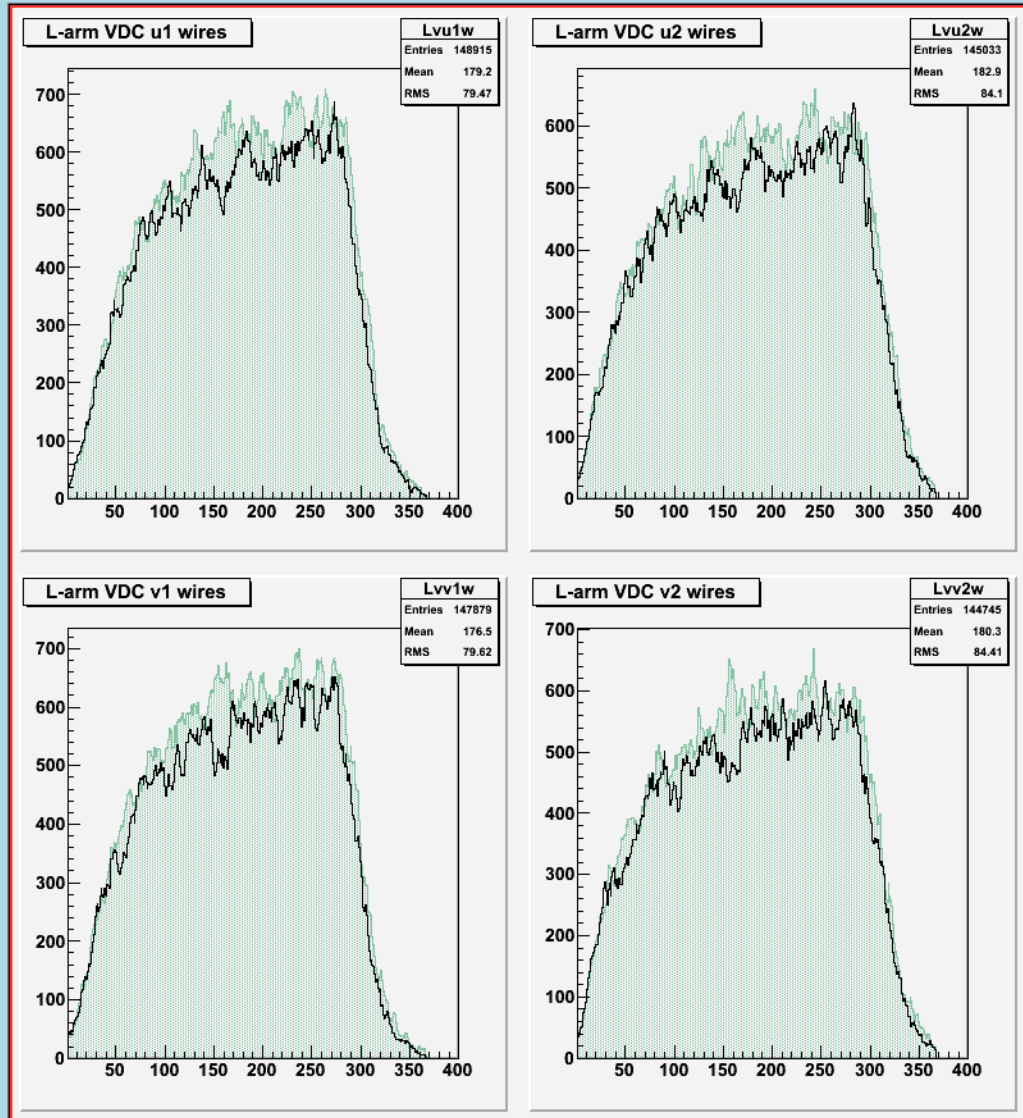
HRS Detector Status GC

- L-arm S0 ADC pedsub (0-5)
- L-arm S1 L-PMT ADC pedsub (0-5)
- L-arm S1 L-PMT TDC (0-5)
- L-arm S1 compact plot
- L-arm S2m ADC pedsub (0-5)
- L-arm S2m ADC pedsub (6-11)
- L-arm S2m ADC pedsub (12-15)
- L-arm S2m TDC (0-5)
- L-arm S2m TDC (6-11)
- L-arm S2m TDC (12-15)
- L-arm S2 compact plot
- L-arm Cerenkov ADC pedsub (0-9)
- L-arm Cerenkov TDC (0-9)
- L-arm Cerenkov compact plots
- Cerenkov sum
- L-arm VDC wires
- L-arm VDC TDC
- L-arm VDC hits
- L-arm VDC efficiency
- L-arm VDC efficiency (zoomed)
- L-arm VDC number of tracks
- Pion Rejector1 ADC(0-11) (ped sub)
- Pion Rejector1 ADC(12-23) (ped sub)
- Pion Rejector1 ADC(24-33) (ped sub)
- Pion Rejector2 ADC(0-11) (ped sub)
- Pion Rejector2 ADC(12-23) (ped sub)
- Pion Rejector2 ADC(24-33) (ped sub)
- Pion Rejector ADC (ped sub) compact plot
- Pion Rejector
- Pion Rejector sum.x_sum.y
- Lumis: Rates vs Event
- Lumis(BCM normalized): Rates vs Event



HRS Detector Status: VDC

- L-arm S0 ADC pedsub (0-5)
- L-arm S1 L-PMT ADC pedsub (0-5)
- L-arm S1 L-PMT TDC (0-5)
- L-arm S1 compact plot
- L-arm S2m ADC pedsub (0-5)
- L-arm S2m ADC pedsub (6-11)
- L-arm S2m ADC pedsub (12-15)
- L-arm S2m TDC (0-5)
- L-arm S2m TDC (6-11)
- L-arm S2m TDC (12-15)
- L-arm S2 compact plot
- L-arm Cerenkov ADC pedsub (0-9)
- L-arm Cerenkov TDC (0-9)
- L-arm Cerenkov compact plots
- Cerenkov sum
- L-arm VDC wires
- L-arm VDC TDC
- L-arm VDC hits
- L-arm VDC efficiency
- L-arm VDC efficiency (zoomed)
- L-arm VDC number of tracks
- Pion Rejector1 ADC(0-11) (ped sub)
- Pion Rejector1 ADC(12-23) (ped sub)
- Pion Rejector1 ADC(24-33) (ped sub)
- Pion Rejector2 ADC(0-11) (ped sub)
- Pion Rejector2 ADC(12-23) (ped sub)
- Pion Rejector2 ADC(24-33) (ped sub)
- Pion Rejector ADC (ped sub) compact plot
- Pion Rejector
- Pion Rejector sum:x_sum:y
- Lumis: Rates vs Event
- Lumis(BCM normalized): Rates vs Event
- BPMs
- Triggers: Rates vs Event
- BCM: Rates



HRS DAQ Status

- Right HRS Status:
 - VDCs, S0, S1, S2m, gas Cerenkov and lead glass
 - DAQ and triggers were brought back to life after APEX
 - HV crate was replaced due to a bad power supply
 - However after the replacement the scaler rates were inconsistent with the previous crate and the same HV settings

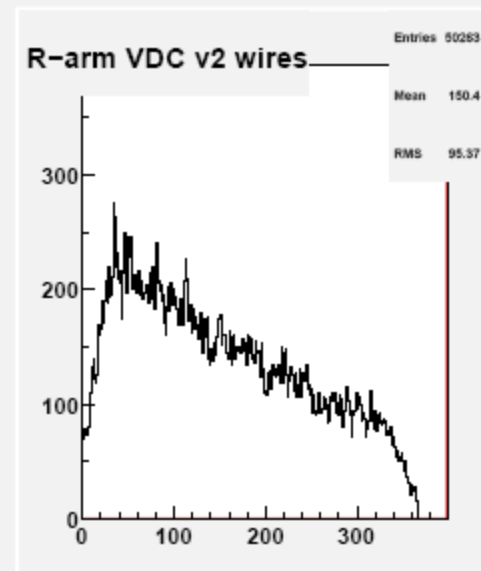
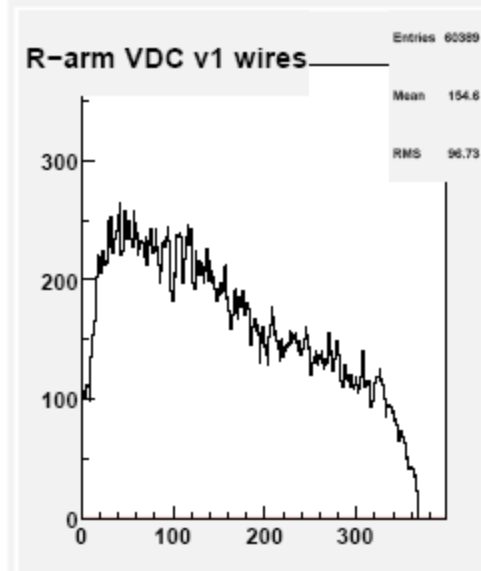
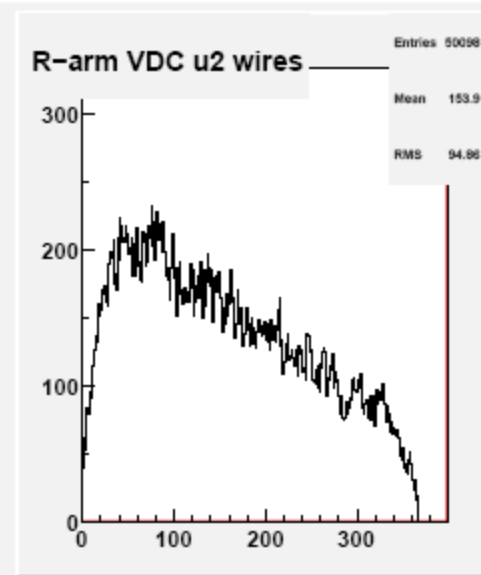
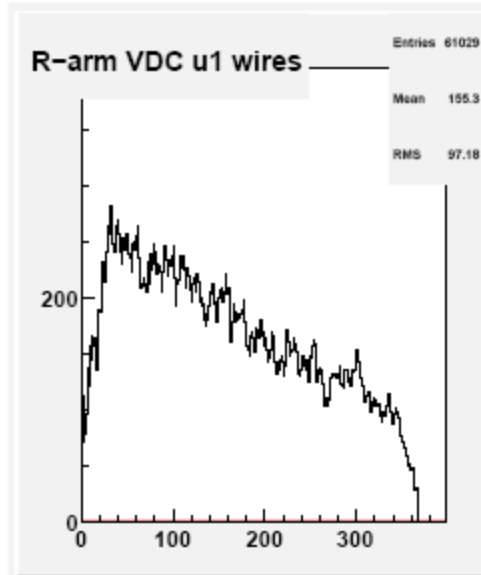
HRS Scaler Rates

- Right HRS rate issue:
 - Noticed that there was a day/night dependence of the rates higher at night and lower during the day
 - Indicates a temperature dependence with the hut being opened and closed
 - Suggest replacing the HV crate again due to the inconsistencies so far seen with this crate

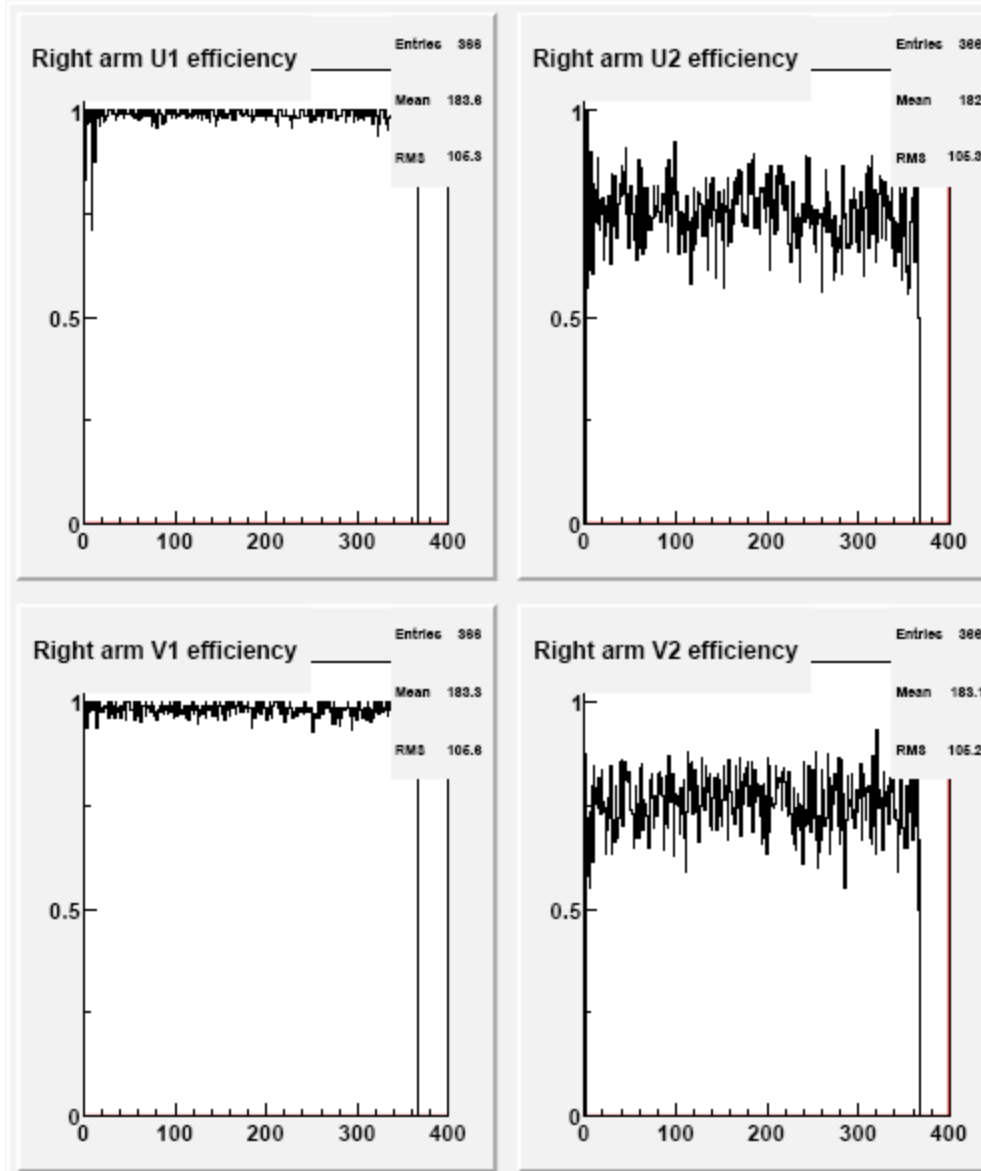
HRS Detector Status II

- All TDC channels had good signals
- VDC was functional and all problematic channels were fixed after the rearrangement from APEX running
- Only issue was the top chamber indicated a low efficiency; suspect the problem is with software

R-HRS Detector Status:VDC



R-HRS Detector Status: VDC





Installation Timeline

Highlights from Ed's Schedule

- January 3-7:
 - Move BB equipment to Hall A
 - This might not be realistic and might partially slip to January 10-14, though **Ed wants it done early**
- January 3-7:
 - Install neutron detector
 - Expect this might slip into the next week for the same reasons as above
- January 7: Move right HRS to 25°
- January 10: Install BB stand onto pivot
- January 7-13: Run cables for neutron detector
- January 14: Begin testing neutron detector

Highlights from Ed's Schedule II

- February 3:
 - Install hadron detector begin cabling
 - Can begin testing WCs and dE and E planes as soon as cabling is completed
- February 11: cool target

Important Survey Dates

- January 24: align target chamber
- January 28: align target
- February 1: BB sieve slit survey
- February 7: align Hadron detector
- Additional surveys: HRS angles and sieve slits not scheduled

SRC Preparations

- Taking Ed's schedule into account:
 - Need to prepare the Test Lab for equipment movement before **December 23rd**
 - Site-wide power outage starting from Dec. 23rd until Jan. 2nd
 - We should start de-cabing around **Dec. 15th**
 - Process should be done neatly and carefully
 - Should also secure any loose items on the weldment
 - Everything should be completed before Dec. 23rd
- **What critical items need to be done before the decabing and clean up in the Test Lab?**

DVCS De-installation

- Alexandre and Florian will be working on de-cabling of the DVCS calorimeter and clean up during the Holiday shut down
- The majority of the first week of January is related to de-installation of DVCS including the target chamber
- We will be using the HV crates and cables from their system

Movement to Hall A

- First week of January the large items will be moved into the hall
 - Hadron package
 - HAND
 - Weldment
- Smaller items:
 - Bertha, cable basket, WC threshold rack, DAQ computer, several plastic bins containing cables, modules, etc
 - Computer and bins we can mostly move ourselves

Installation and Checkout

- Expect that by the end of the second week of January, we can begin testing HAND
- Unless we cable the wire chambers on the floor and de-cable again, we will not be able to test the Hadron package until the end of the first week of February
It has been useful to do wire chamber checkout before placement on the stand.
- Cable movement in Hall A will not possible at least before January 8th (We need to stay out of Ed's way)
- Prior to use, all long ribbon cables need to be checked to avoid using bad cables
- Ideally all signal and HV cable should be checked as well (**can be done before movement but not ideal**)

HRS Preparation

- During floor activities, work can continue on preparing the two HRS's
 - Clean up of L-HRS after DVCS
 - Left HRS FPP needs to be installed
 - Right HRS A2 installation (?)
 - **Installation schedule depends on Jack's schedule**
 - Setup of coincidence between left and right HRS with EDTM pulser
 - Cosmic checkout
 - Most cosmic detector checkout will be performed by Zhihong Ye
- Need to run cables from L-HRS to weldment once in place
- Expect to start some of the work the last week of December

Coincidence Time Simulations

- Setup of HRS can be done in January only depends on installation of detector time frame (left-to-right HRS cables already exist)
- Once the weldment is connected to the L-HRS, the timing simulations can begin for the triple coincidence measurements and calibs.
 - Timeline for HRS to weldment connection is unsure, since we need to keep out of Tech's way running the cables
 - Possible mid to late January
 - Work by Larry, Bob, Aidan and myself