
Hall C 12 GeV Software Progress

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Goals & Milestones

Goals

- Develop a C++/ROOT based analysis code based on the existing Hall A code. Validate with old HMS data.
- Update existing Fortran code with SHMS section

2012

July : Define reference HMS data for testing code

Sep : Documented non-tracking HMS detectors code in Fortran Analyzer

Oct : Ability to analyzed Hall C data at the raw data level in C++ Analyzer

Dec : Documented the drift chambers and tracking code in Fortran Analyzer

Dec : Verify HMS hodoscope analysis in C++ Analyzer

Milestones (Part 2)

2013

Jun : SHMS code added to Fortran Analyzer.

July : Full analysis of HMS data with C++ Analyzer ready

Sep : C++ Analyzer ready for SHMS calorimeter tests.

Dec : Full analysis of HMS data with C++ Analyzer verified by comparison to Fortran analyzer.

2014

Jan : Scalar and BPM analysis code in C++ analyzer

Feb : Calibration codes ready.

Jul : Analyze cosmic ray data in SHMS with both Analyzers

Sep : First beam, analyze data with both Analyzers

Management Status

- Hold biweekly software meeting. [Info and minutes](#) on Hall C wiki.
- [Hall C Software Mailing List \(hallcsw@jlab.org\)](mailto:hallcsw@jlab.org) to see the archives from the mailing list or to subscribe to the mailing list.
- Held joint [Hall A & C data analysis workshop](#) on Dec 12th , 2012.

•Management structure:

Software Manager	Mark Jones	Jefferson Lab
C++/ROOT Analyzer	Gabriel Niculescu	James Madison University
Fortran Analyzer	Ed Brash	Christopher Newport Univ.
Calibrations	John Arrington	Argonne National Lab
Online histogramming	Pete Markowitz	Florida International Univ.
Simulation (SIMC)	David Gaskell	Jefferson Lab

C++ Analyzer Progress

- HMS documentation
 - Calorimeter done.
 - Scintillator planes has started.
 - Aerogel , Cerenkov and Drift chambers not started.
- HMS coding in “hcana”
 - Using GIT for version control
 - One can view the [git repository](#) of hcana on the web.
 - [Git Howto](#) page.
 - Seminar at JLab and talk at Hall A/C workshop
 - Can analyze data at the raw CODA level. Read-in Hall C detector maps and parameter files.
 - Calorimeter and scintillator has made comparison to Fortran analyzer with “slightly processed” data. Need to have DC info to move forward.
 - Aerogel detector has started.
 - Drift chamber code has started with equivalent to h_trans_dc.f

Future Work

- Natural that group responsible for a detector works on the software. Realize that this means delay to areas of the code until detector building is complete.
- Need a group to start working with the code. Not writing code but using it.
 - Make checks against existing HMS run.
 - Mainly scintillator and calorimeter sections. Second pair of eyes.
 - Develop scripts to compare histograms when new code introduced.
- Start work on drift chamber code .
 - Realize the Hampton group has priority on building chambers.