
Hall C 12 GeV Software Progress

August 16th, 2013

Mark Jones
Jefferson Lab

Overview

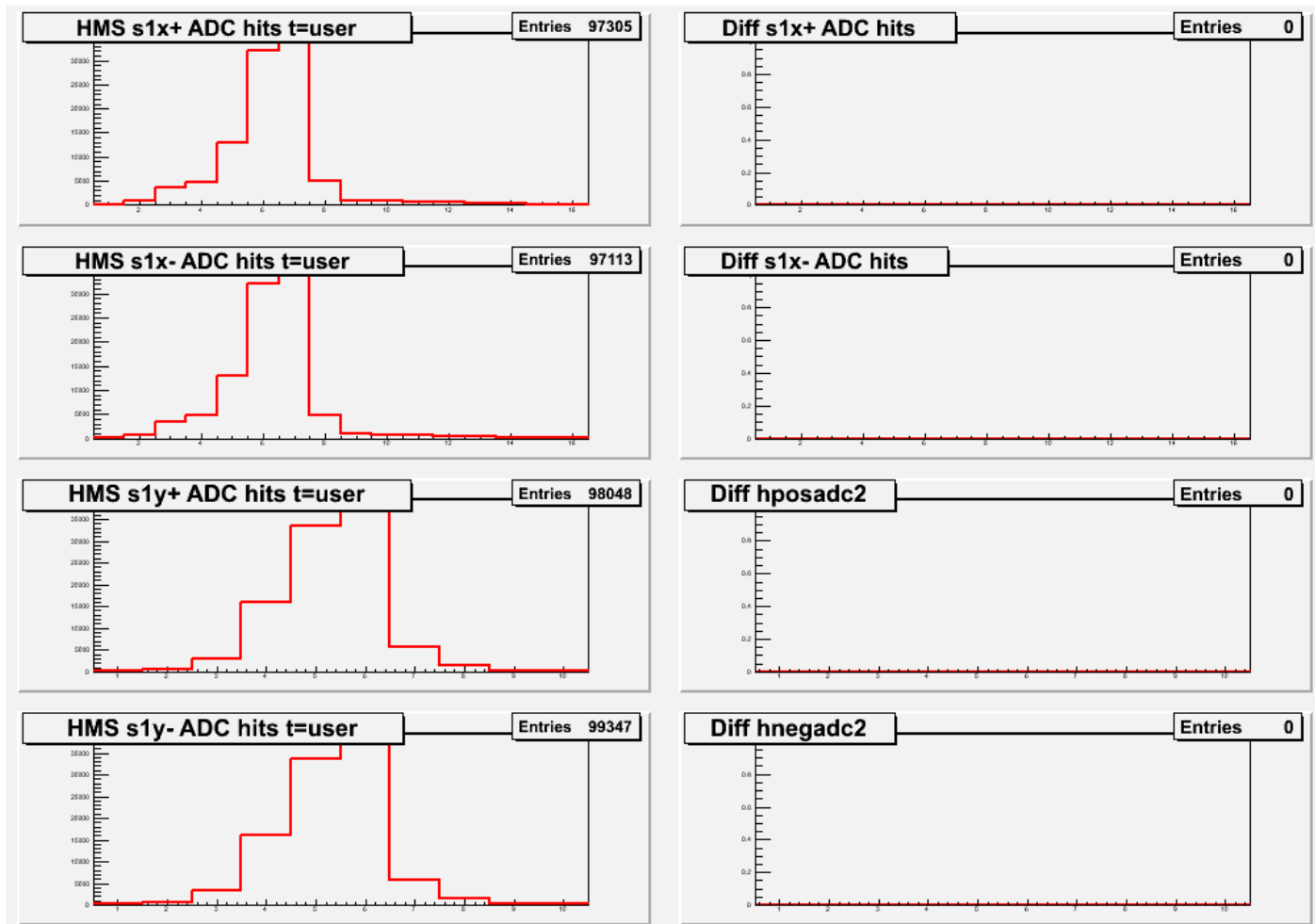
- For the latest status see the [git repository](#) of hcana on the web.
- [Index](#) of 12 GeV Software wiki pages.
- Biweekly software meeting. [Info and minutes](#) on Hall C wiki.
- [Hall C Software Mailing List \(hallcsw@jlab.org\)](#) to see the archives from the mailing list or to subscribe to the mailing list.

Comparison between ENGINE and HCANA

- ENGINE code is in a [git repository](#). A slightly modified branch “mkj” runs on the Centos6.2 machines (ifarm).
- A replay directory is in a [git repository](#). Directory is from the inclusive experiments.
- [Instructions](#) for cloning the hcana repository and running an example.
- A separate hcana replay directory is in a [git repository](#). Has the parameter files to match the ENGINE replay directory. Thanks to Steve can use same PARAM files.
- [Instructions](#) for getting the directories and replaying the data are on the wiki.

HMS hodoscope

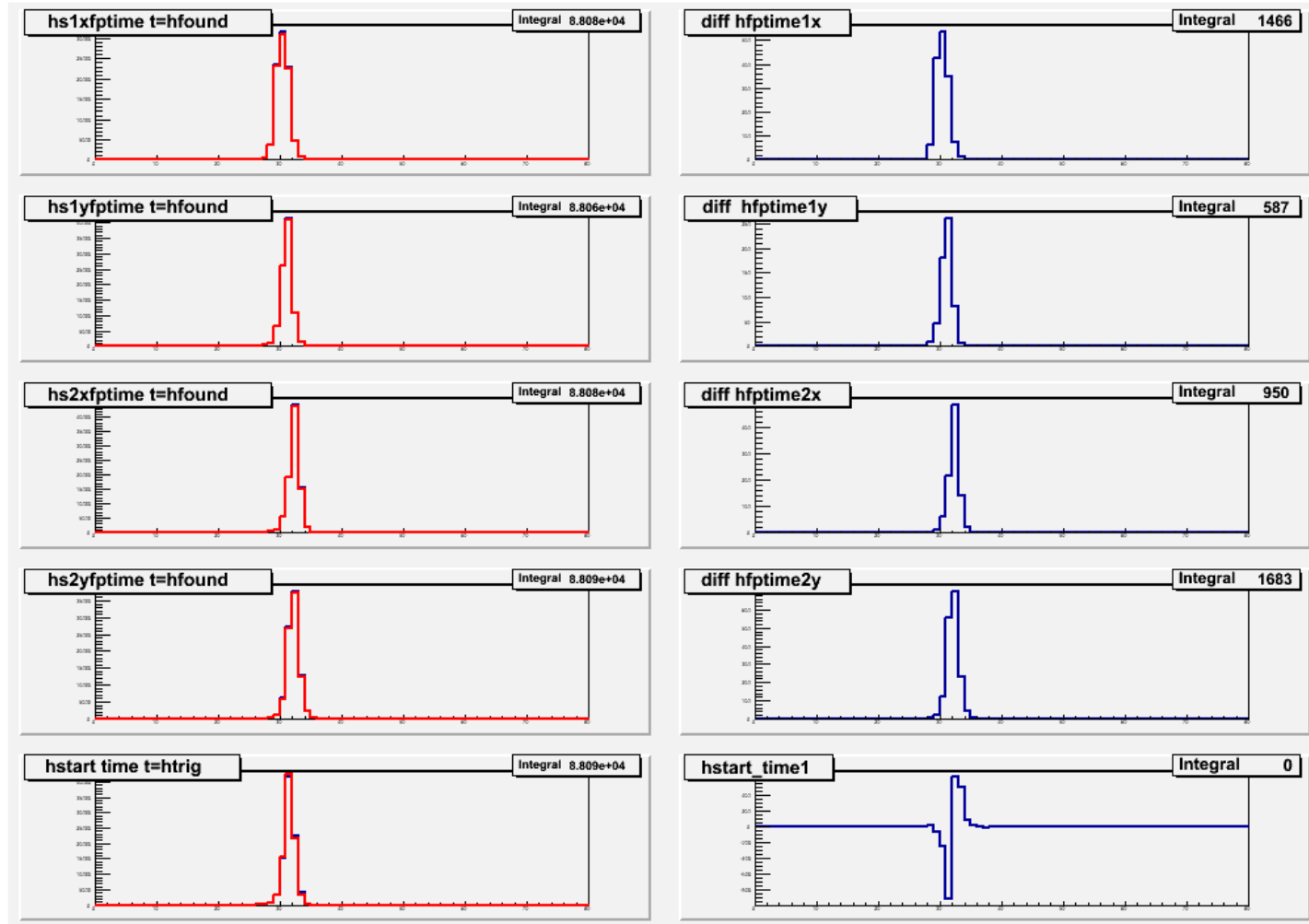
- Code written primarily by Gabriel Niculescu
- Reproduce the basic quantities.



HMS hodoscope

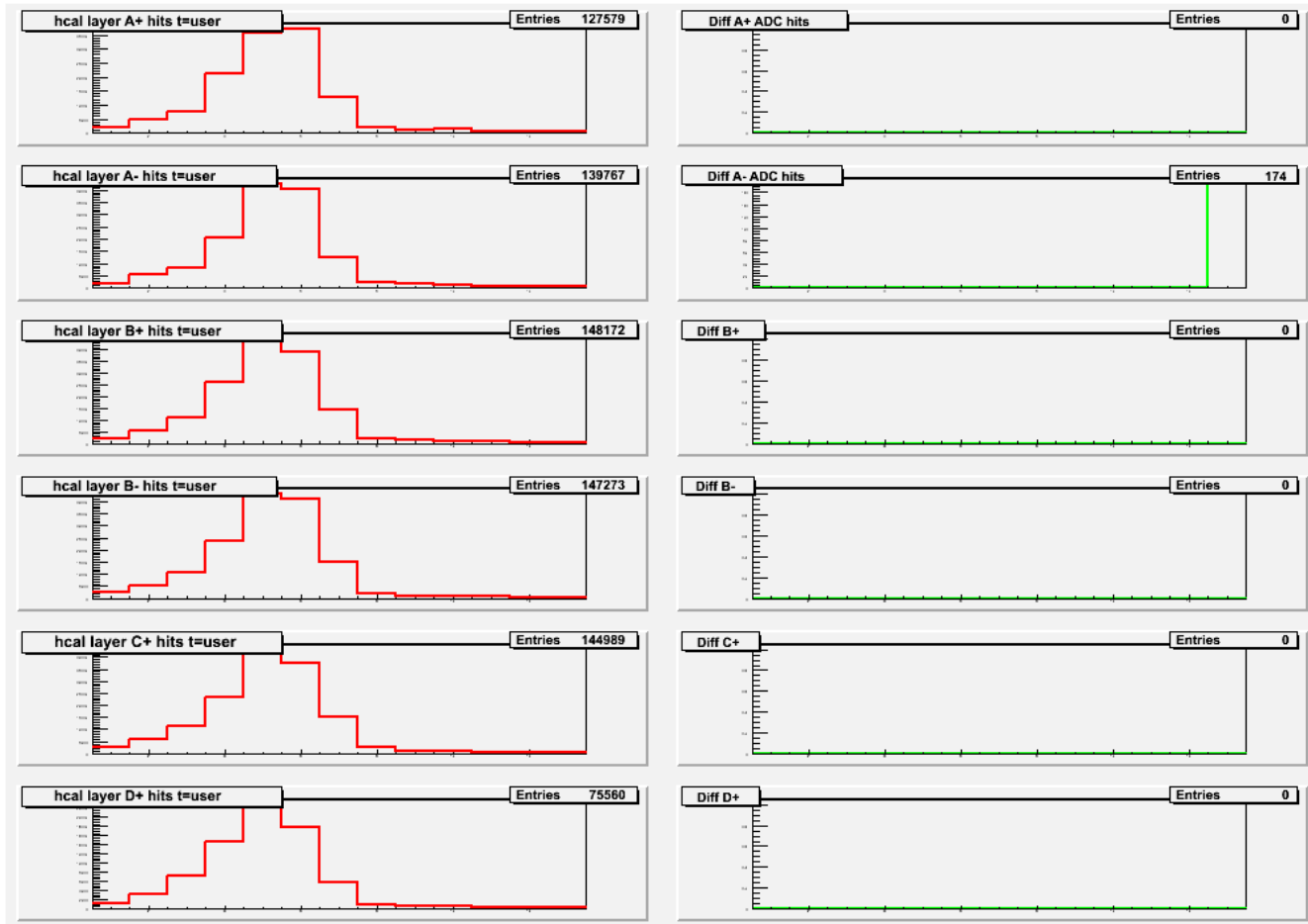
- Some differences such as the focal plane time. Has to do with rejection of out-of-time hits done differently.

- Need DC track to go further



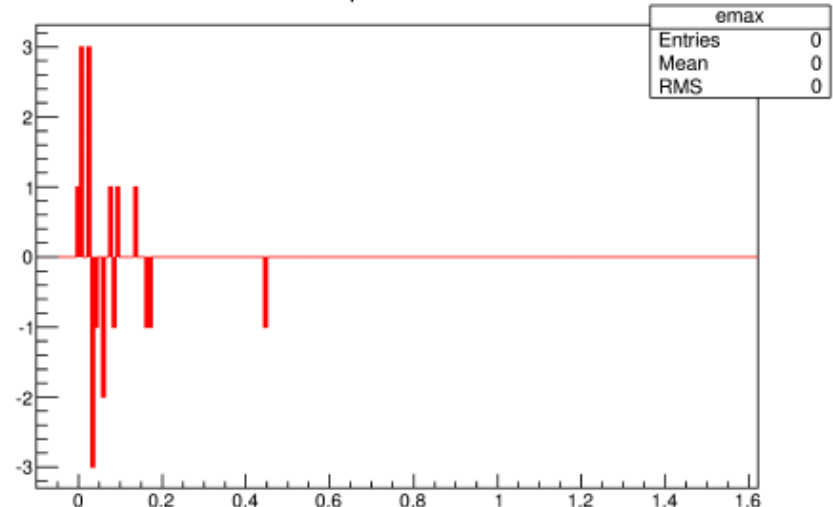
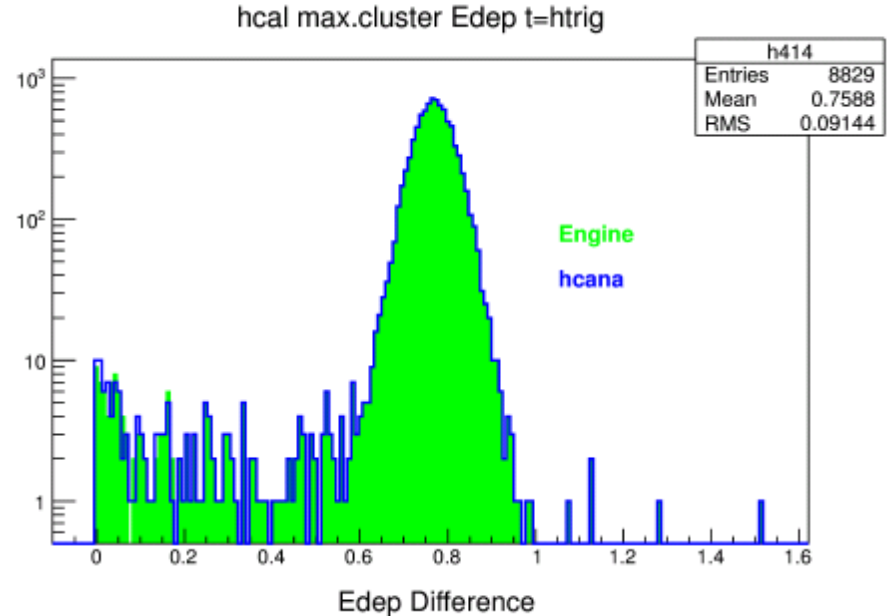
HMS calorimeter

- Code written primarily by Simon Zhamkochyan and Vardan Tadevosyan.
- Basic quantities have good agreement.



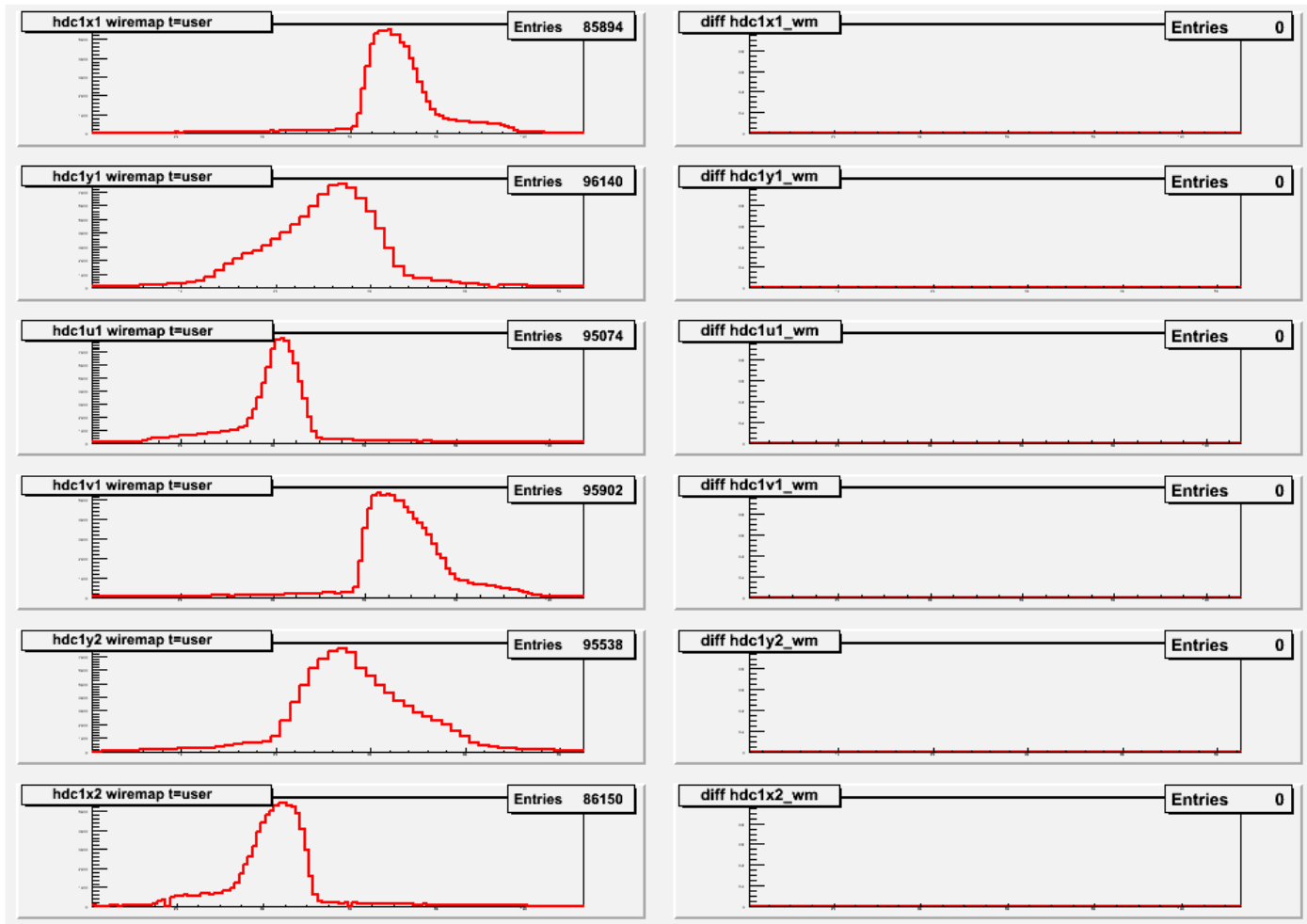
HMS calorimeter

- Code written primarily by Simon Zhamkochyan and Vardan Tadevosyan.
- Basic quantities have good agreement.
- Cluster energy calculation in good agreement.
- See more [comparisons](#)
- Need DC track to go further.



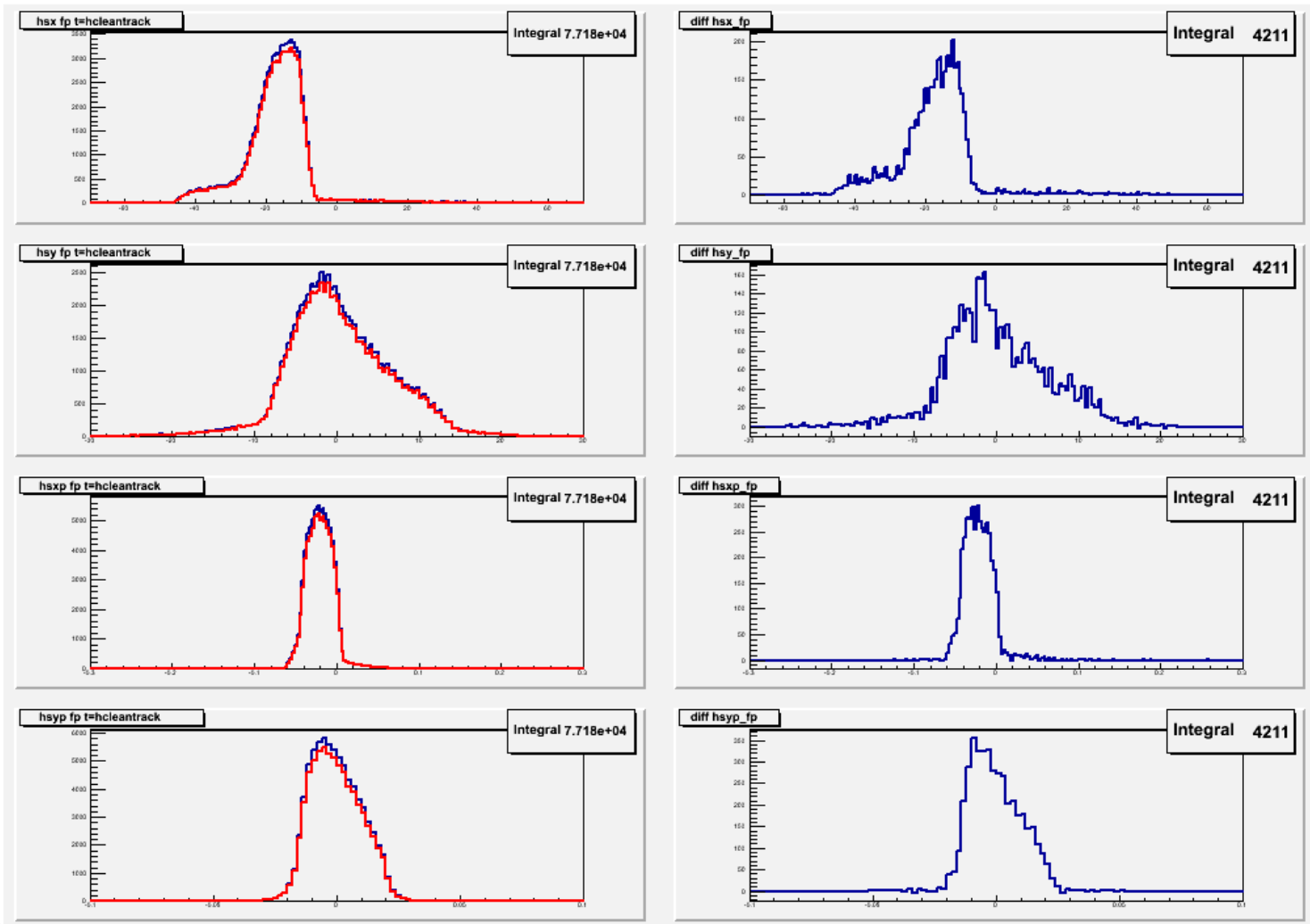
HMS Drift Chambers

- Code written primarily by Steve Wood
- Agreement with basic quantities



HMS Drift Chambers

- **Have Tracks!** Good agreement with shape



Other work

- Ed Brash worked on replacing the Makefile with [SCON](#) as the code builder. Next he will work on updating PODD for EVIO 4.0 .
- Ahmed Zafar, new postdoc at U. of Regina, starting to work on gas Cerenkov.
- Jamil Taylor, student at Hampton, starting to work on drift chambers

- Volunteers needed
 - Documentation
 - Critical comment on coding
 - Testing code

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