

A large, multi-story university building with a green roof and many windows, set against a blue sky with white clouds. The building is the central focus of the image. Three white, rounded rectangular callouts are overlaid on the image, containing text. The background shows a green lawn and some trees in the foreground.

PionLT Software Wishlist

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Overview

- Need a suite of scripts for analysis and calibration for the upcoming run
- What do we need?
- What do we already have?
 - Does this suit our needs?
 - Can we improve/merge anything?
- Are we missing anything?

The Wishlist

- Calibration/Setup
 - Timing windows ?
 - Drift chambers ✓
 - Calorimeters ✓
 - Cherenkovs ✓/?
 - Hodoscopes ✗
 - Can we combine all of the calibrations in one script?
 - Analysis
 - Heep singles ✓/?
 - Heep coin ✓
 - Pion analysis ✓
 - Luminosity scans ✓
 - Deuterium ✗
 - Online summary/report output ✗
 - Online 50k checking script ✗
 - Note, items with a checkmark (✓) may need some adjusting
 - More details on the next few slides
- BPM/BCM*
- Casey Script?*
- Fenchart*
- In Python framework?*
- Readme tins? (in output)*

Calibrations Checklist - Part 1

- Timing windows - These were done but I'm not sure if there was a single script to do them, should try and make one simple, straightforward script to sort this
- Drift chambers - Existing documentation/script
 - Documentation - https://redmine.jlab.org/attachments/download/931/DC_Cal_Calib.pdf
 - Script - https://github.com/JeffersonLab/UTIL_BATCH/blob/develop/Analysis_Scripts/DCCalib_Batch.sh
- Calorimeters - Done but SHMS script had some updates that I didn't get around to checking
 - Documentation - https://redmine.jlab.org/attachments/download/931/DC_Cal_Calib.pdf
 - Script - https://github.com/JeffersonLab/UTIL_BATCH/blob/develop/Analysis_Scripts/CalCalib_Batch.sh

Calibrations Checklist - Part 2

- Cherenkovs
 - HGC done and documented but not batch script, should be easy to incorporate in another calibration script
 - Aerogel done but I don't have the script
 - HMS Cherenkov - Not touched? Need a script
 - HGC documentation - https://hallcweb.jlab.org/DocDB/0010/001098/001/calib_shms_hgc_report_20oct27.pdf
- X* ● Hodoscopes - Used online calibrations, script exists but had issues
 - Script - https://github.com/JeffersonLab/UTIL_BATCH/blob/develop/Analysis_Scripts/HodoCalib_Batch.sh
 - Need to resolve issues and make sure this works

*Needs
most
work*

Calibrations - Updates

- Need to check all existing scripts still work OK
 - Some scripts haven't been touched in a while
- Can we merge some scripts together?
 - Should ideally do as many calibrations as possible from a single replay
 - Some calibrations require replays with specific flags, are these compatible or not?
- Need to merge scripts I don't have into existing repositories (e.g. Aerogel)
 - Also need a quick, single script that can be run for the HGC
- Are we missing any documentation?

Analysis Checklist - Part 1

- For all of these, need **sensible**, working report and summary file as outputs
- Heep singles - Exists but basically untouched since online running
 - Need to check it's up to scratch
 - Existing script does not use python framework
- Heep coin - Same issues as Heep singles script
- Pion analysis - Exists but not explicitly used since online running
 - Needs updating to use latest python framework, UTIL_PION repo is a little behind
 - **Should update and check we can reproduce online results**
- Luminosity scans - Still a work in progress but can utilise scripts Richard is currently working on

Analysis Checklist - Part 2

- Deuterium script - Does not exist
 - This is completely new as we had no deuterium runs previously
 - **Need a version of the pion analysis script to analyse and produce some relevant plots for these runs**
- Online summary/report output - Mentioned previously but very important
 - Need a report file that contains correct and relevant info for each type of run
 - **Need a summary file too that gives the relevant quantities for the run sheet/shift checklist**
- Online 50k script - Already exists but need it in a usable state for us
 - This is generally a case of deleting irrelevant histograms from the 50k script and making sure all of the relevant ones are there
 - **Also need to make sure it uses an up to date report/summary template**

Analysis - Updates

- Need to update scripts in UTIL_PION, not as up to date as UTIL_KAONLT
 - https://github.com/JeffersonLab/UTIL_PION
 - https://github.com/JeffersonLab/UTIL_KAONLT
- Need to update the scripts to match the new python framework
- Incorporate updated report/summary templates too
- ✗ • Need to check documentation is solid and that instructions are clear
- Should also update relevant def files too - don't want huge replay files

tl

Discussion

Homework -

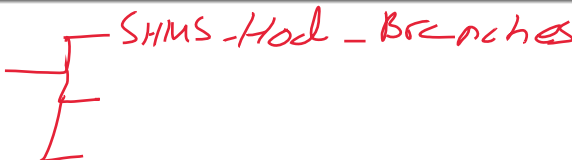
- Check Scripts - UTIL (BATCH)

- Try HGC batch script
- Python demo scripts - UTIL-KAGULT/S

Analysis Scripts
Batch Scripts - Model/Cal/PC

- UTIL-KAGULT

Discussion - Backup

→ Def tile  SHMS - Hod - Branches