

2021.11.30 -- Data Calibration / Reconstruction Meeting

Agenda:

1. [Offline Reconstruction / Calibration Status for the 2021 Run](#) - All
2. AOB

Attendees: Norman, Cameron, Nathan, PF, Robert, Tongtong

Notes: We held a roundtable discussion of items related to calibration of the 2021 data

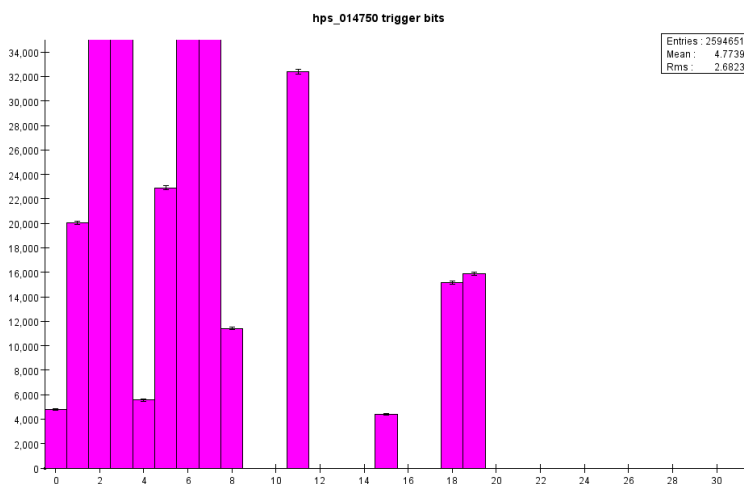
- Cameron mentioned that he and Alic are studying improvements to the SVT waveform fits and strip clustering algorithms. Early results point to an improvement in resolution and an increased number of reconstructed tracks. They will give a formal presentation once more progress has been made.
- Nathan reported no issues for the ECal or Hodoscope and reported that he has run a few tests of Maurik's EVIO trigger skim program. The four output streams corresponding to FEE, Møller, dimuon and randoms add up to roughly 10% of the data. He is waiting on validation of the output and generation of a "good run" list before proceeding with production skimming.
- Robert added some functionality to the Kalman Filter package to allow MattG to conduct his hit efficiency studies.
- PF reported that he will update the SVT [2019 HPS Alignment](#) confluence page in advance of an SVT alignment meeting to be held next week.
- Tongtong reported that the infrastructure for MC generation for 2021 analyses is in place and will give a formal update at either next week's meeting or the week after. He also reminded us that the current 2021 detector descriptions use a field map at the wrong central field value.
- Norman presented the slides in the attached pdf file.

Action Items:

- ☐ Skim the FEE, Møller, di-muon and random triggers
 - ☒ validate test output files at `/volatile/hallb/hps/baltzell/trigtest3`
 - ☒ establish a "not bad run" list for 2021
 - ☒ I selected runs from the HPS run spreadsheet that were labeled as production and had at least 10M events. This gives the 274 runs in this list. (NG)
- ☐ Generate correct field maps for 1.92 and 3.74 GeV and create new detectors as appropriate.
- ☐ Check that the Run2021 branch can be merged with master after incorporating the 2019 survey constants into the compact detector description for the 2019 detector(s). These values had been hard-coded and were removed in the Run2021 branch.

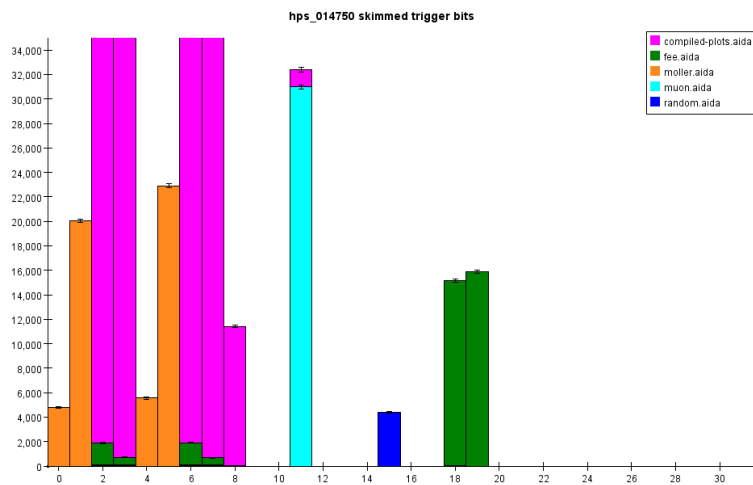
Trigger Skim Validation:

The trigger bits from the 10 raw evio partitions from run 750 at `/cache/hallb/hps/physrun2021/data/hps_014750/` are plotted here:



(note the truncated scale in y)

The trigger bits from the skimmed files available at `/volatile/hallb/hps/baltzell/trigtest3/*014750/` (with * = fee moll muon rndm) overlaid on this plot are shown here:



Note that except for the dimuon triggers, the skimmed data saturates the corresponding trigger bits in the raw data.

The Faraday cup triggers are not included in this 32-bit word, so the triggers for the random stream were analyzed separately. In the following histogram the first entry is all events, the next is pulser triggers and the third is Faraday cup triggers.

