Run 22 FCS QA

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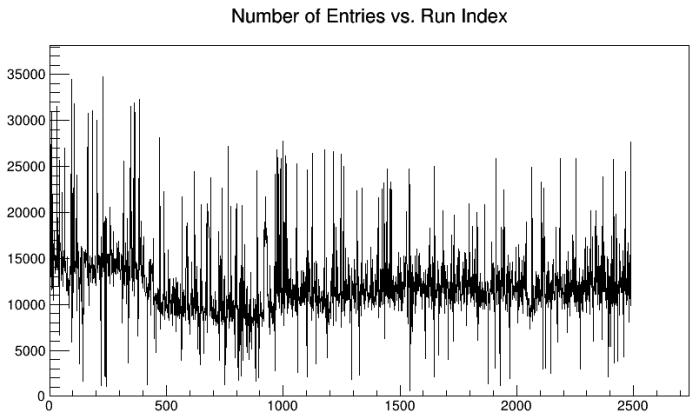
Cold QCD Meeting

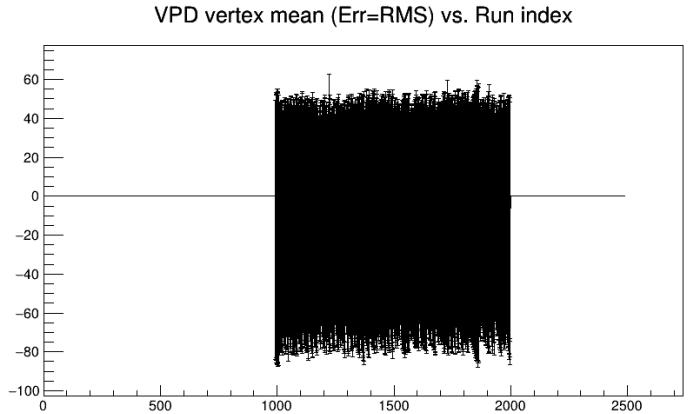
January 15, 2025

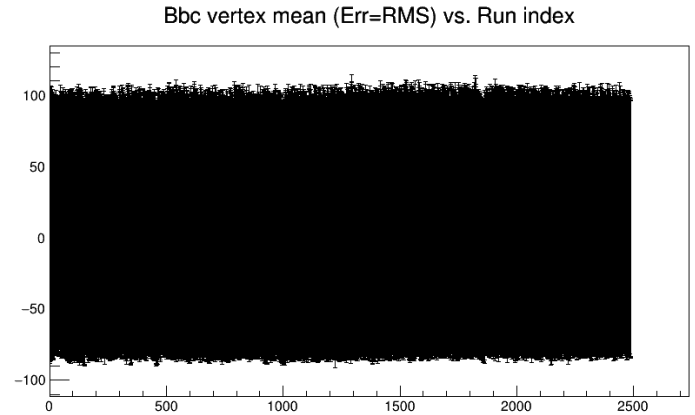
Recap and Outline

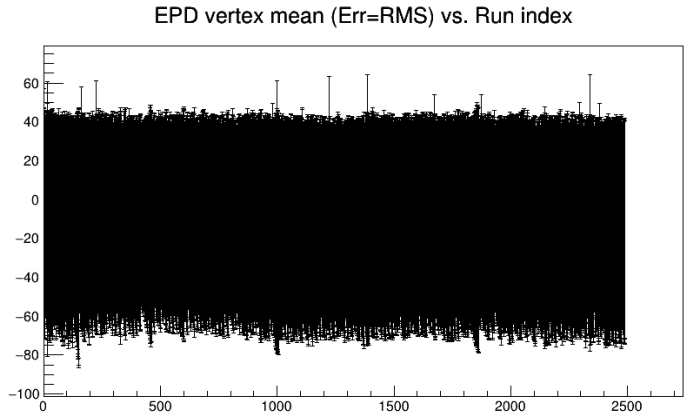
- Looking at Run 22 fwd_stream production
  - Request page: https://drupal.star.bnl.gov/STAR/blog/dkap7827/Run-22-Data-Production-Request
  - Used a file from every single run number greater than 23005043
    - Only runs after and including this run are calibrated
    - When I included runs before this one got bad results
  - Spin database cross check finished
- Last update: Showed invariant mass distributions at different energy and phi bins
- This update: Run QA and looking at TSSA

Entries and Vertex Information





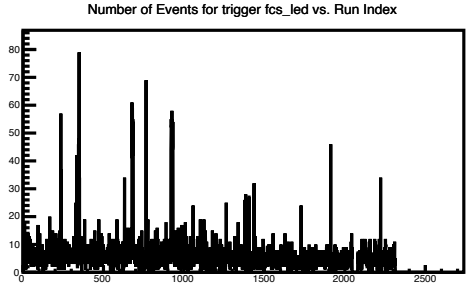


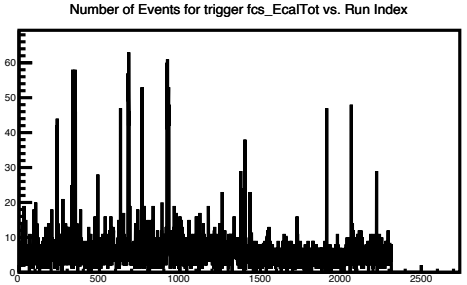


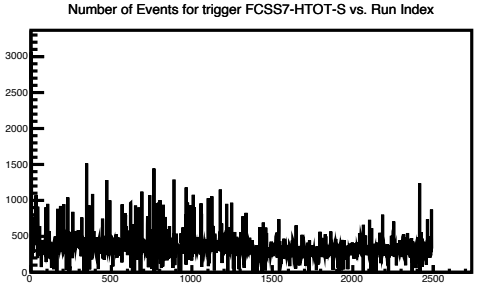
The first few runs is missing VPD because it was not in the production. I don't know why it is missing at the end

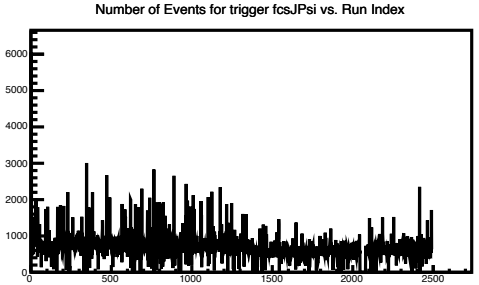
Fairly consistent in terms of entries and vertex over all runs

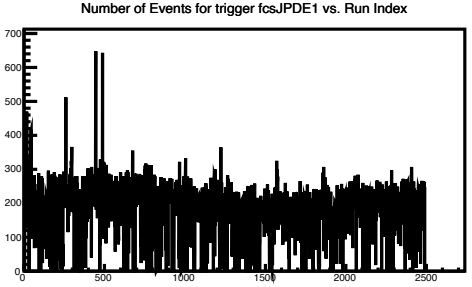
Trigger Plots 1

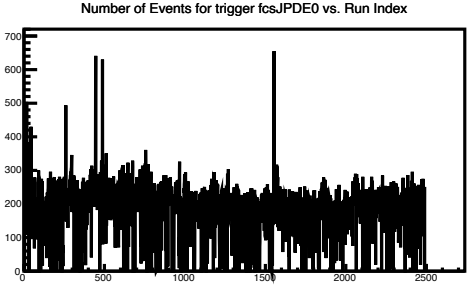


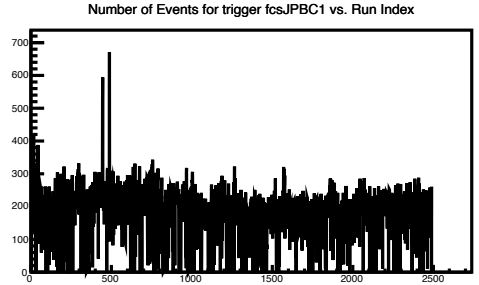


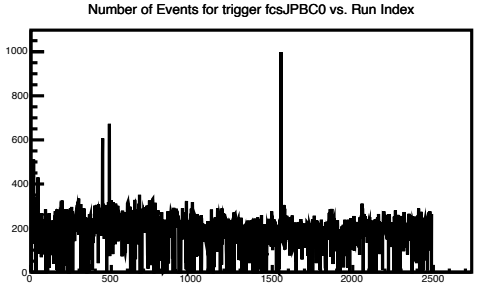


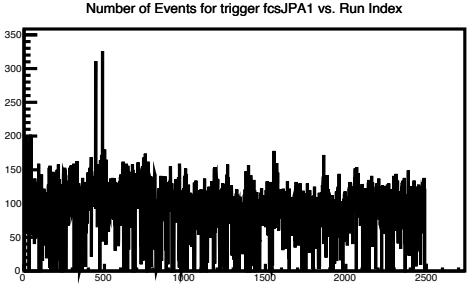


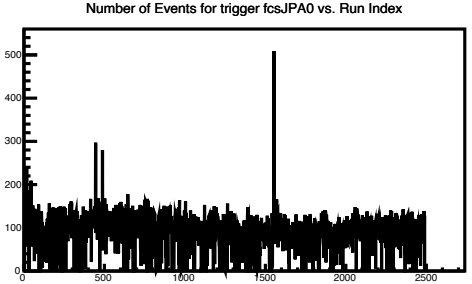


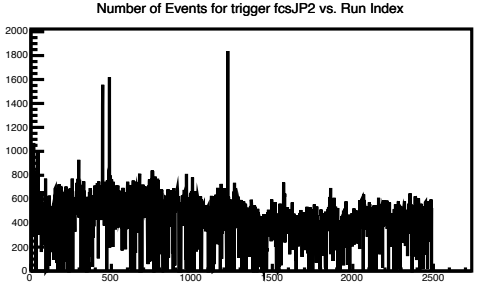


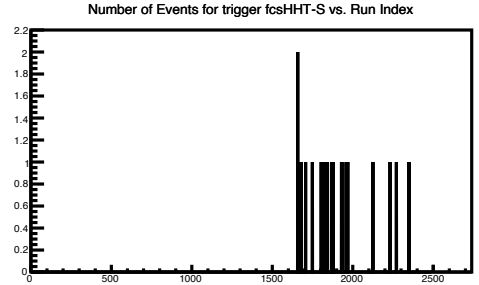


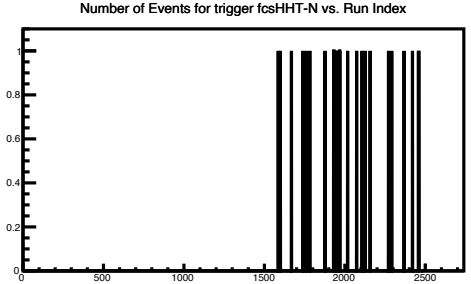


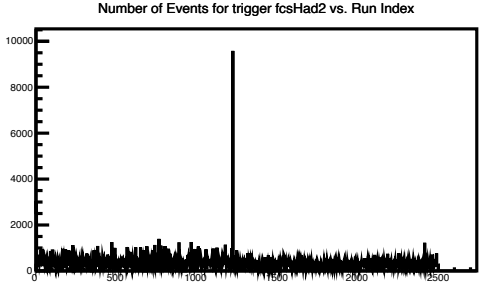


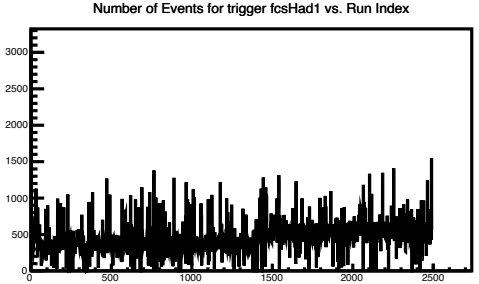


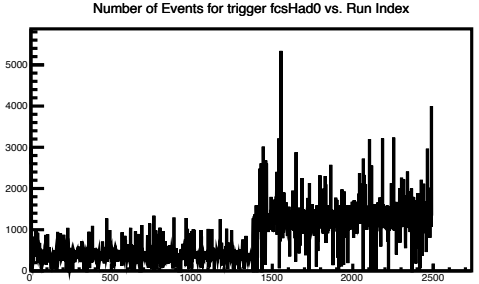




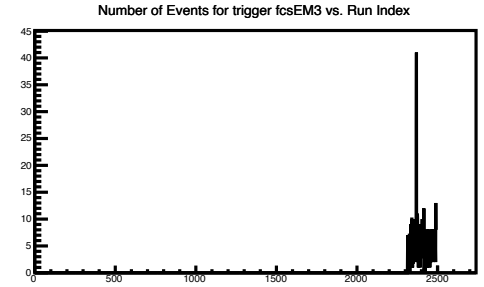


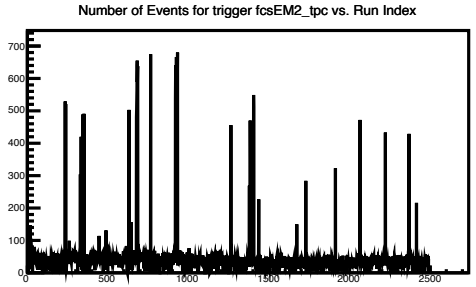


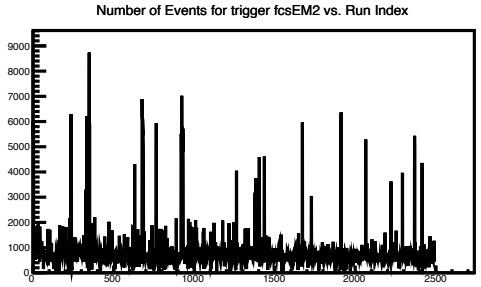


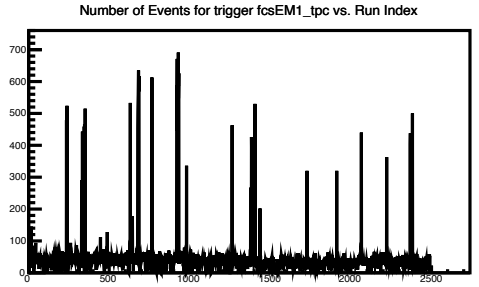


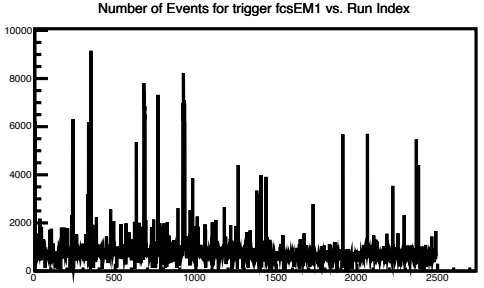
Trigger Plots 2

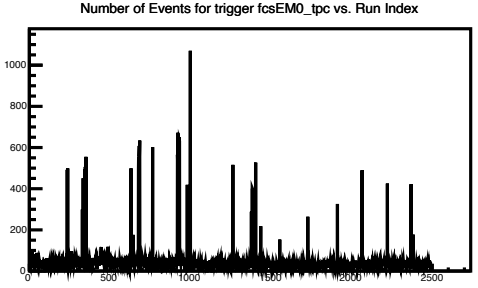


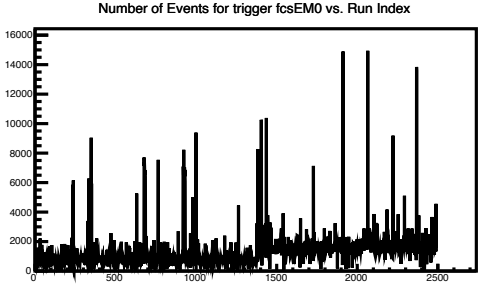


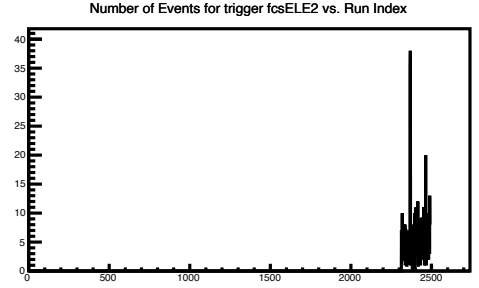


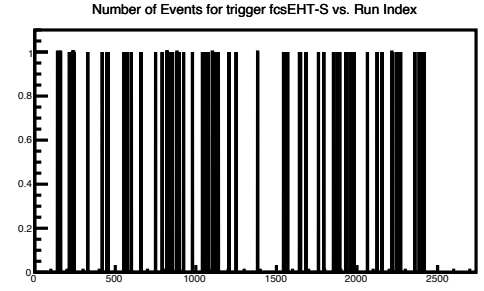


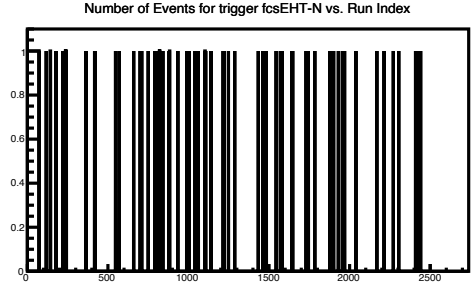


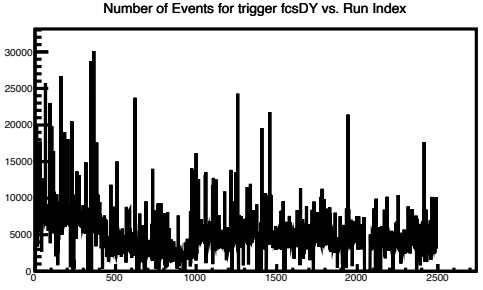


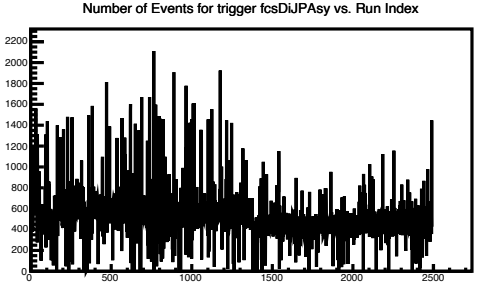


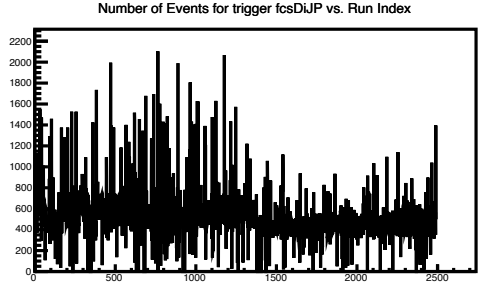


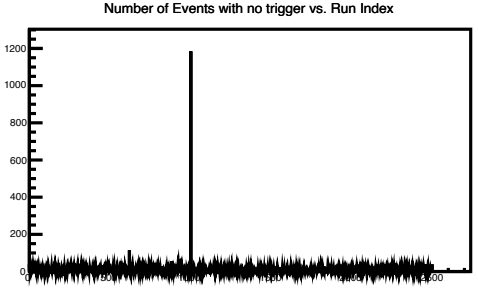












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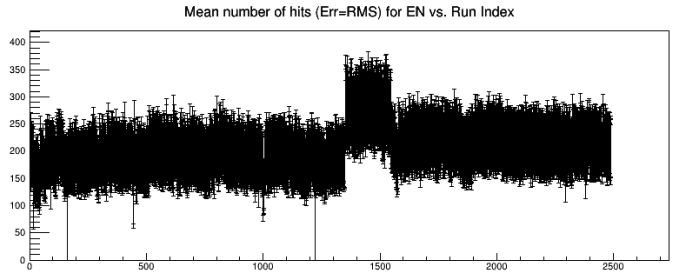
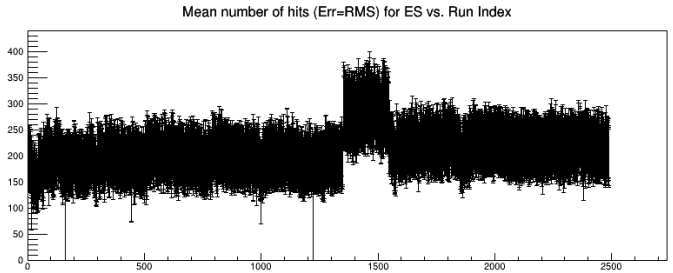
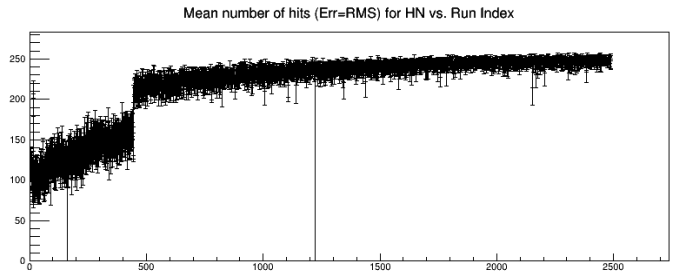
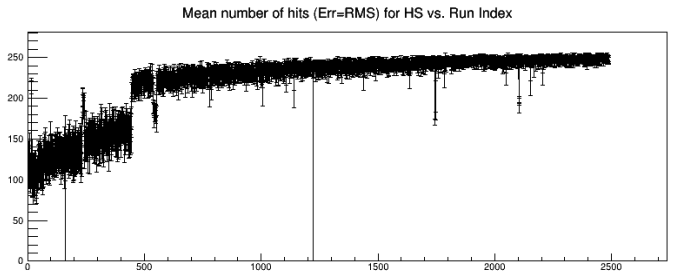
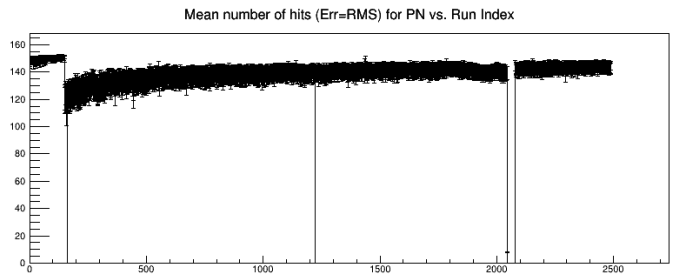
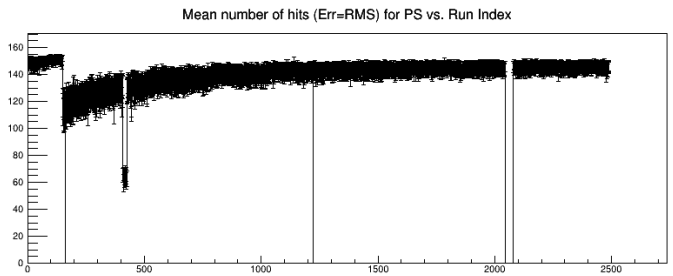




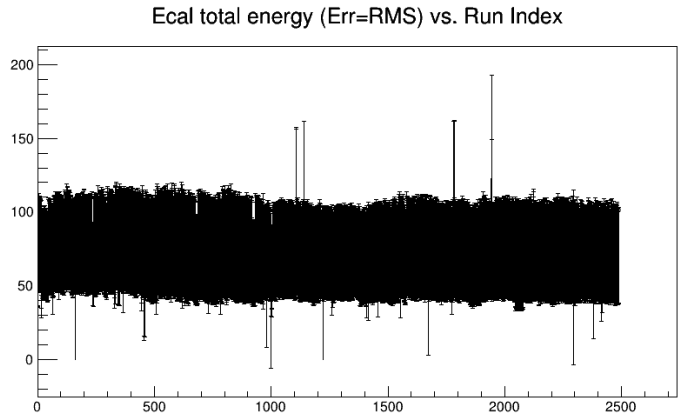


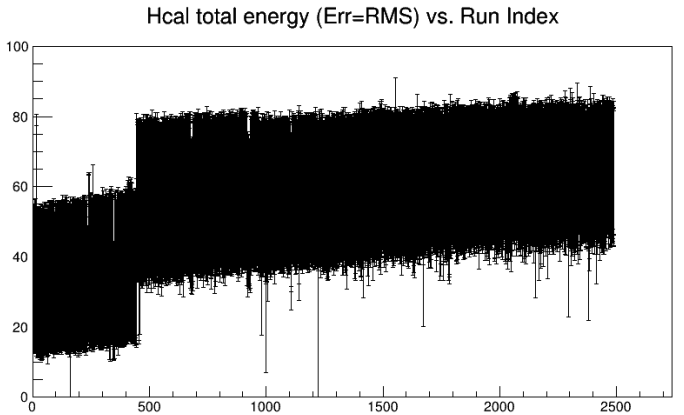


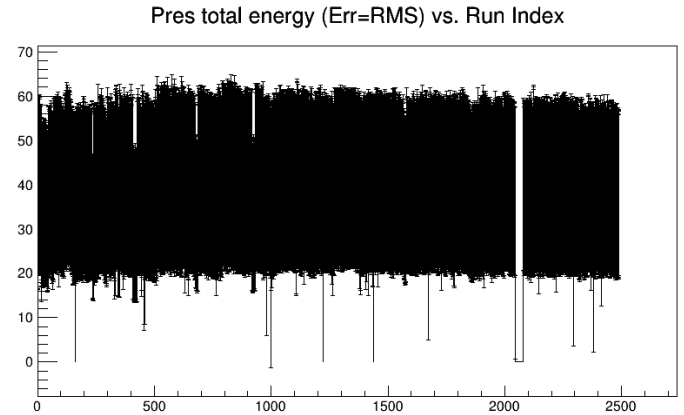




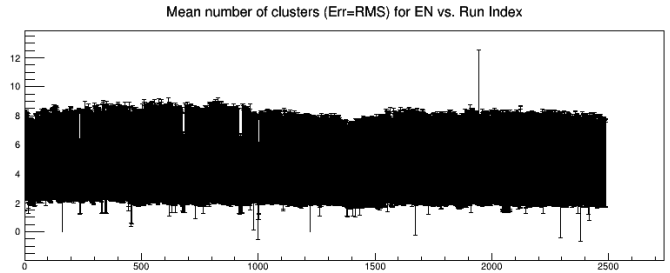
Total Energy in FCS

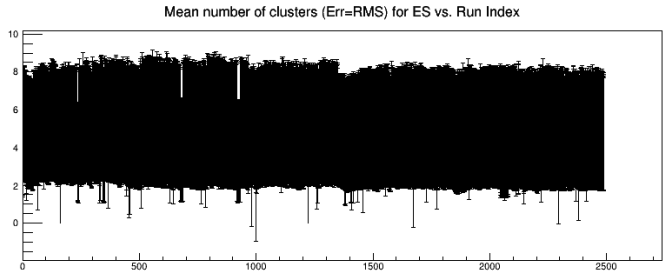


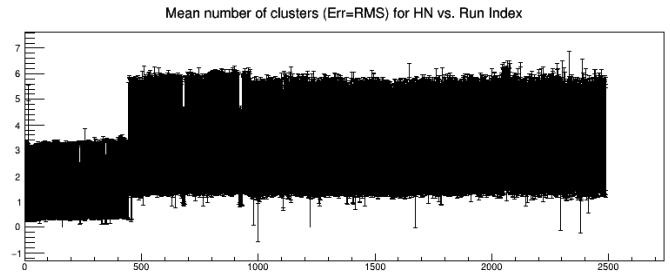


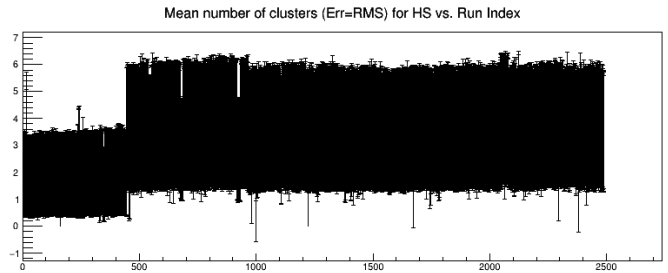


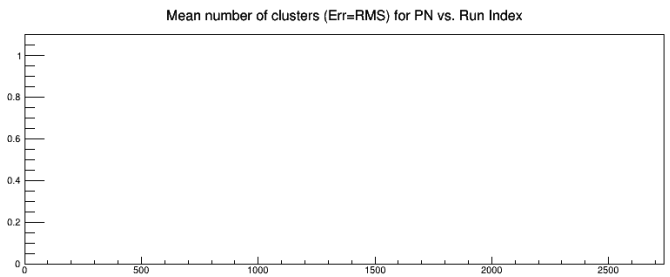
Number of Clusters

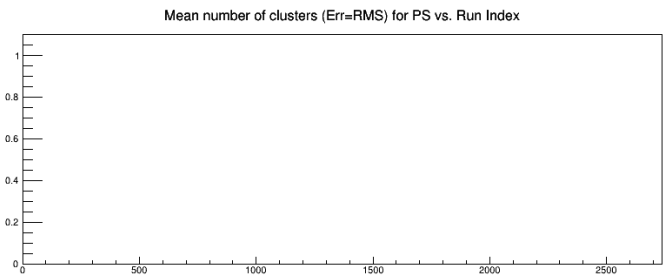




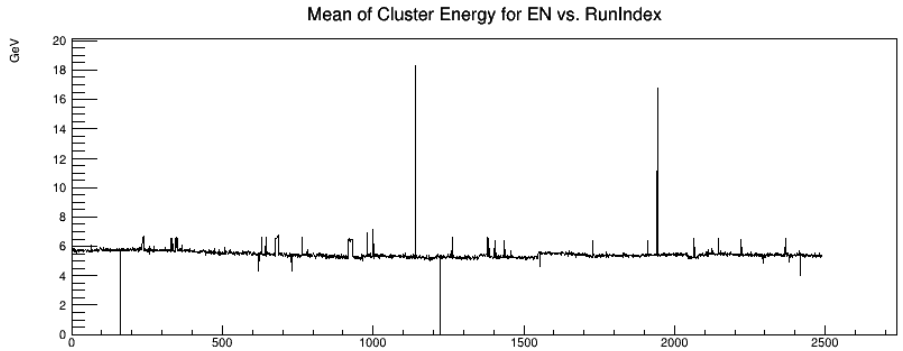


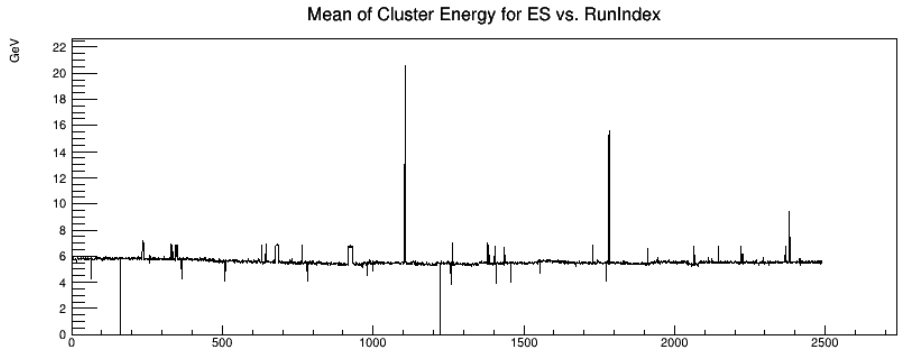


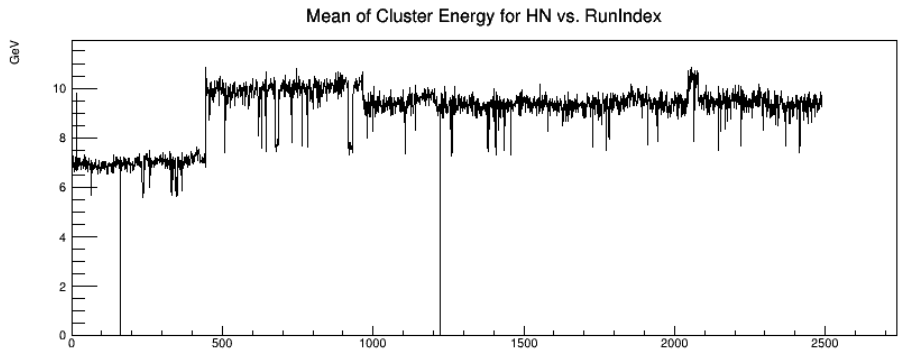


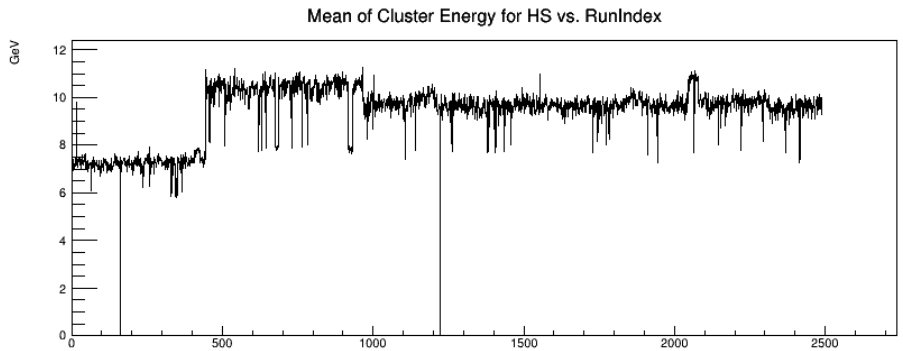


Cluster Energy

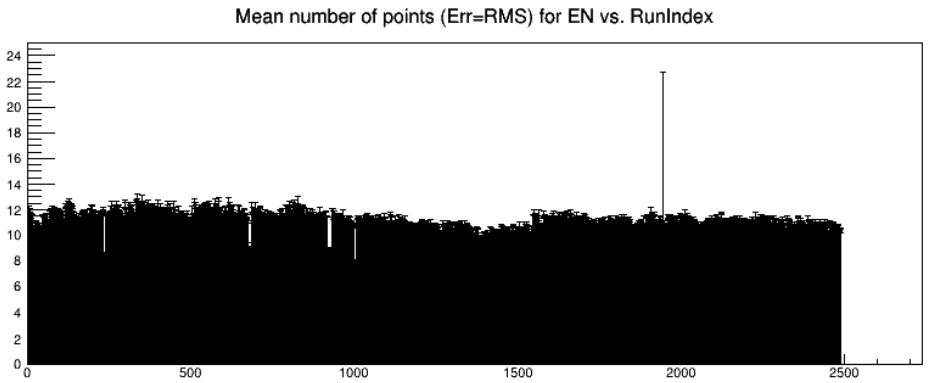


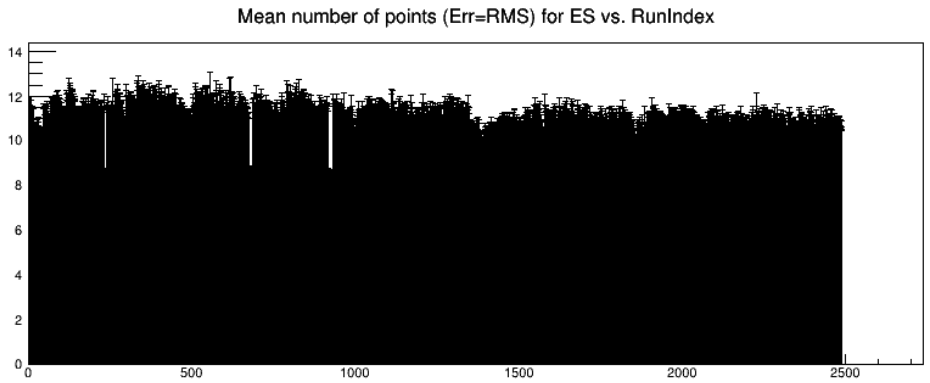




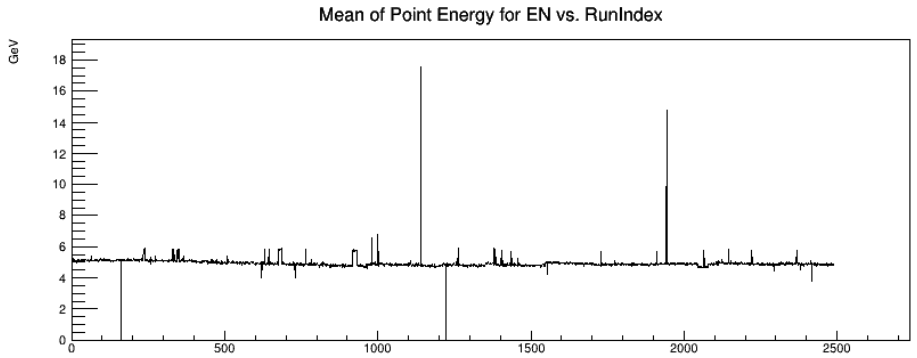


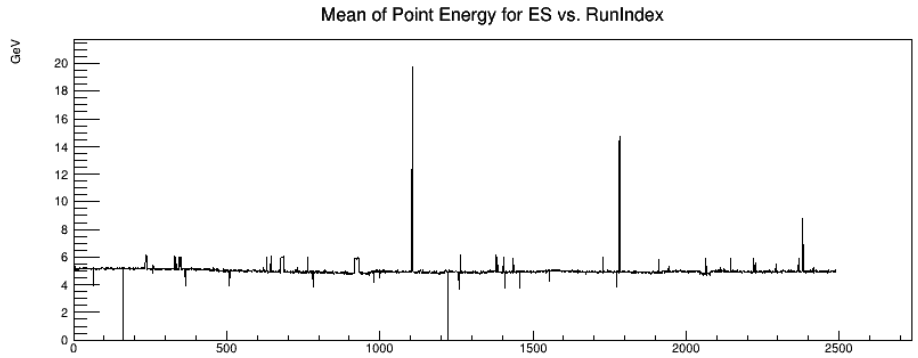
Number of Points



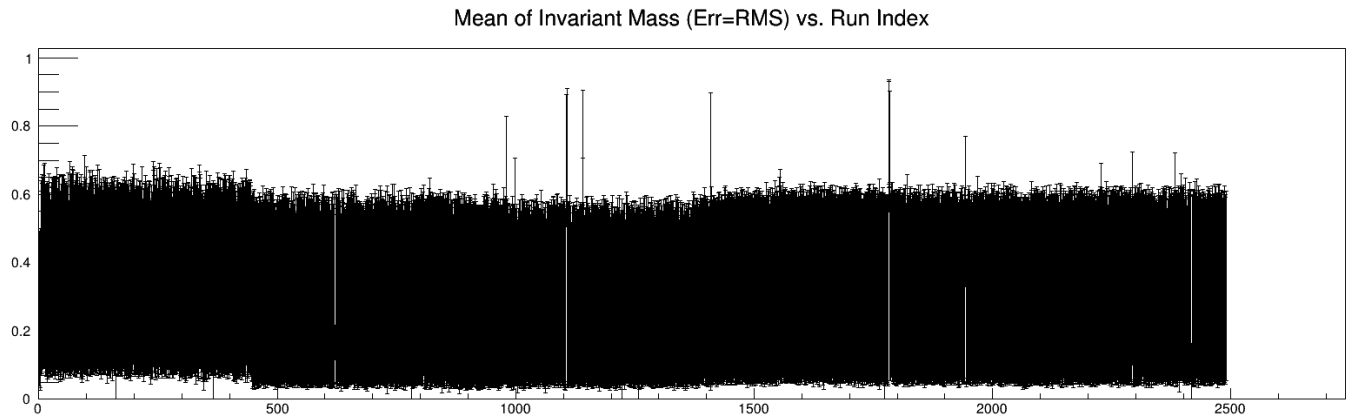


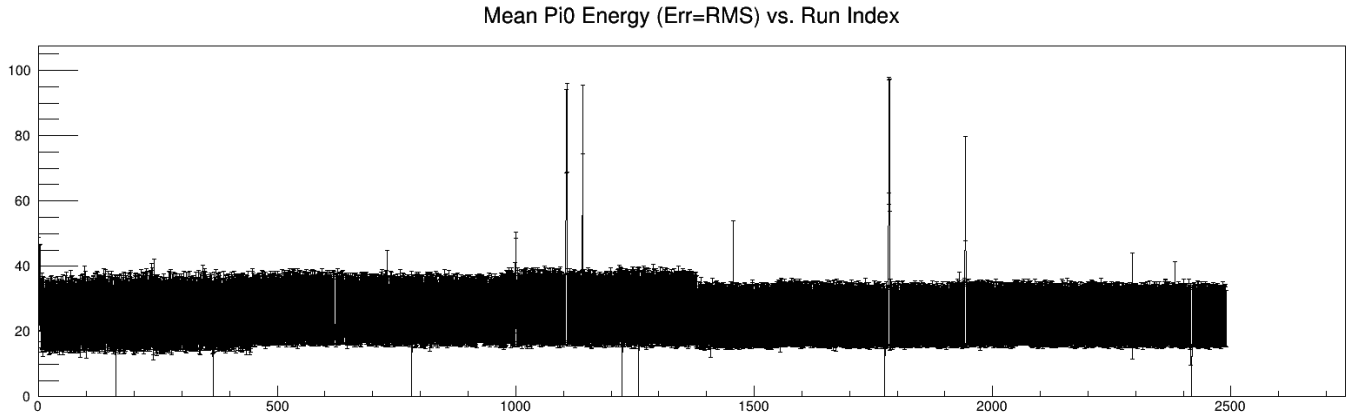
Point Energy





Pi0 Invariant Mass and Energy After Cuts





Conclusions

- Things look good for the most part
  - Data is consistent except for some small kinks where things were changed
  - One or two files seem have large spikes so will be removed
- VPD vertex is missing from some runs
  - Some of this was expected and some of it not was not
- Other QA plots people would like to see
- Next step is to do the A_N calculation and process a larger dataset