

# MC Needs and Plan

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# 2019 MC

- Pass0 samples:
  - Detector: HPS-PhysicsRun2019-v2-4pt5
  - Information: <https://confluence.slac.stanford.edu/display/hpsg/2019+MC+Samples>
- Needs for next pass:
  - Parameters for beam rotation and target offsetting
  - Update detector with update of alignment

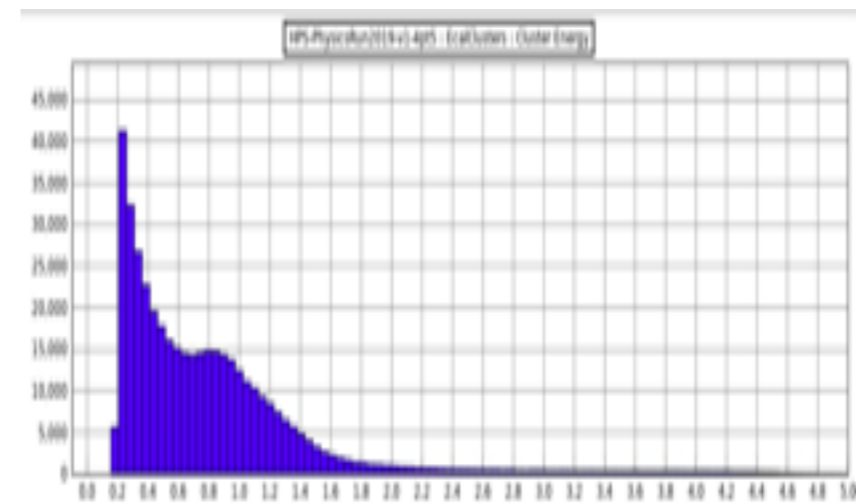
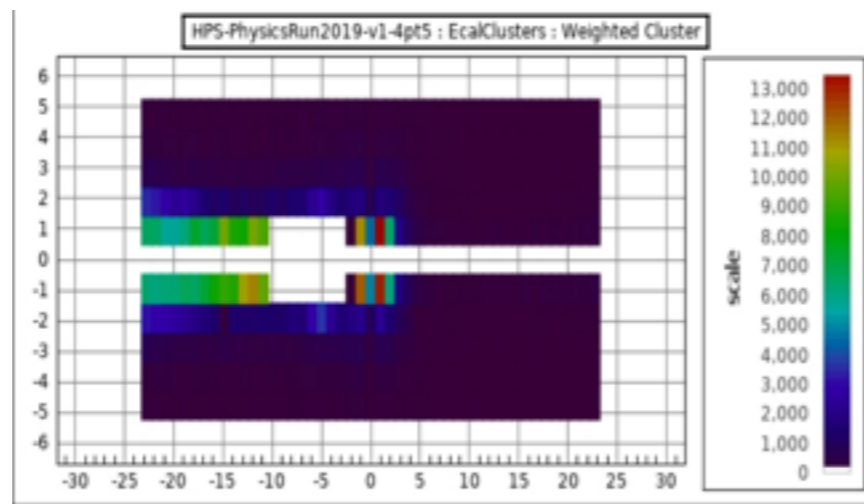
# 2021 MC

- Samples were produced for trigger tuning of 2021 experiment: <https://confluence.slac.stanford.edu/display/hpsg/Future+experiments>
- With recent updates for hps-java, MC softwares have been ready for 2021 MC production.
- Alignment of calibration is ongoing.
- Single lepton for Ecal calibration.

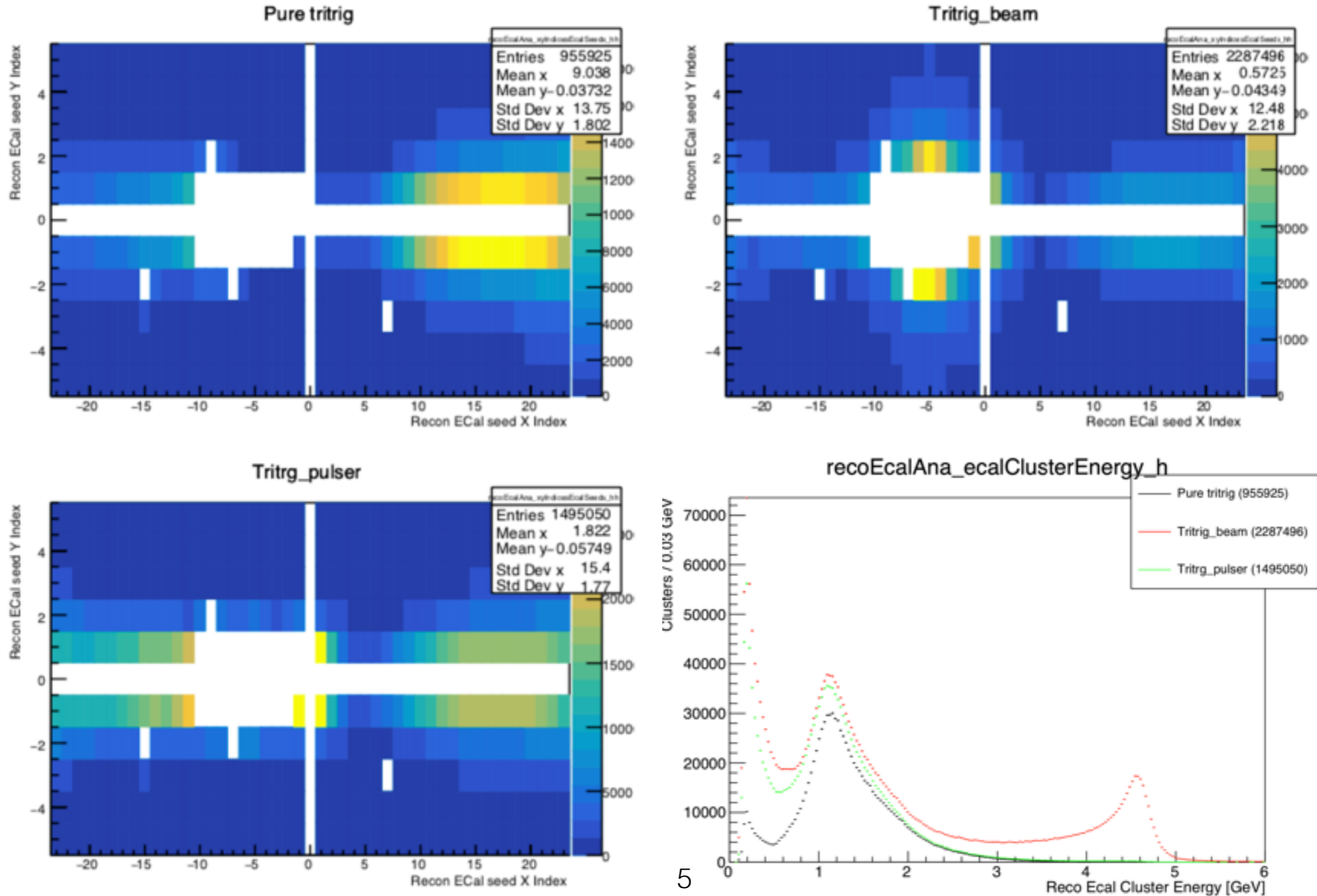
# Background overlay with pulser Data

- Related codes were developed and updated in hps-java.
- Three samples were produced for tests.
  - Pure tritrig
  - Tritrig + MC beam
  - Tritrig + pulser data (run 10646)

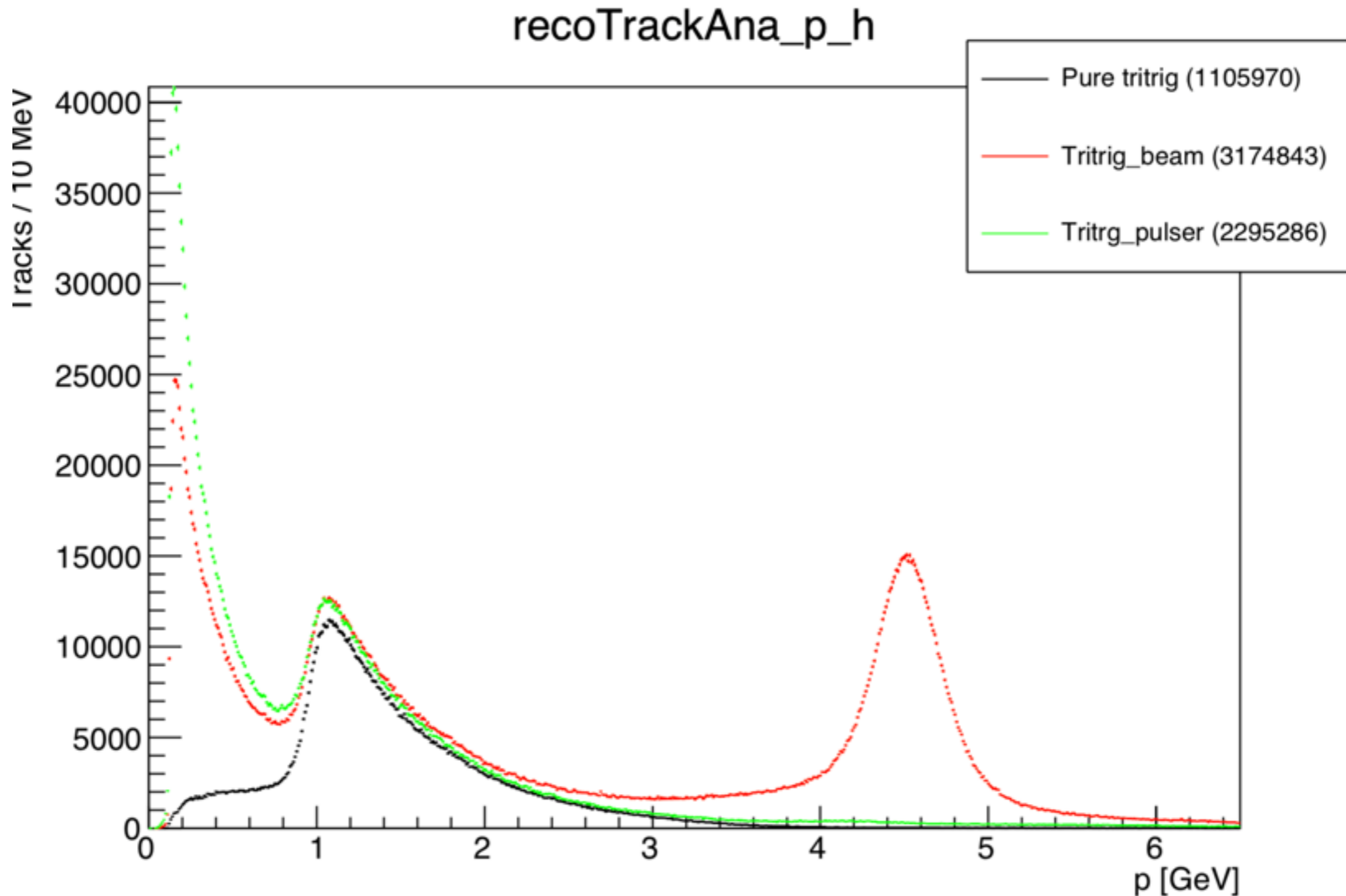
Ecal clusters from DQM plots for run 10646



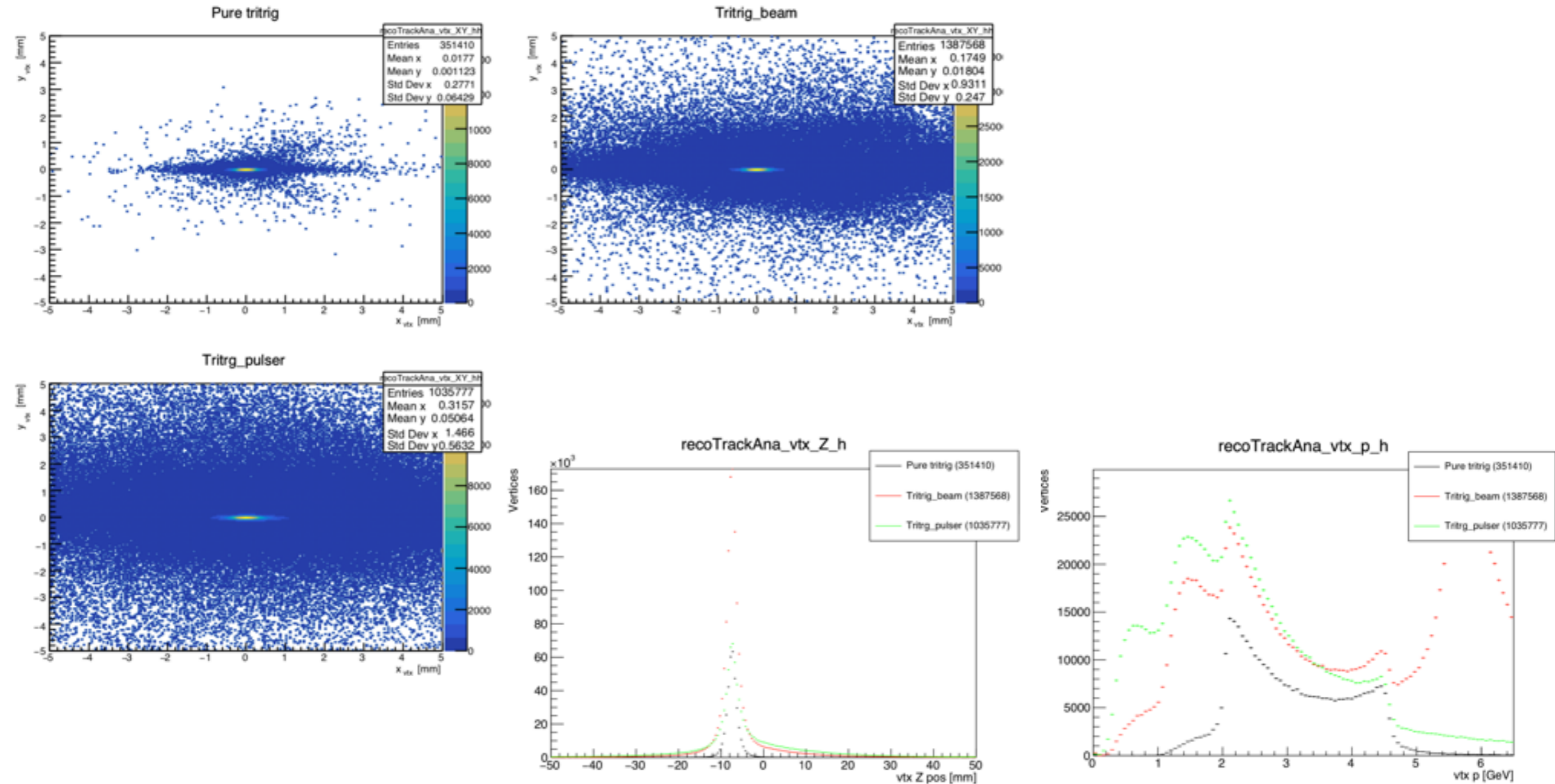
# Comparison for ECal Clusters



# Comparison of Tracks



# Comparison of Vertices



# Others

- Beginning on March 1st, 2022, the Auger and swif1 commands will no longer be available for JLab batch machines. They have been superseded by the Slurm workload manager and by swif2. Scripts by Auger need to be replaced by Slurm or swif2. Jeremey is working on job system of hps-mc to develop swif2 mode.
- Recently, it was found that drivers for Hodoscope reconstruction in hps-java did not work with input from the MC readout system. The main reason is that cell ids of Hodo. channels from MC readout are geometry ids, while they are detector system ids for real data.
- Application of OSG
- MC biasing by Omar