

# HPS-Sim at JLab

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# Hps-sim

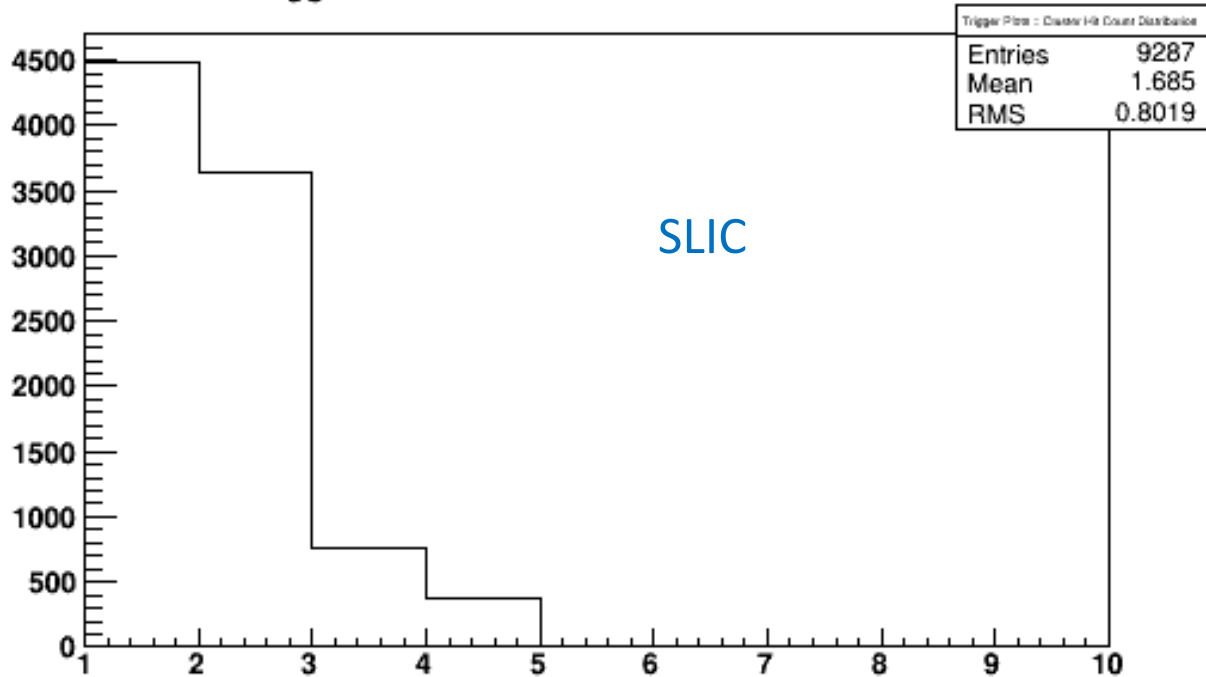
- A new macro-based framework to replace SLIC (thanks to Jeremy)
  - It handles both lhe and stdhep events, so they don't need to be converted
  - The code can be more easily modified by HPS members
- Hps-sim has the ability to do all the BG mixing/rotations/sampling without relying on stdhep tools
  - Things like y-rotations, still need to be added
  - It can also generate wab conversions more efficiently (the main point of it!)
- Tritrig events have already been tested, found to be consistent with SLIC
- I'm now setting up JLab scripts and checking wab-beam-tri

# Some things I've noticed

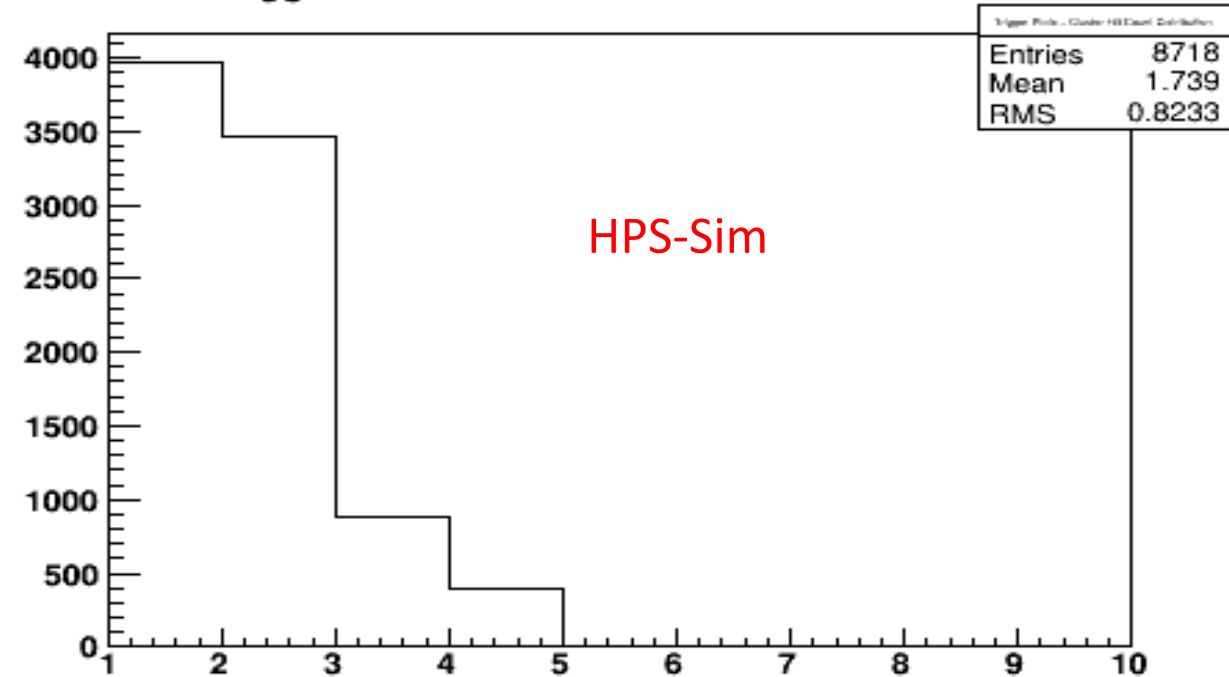
- Hps-sim appears much slower than SLIC for certain events
  - 500k wab-beam-tri events take days to generate, as opposed to hours
  - This is only for mixed events, simple lhe events are faster
- I am still debugging the job submission script, and some recon
  - SVTTrueHitRelations were not being filled for some reason (separate problem)
  - DSTs/tuples were unable to be made, looking into it
- I ran 500k WBT events interactively with both SLIC and hps-sim, and checked the trigger plots

# Cluster hit count

Trigger Plots :: Cluster Hit Count Distribution

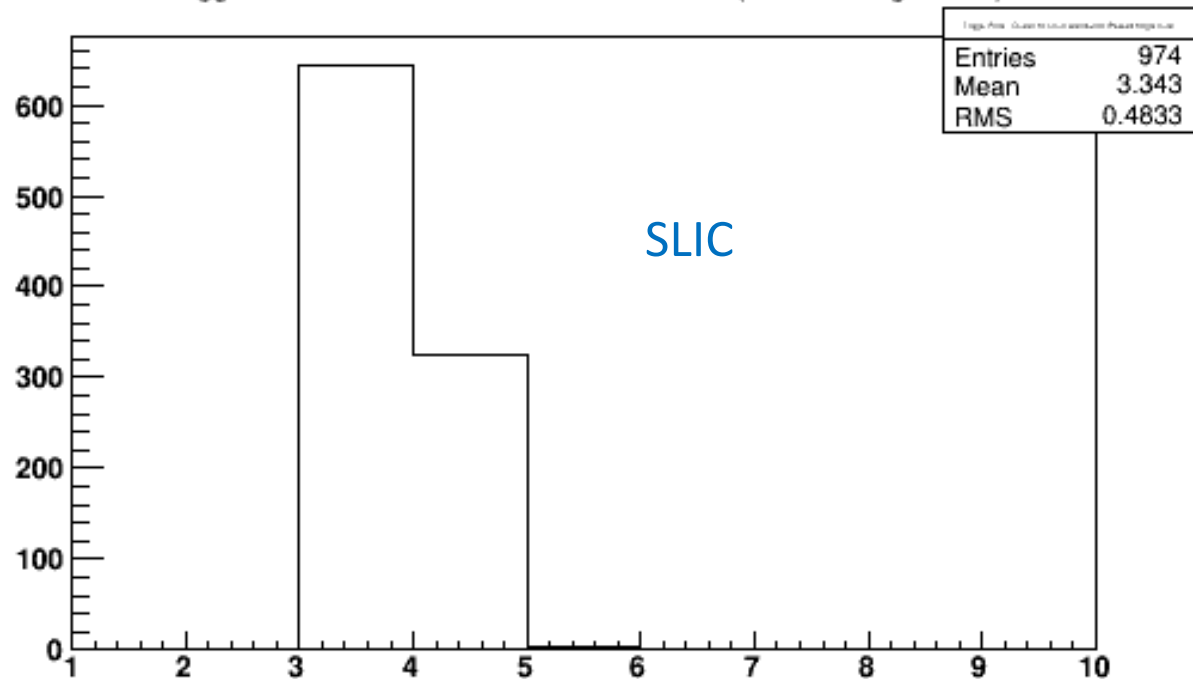


Trigger Plots :: Cluster Hit Count Distribution

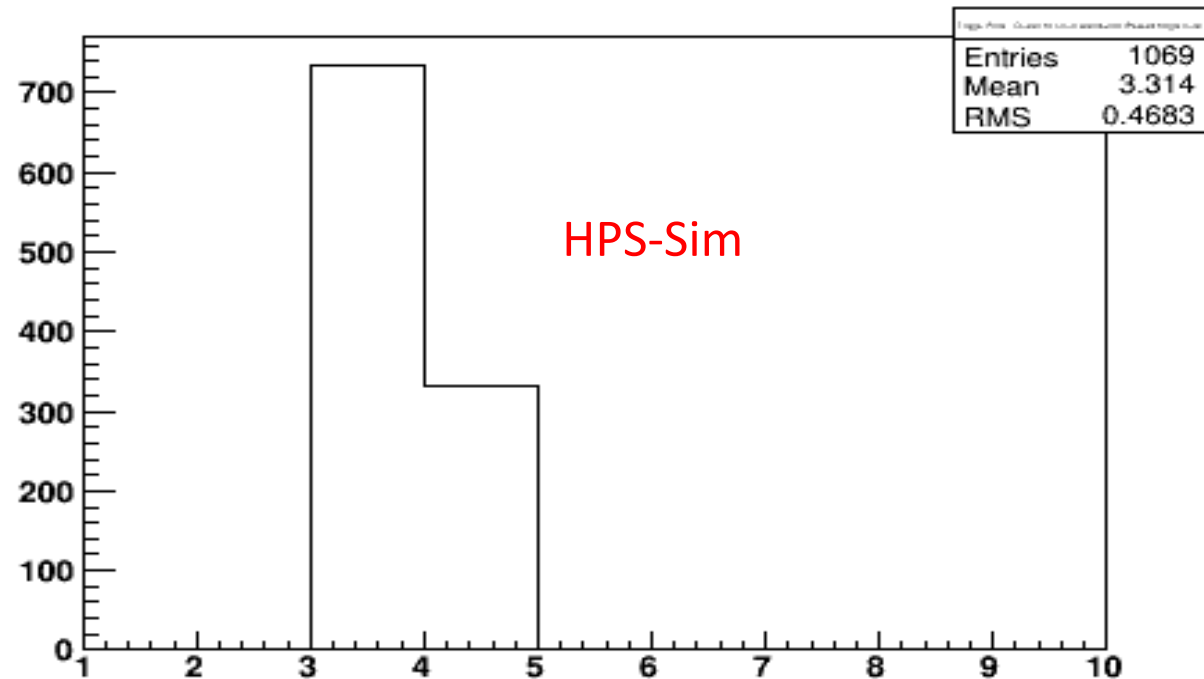


# Cluster hit count (singles1)

Trigger Plots :: Cluster Hit Count Distribution (Passed Single Cuts)

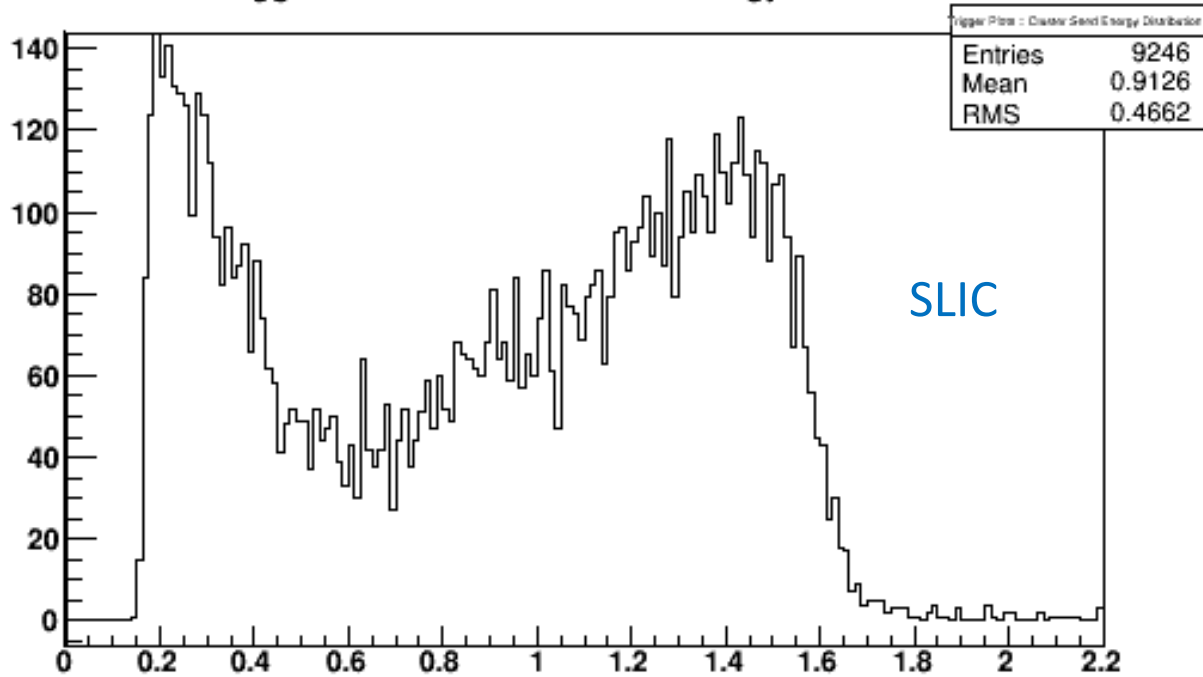


Trigger Plots :: Cluster Hit Count Distribution (Passed Single Cuts)

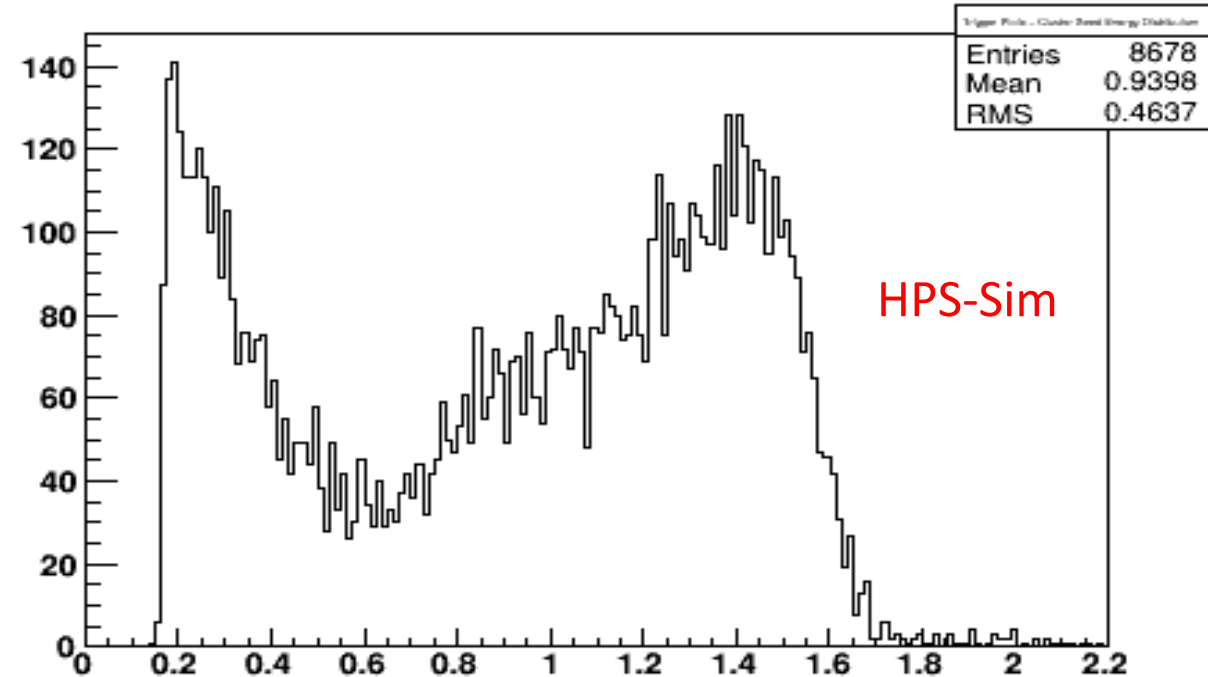


# Seed Energy

Trigger Plots :: Cluster Seed Energy Distribution

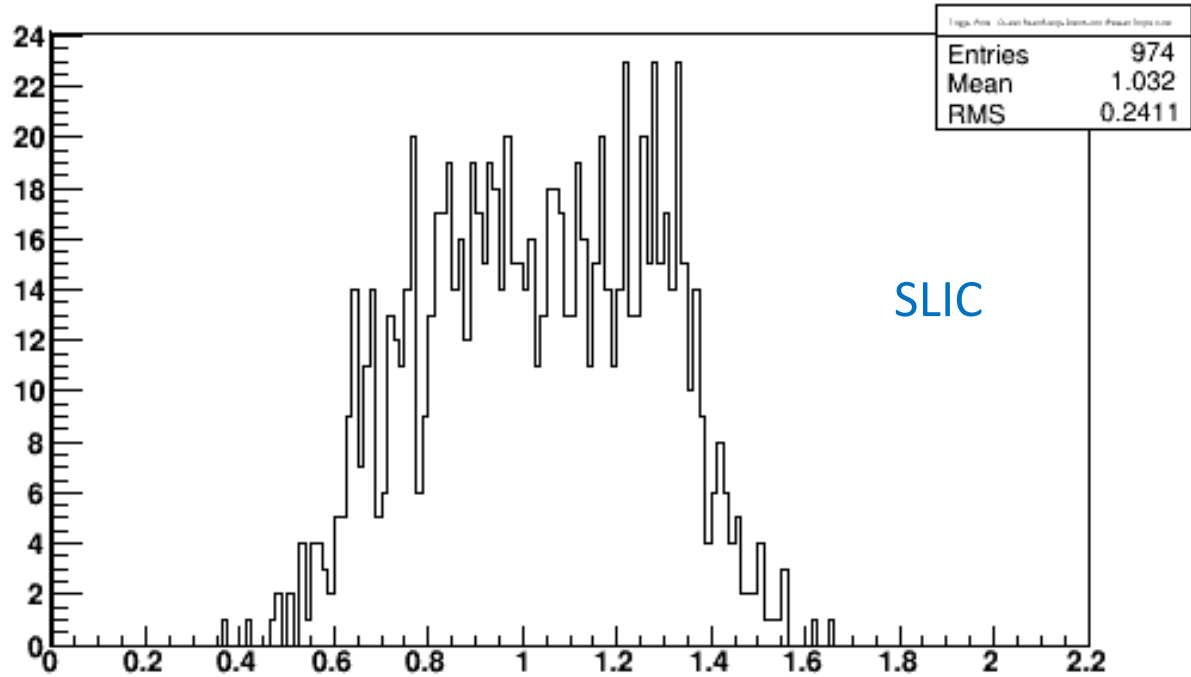


Trigger Plots :: Cluster Seed Energy Distribution

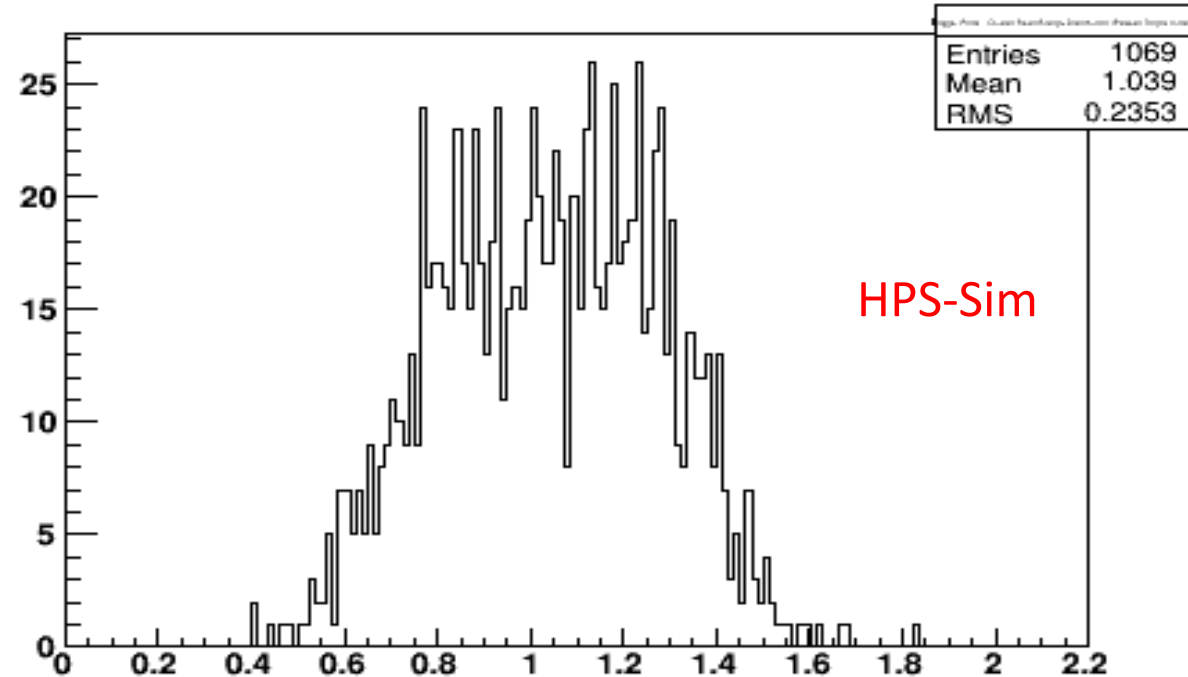


# Seed Energy (singles1)

Trigger Plots :: Cluster Seed Energy Distribution (Passed Single Cuts)

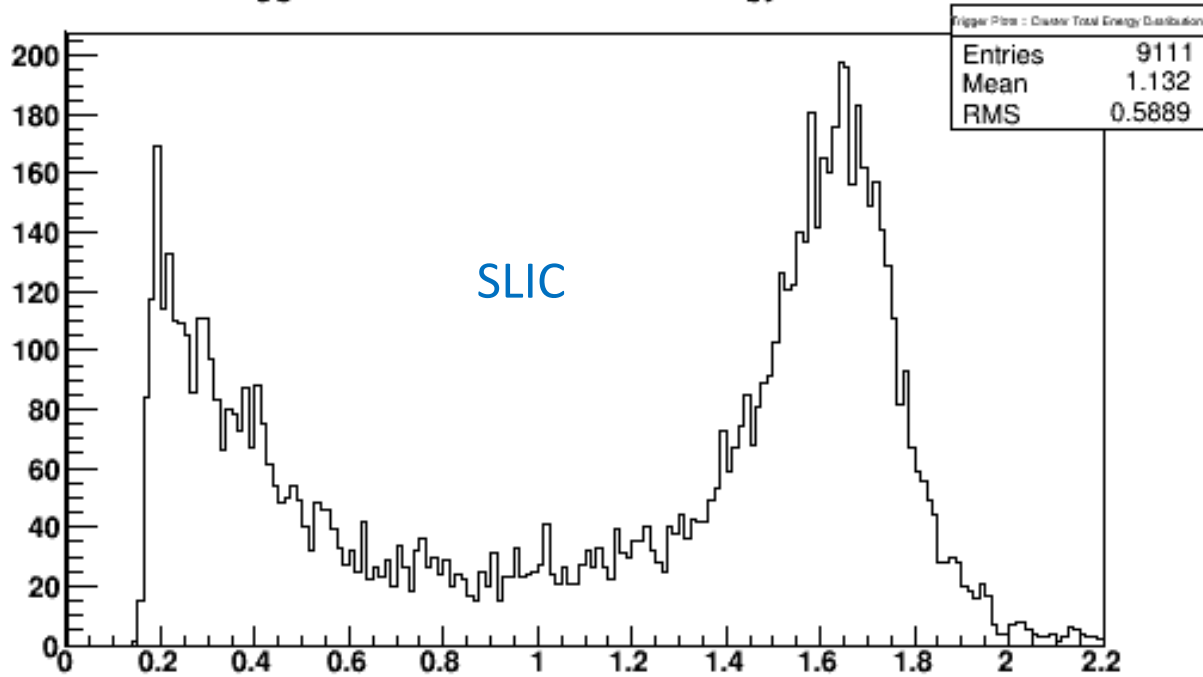


Trigger Plots :: Cluster Seed Energy Distribution (Passed Single Cuts)

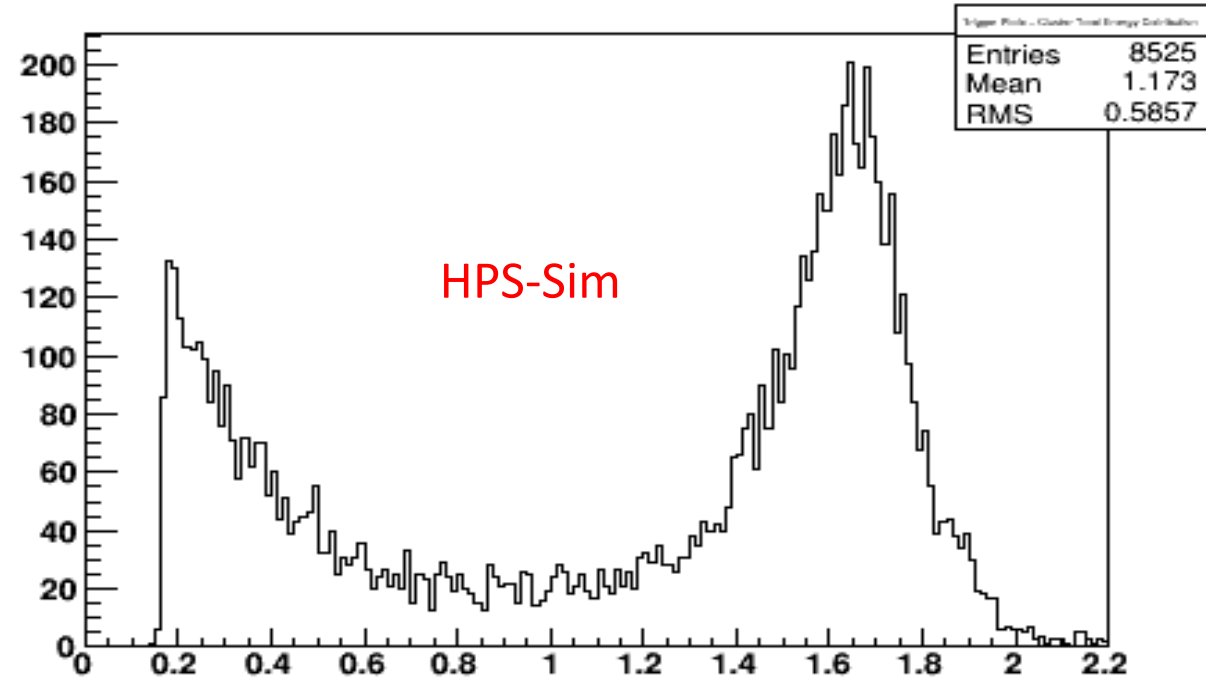


# Cluster Energy

Trigger Plots :: Cluster Total Energy Distribution



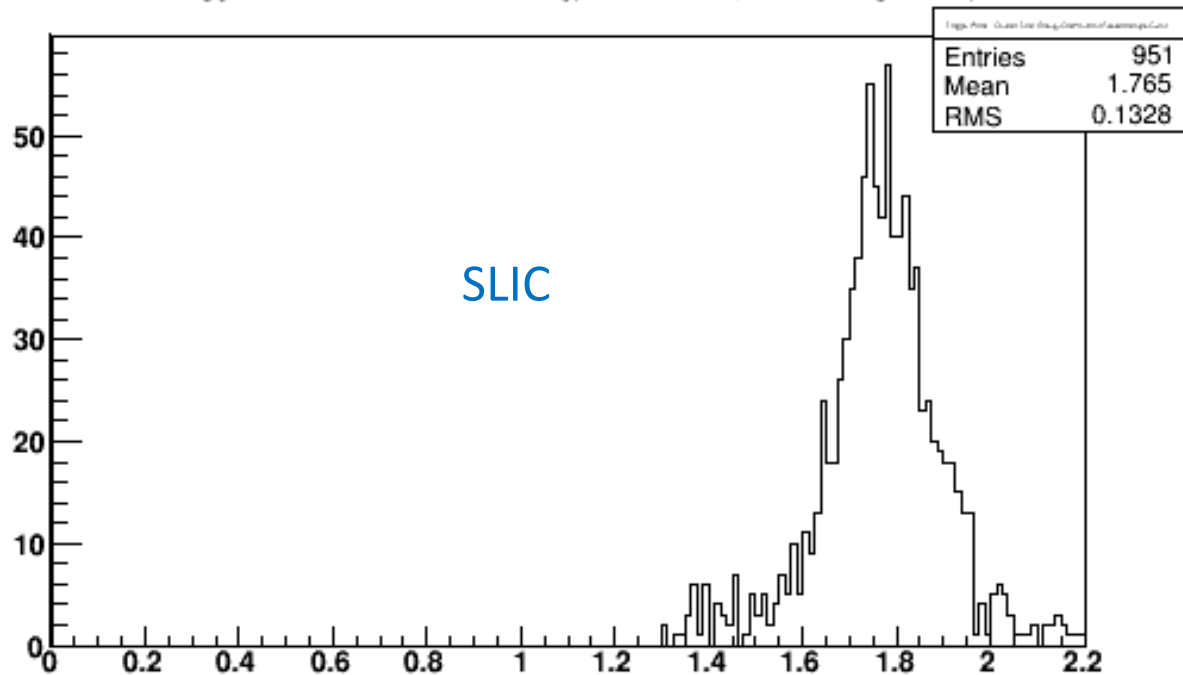
Trigger Plots :: Cluster Total Energy Distribution



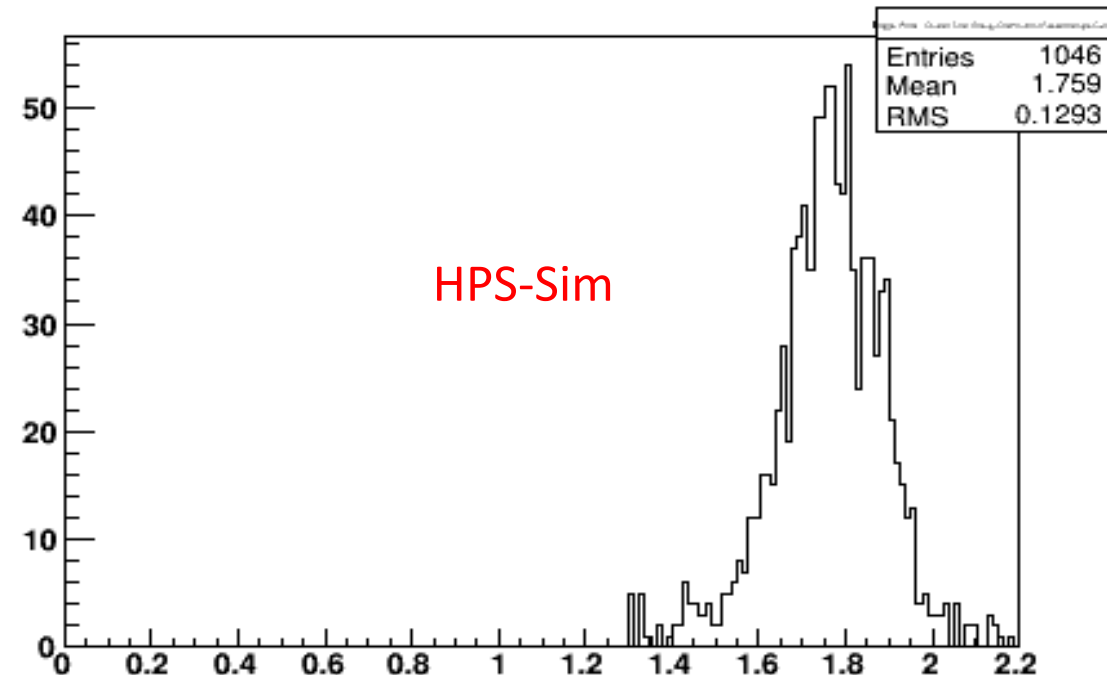


# Cluster Energy (singles1)

Trigger Plots :: Cluster Total Energy Distribution (Passed Single Cuts)

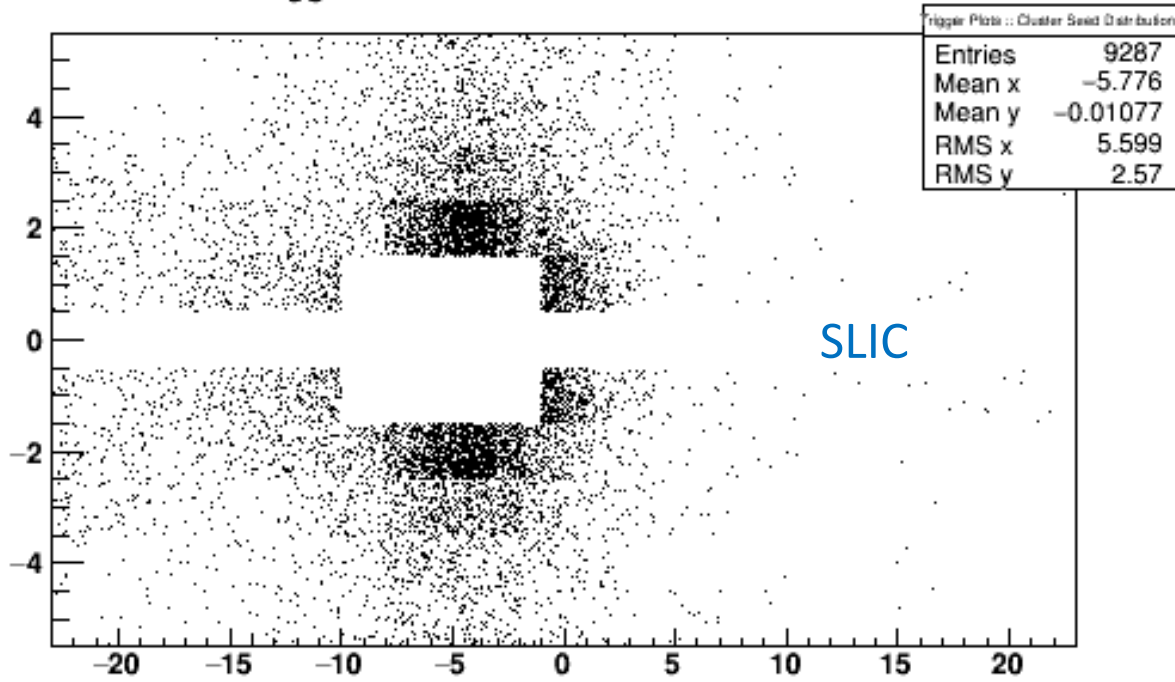


Trigger Plots :: Cluster Total Energy Distribution (Passed Single Cuts)

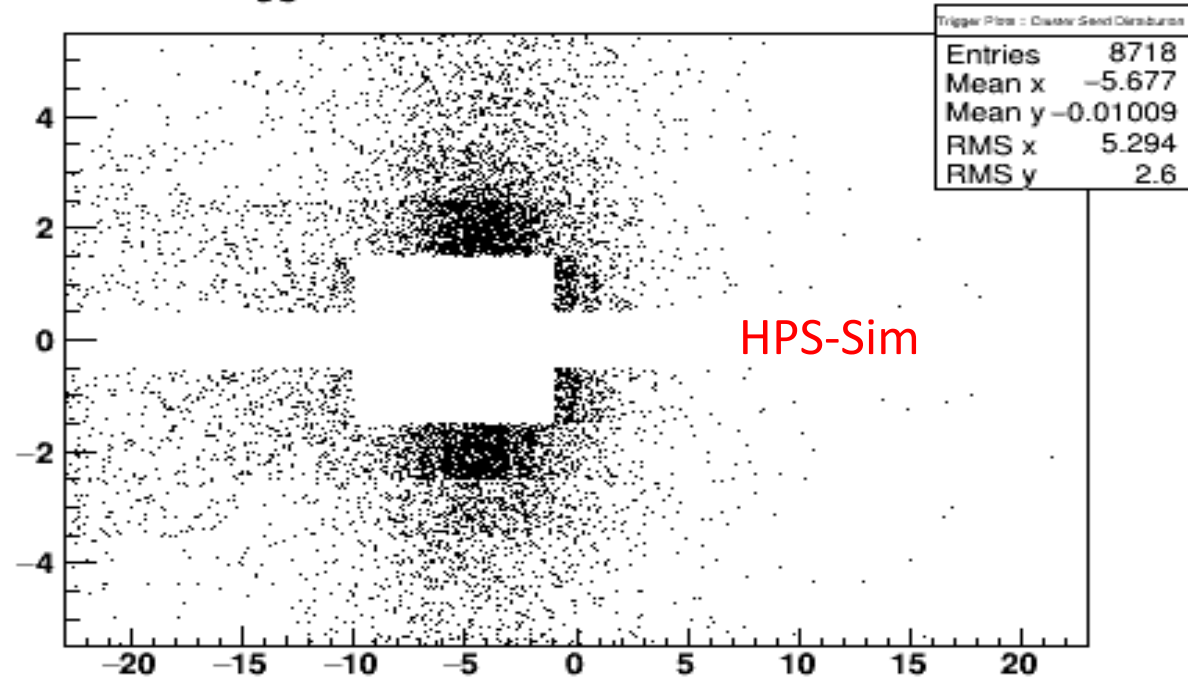


# Seed Hits

Trigger Plots :: Cluster Seed Distribution

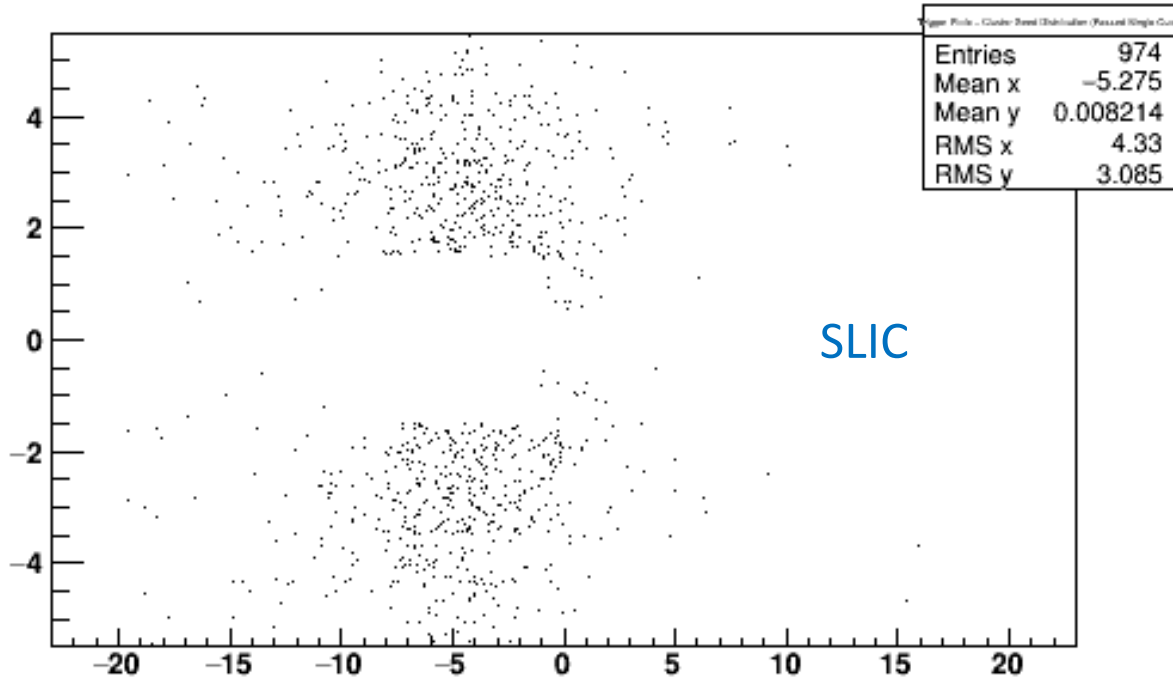


Trigger Plots :: Cluster Seed Distribution



# Seed Hits (singles1)

Trigger Plots :: Cluster Seed Distribution (Passed Single Cuts)



Trigger Plots :: Cluster Seed Distribution (Passed Single Cuts)

