# bggen analysis with EM background

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Data Challenge2 Meeting
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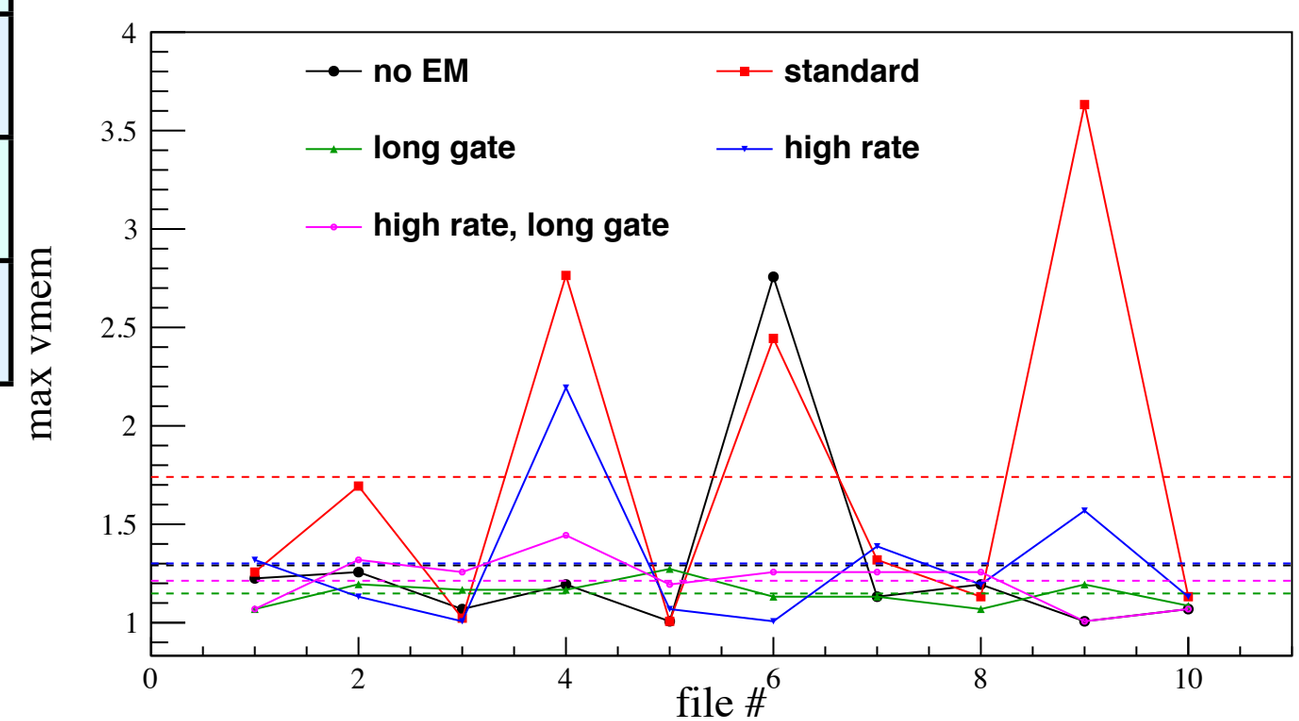
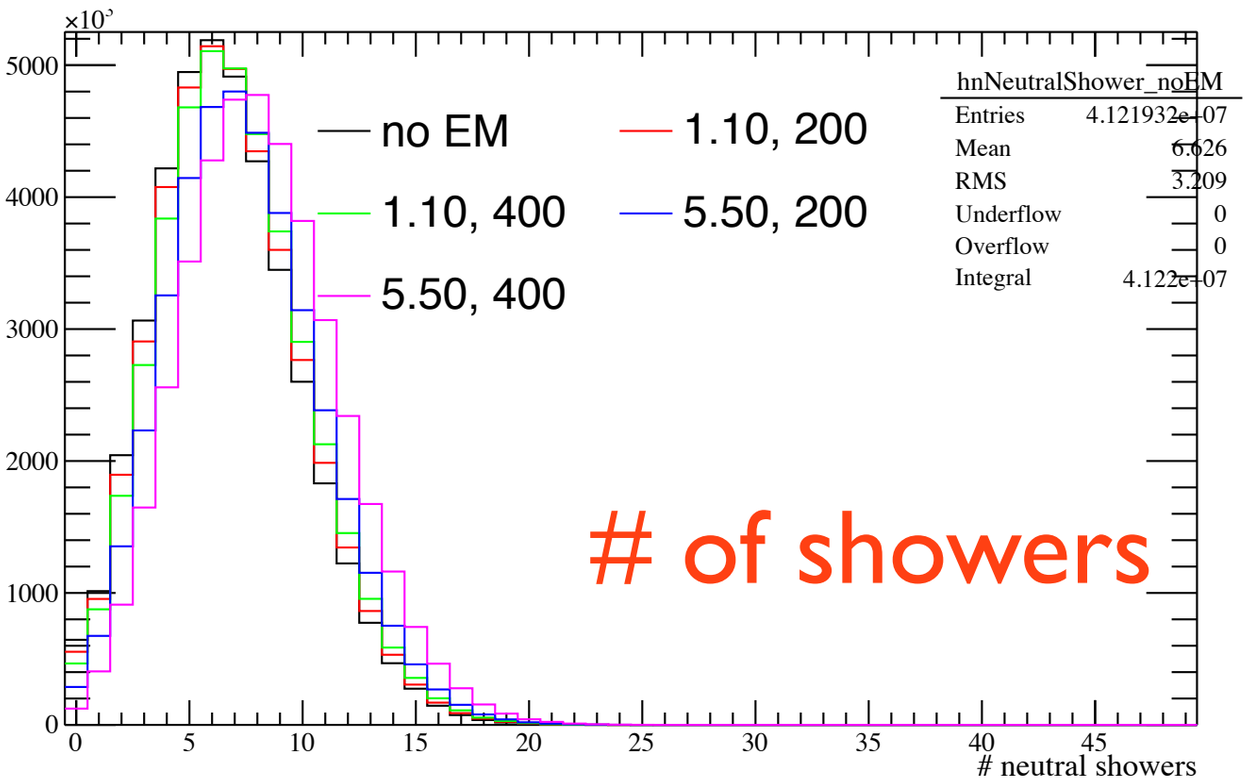
# Memory Usage

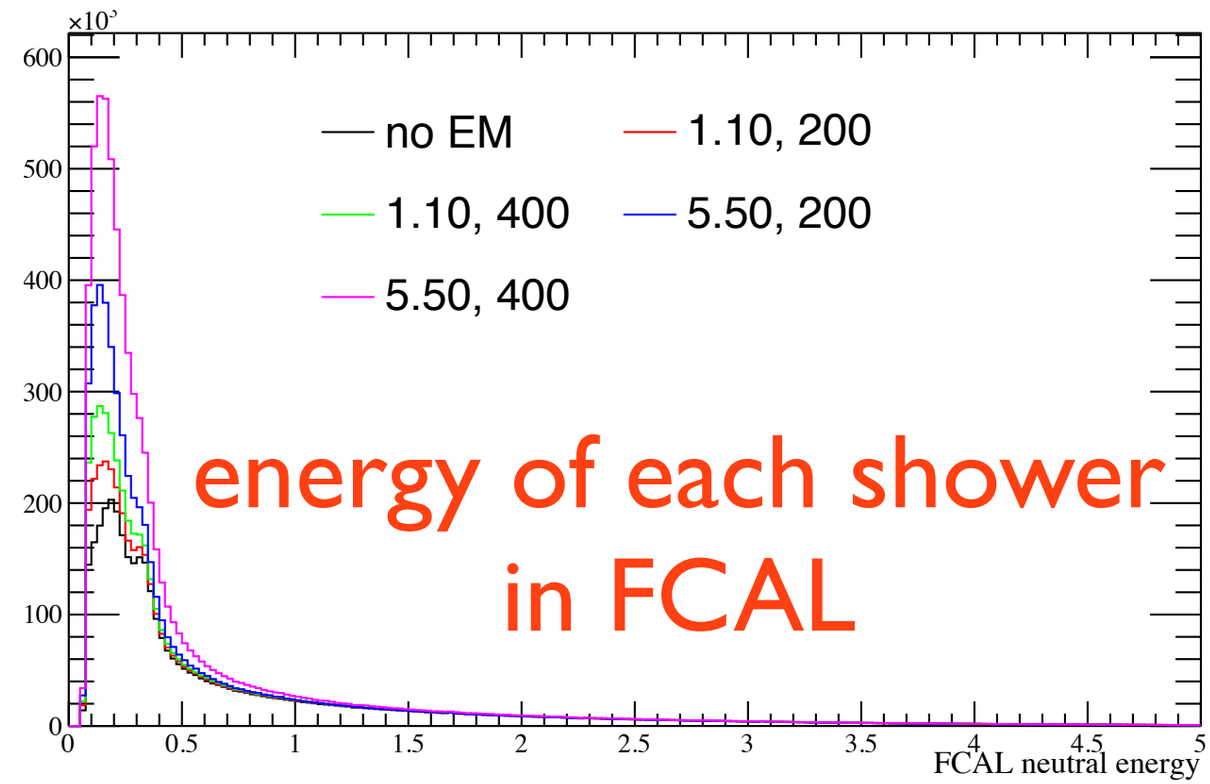
- IU cluster has 256 GB of RAM for 64 nodes (3 clusters)
- When running jobs, top command gives 689m for VIRT, 383m for RES, independent of EM bg
- Re-ran over 10 files for each configuration to check time, vmem use

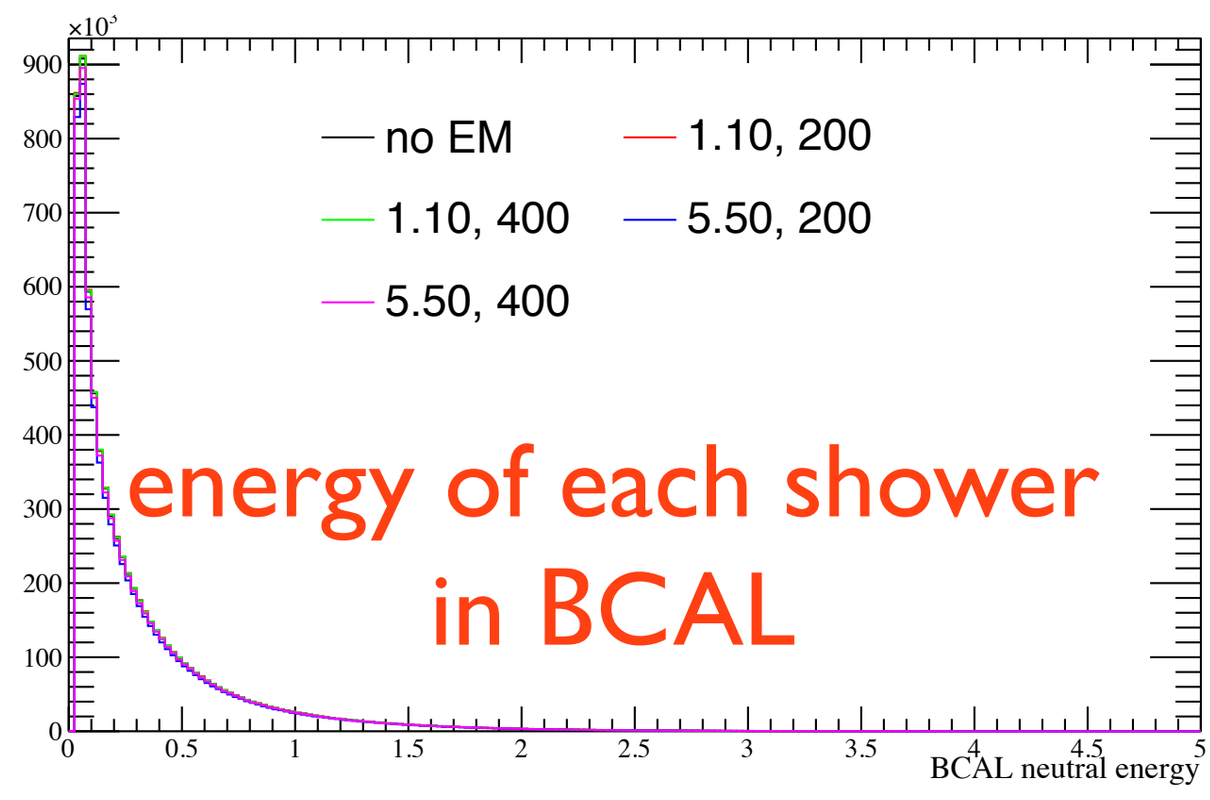
| type | time (hrs) |
|---|---|
| no EM | 1.1 - 1.5 |
| standard | 2 - 3.6 |
| **high rate** | **5.5-7.5** |
| long gate | 3-3.5 |
| **high rate, long gate** | **10-15** |



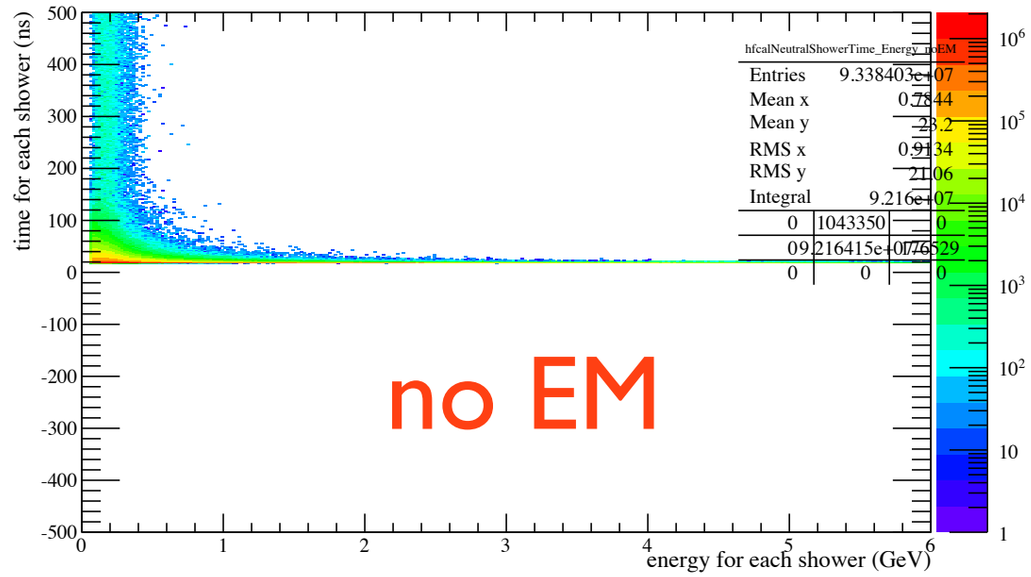
# Increase in Showers

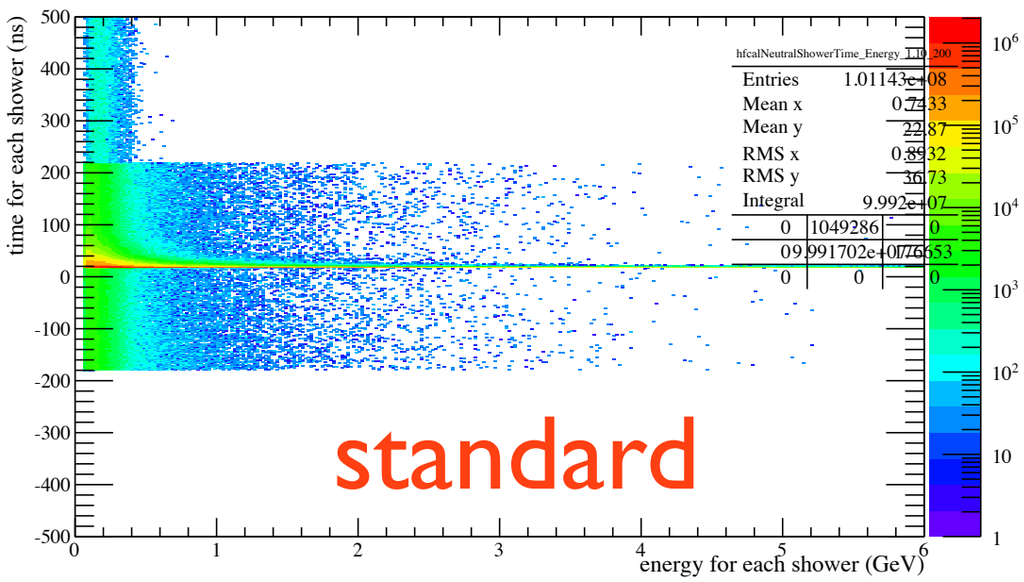


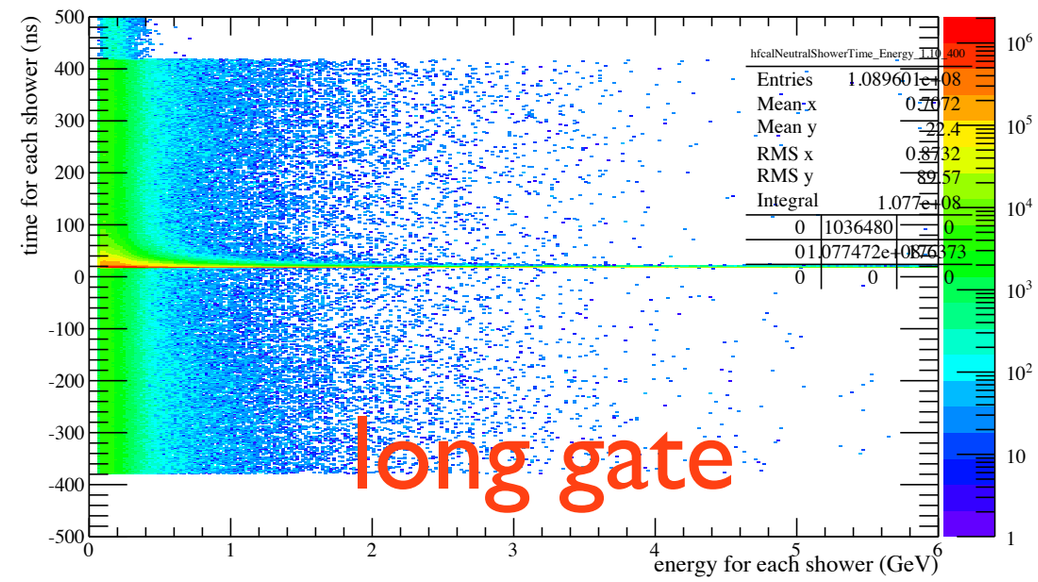



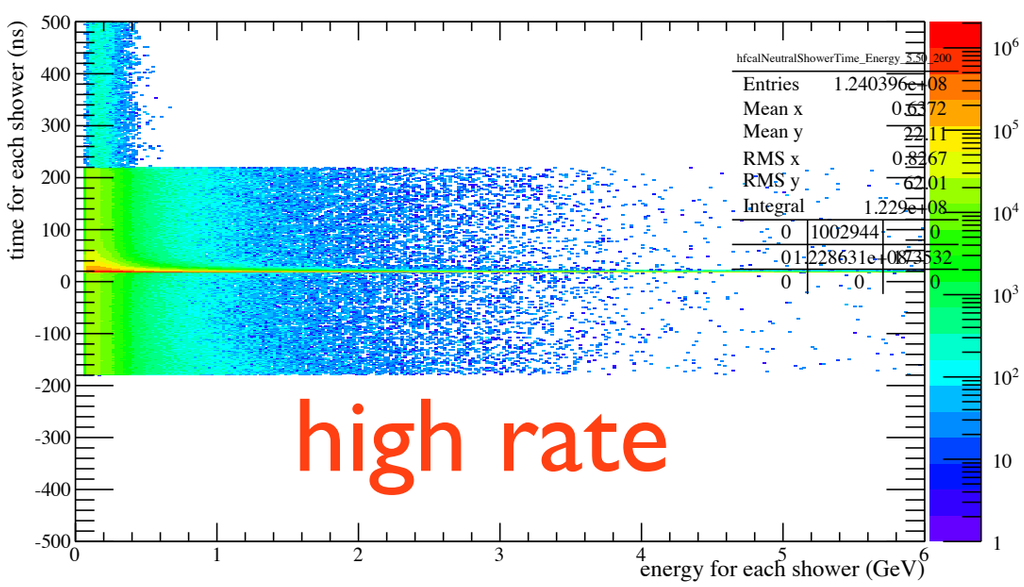



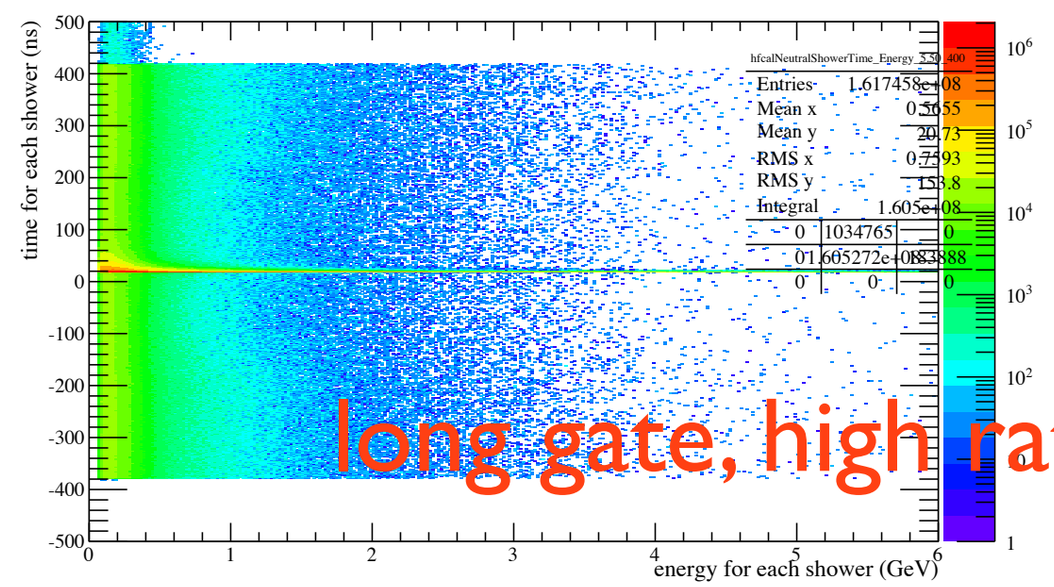
# FCAL Shower time vs energy



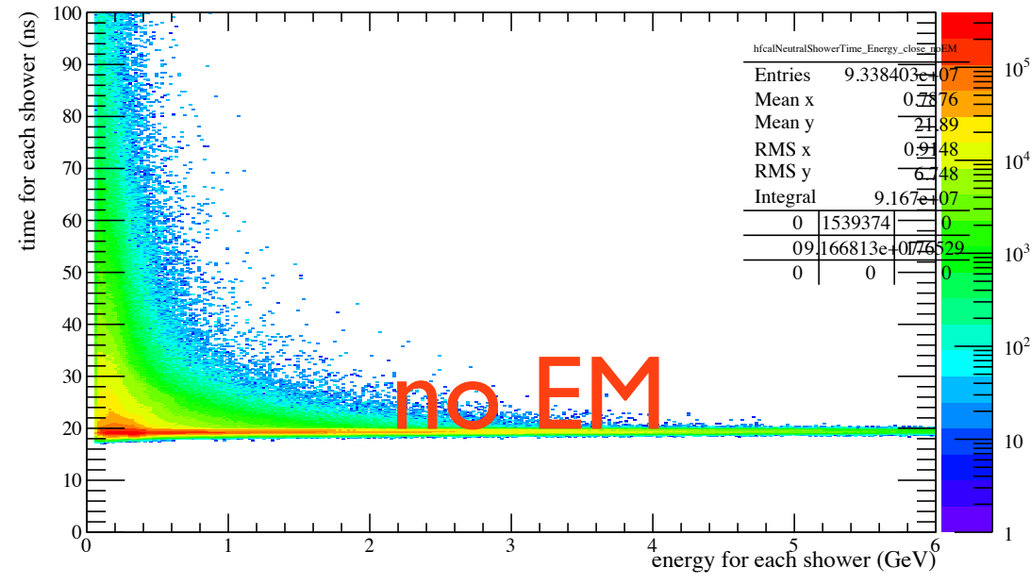



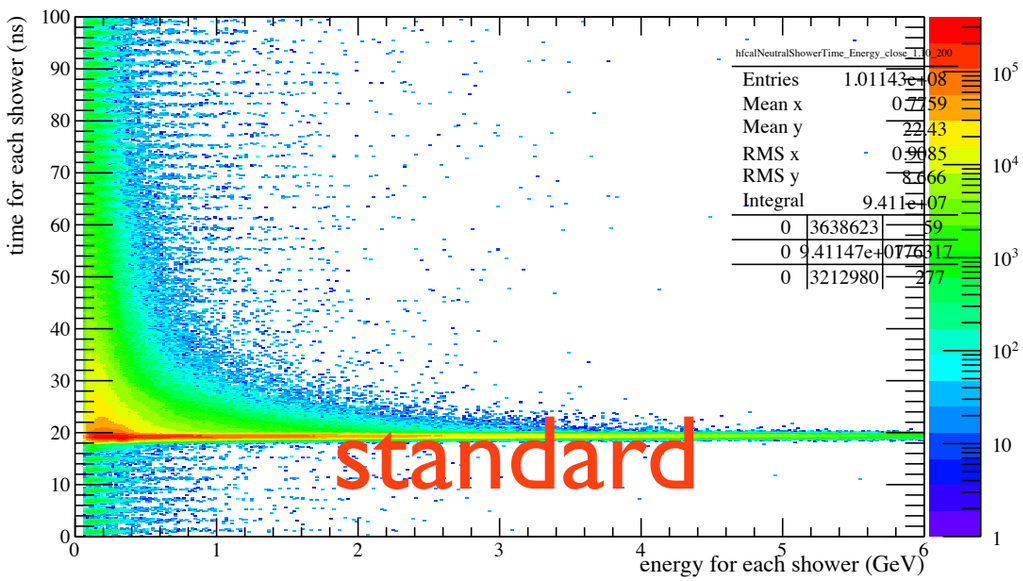



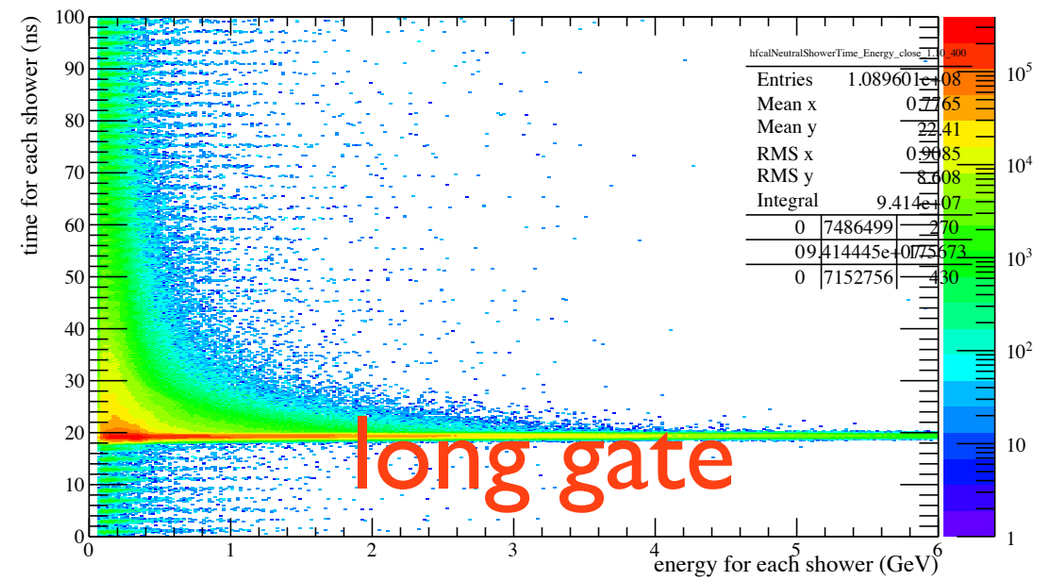



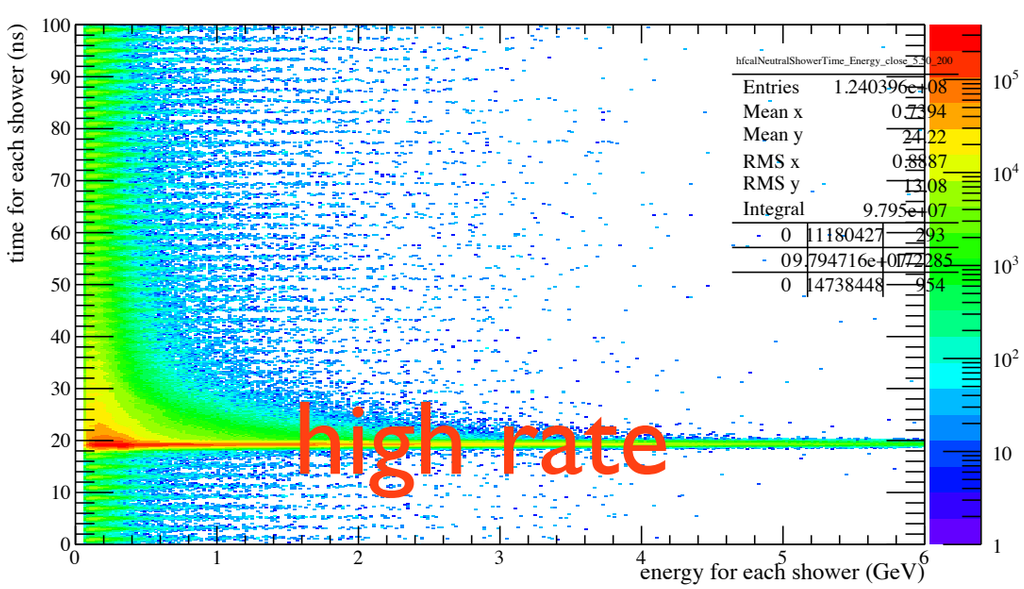
# FCAL Shower time vs energy

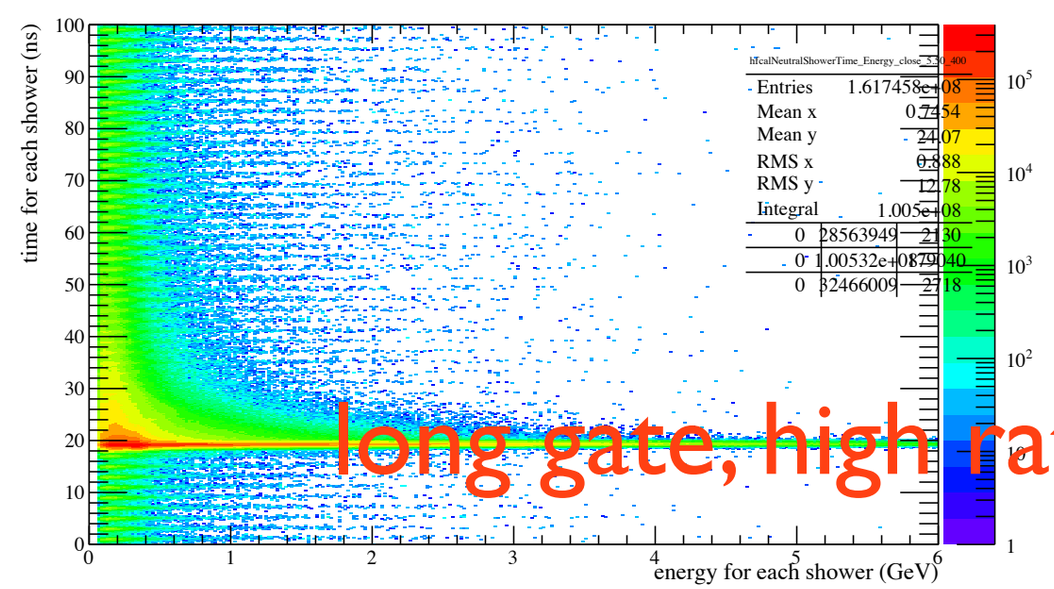
closeup



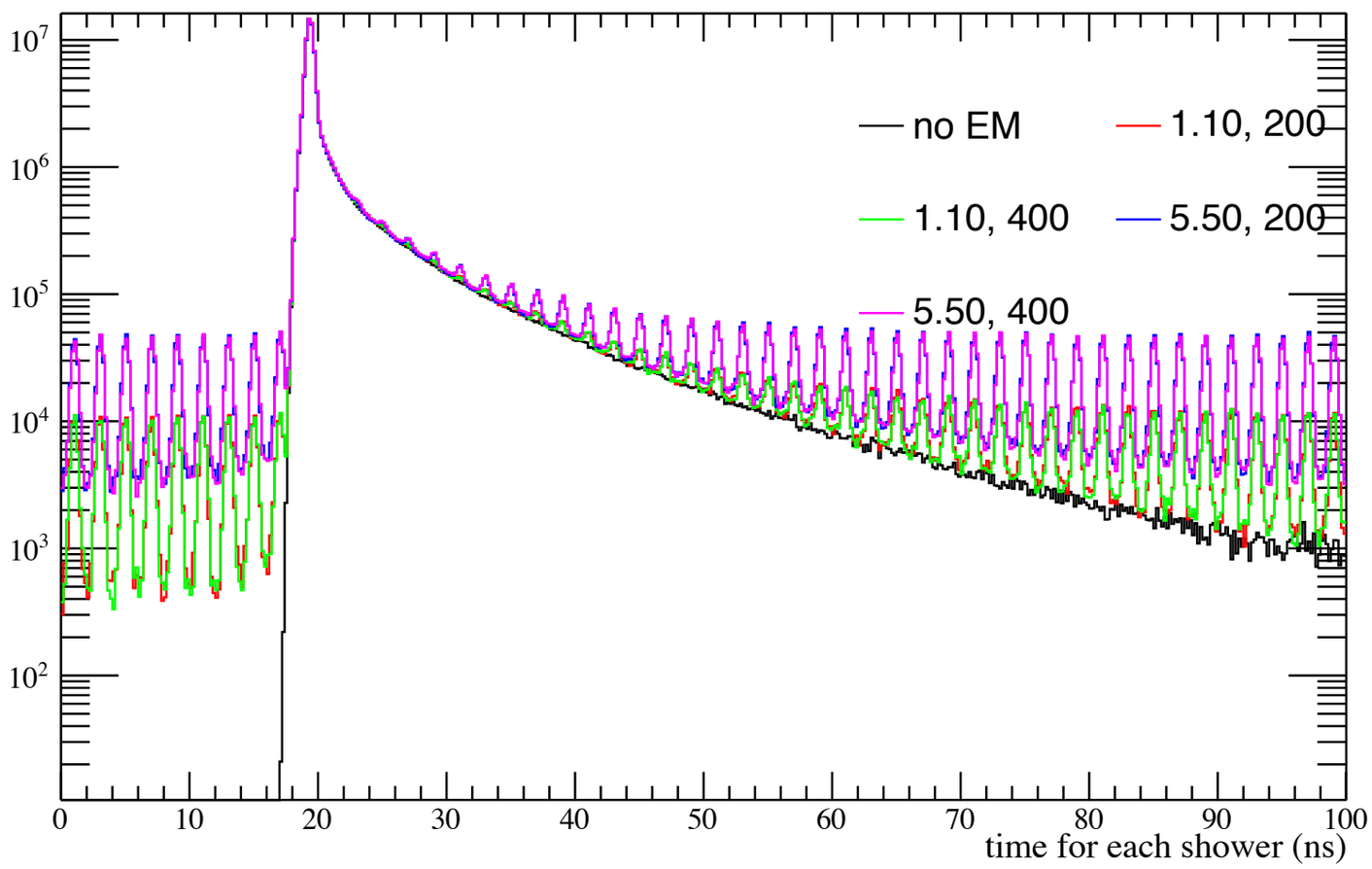



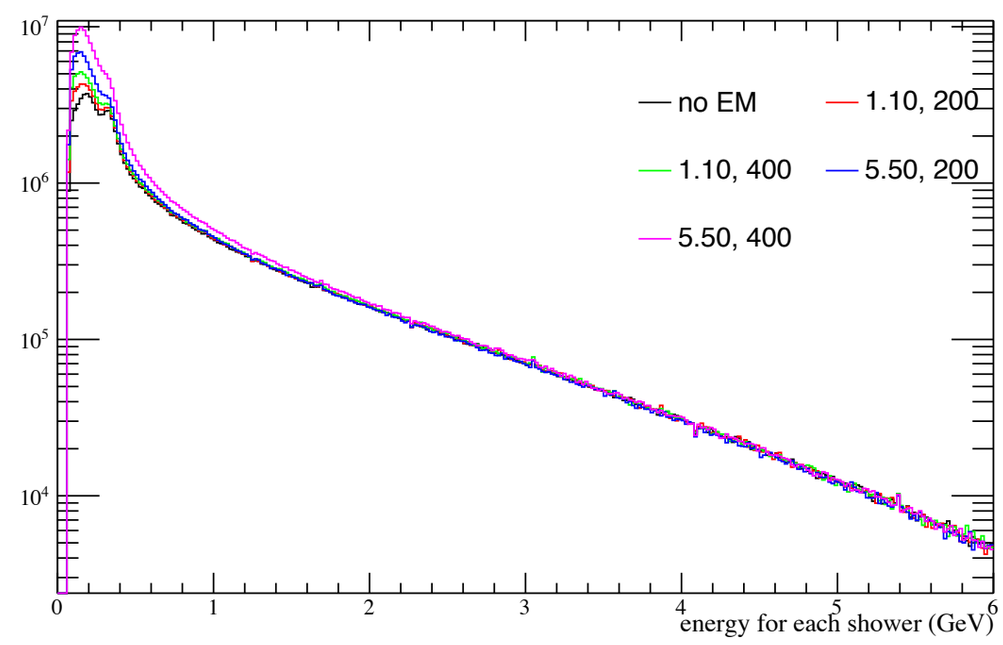



# Projections of Time and Energy of FCAL Showers

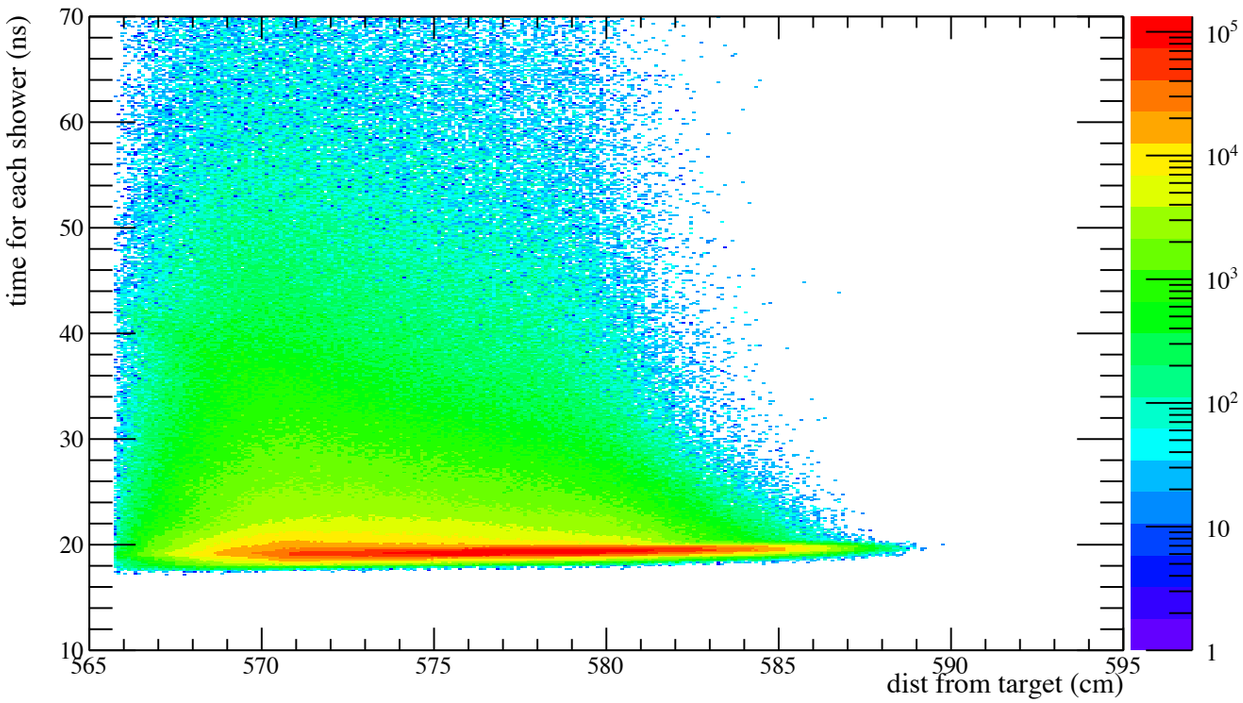



time of showers:
see CEBAF beam structure

energy of showers



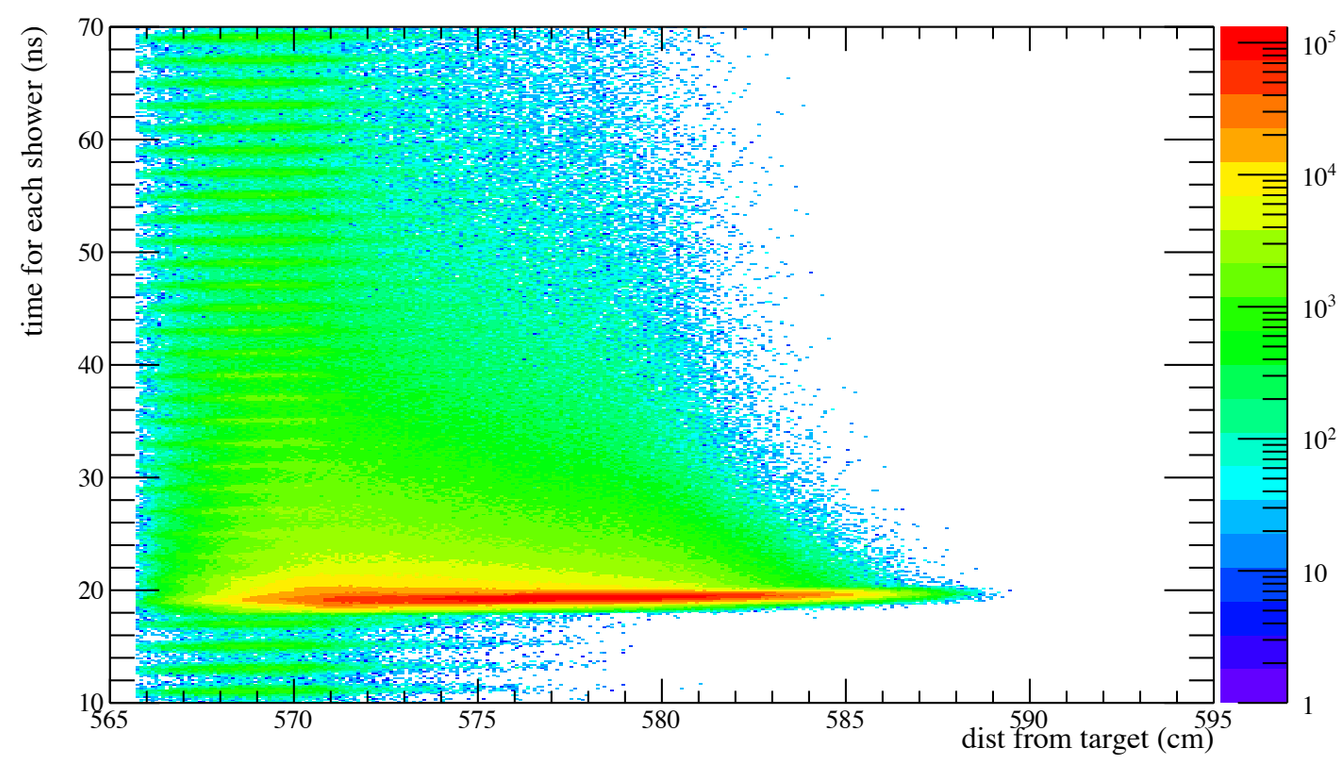
# FCAL Shower Time vs Distance from Target




shower pos: given for each shower
target: (0,0,65)

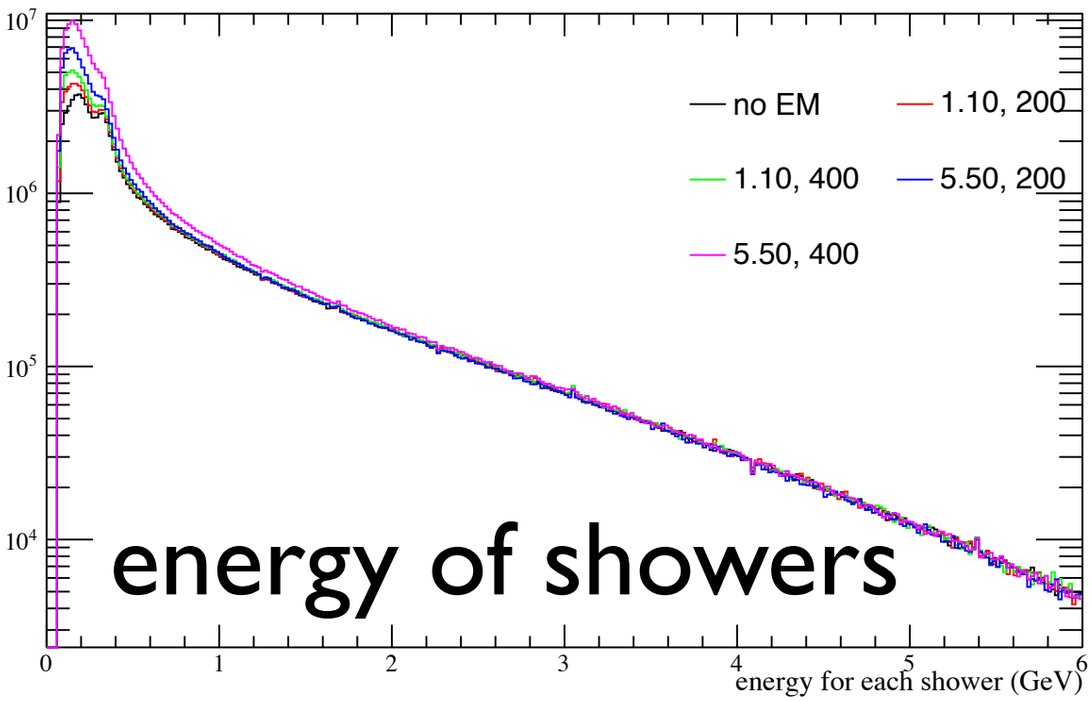
no EM

high rate, long gate




No change in time of showers in main band as a function of distance from target

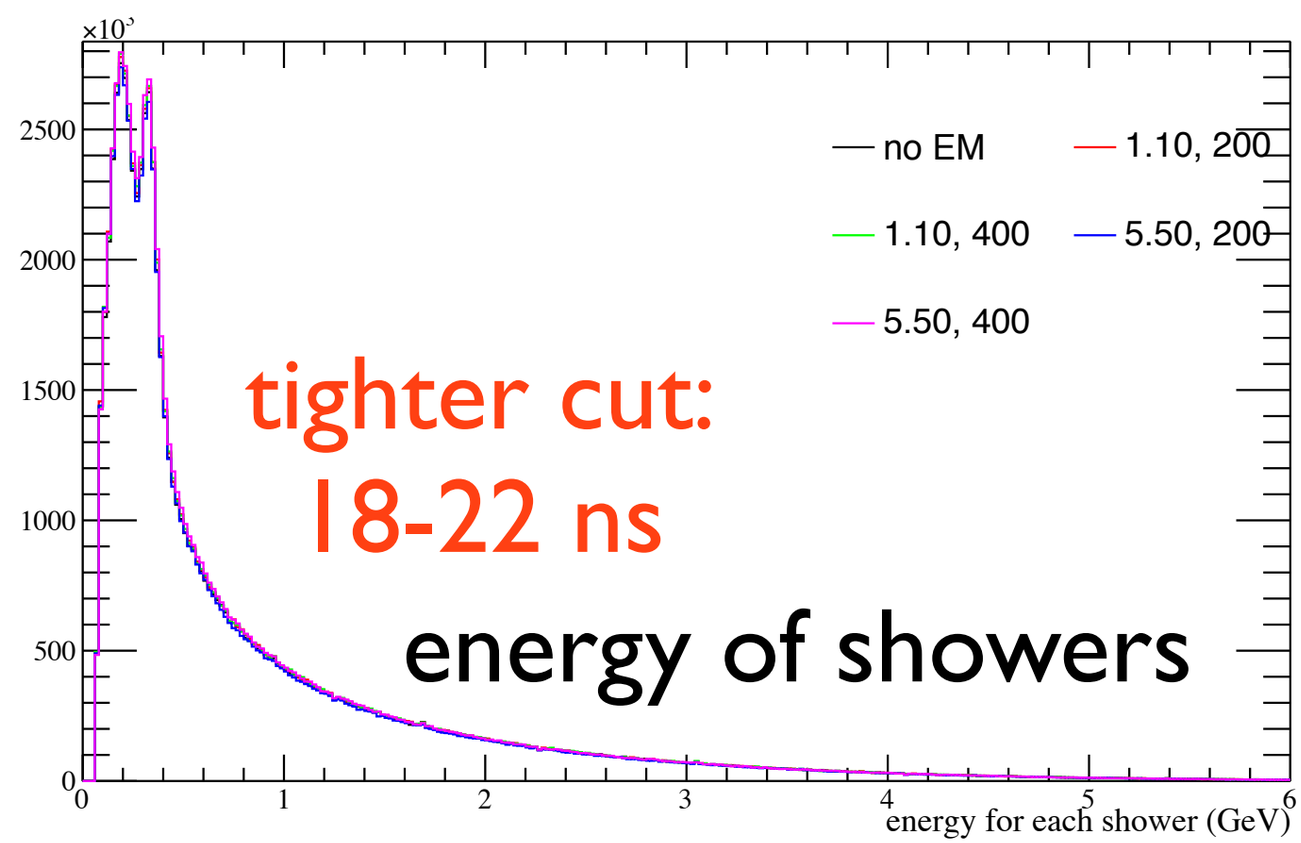
# FCAL Energy Showers After Timing Cut



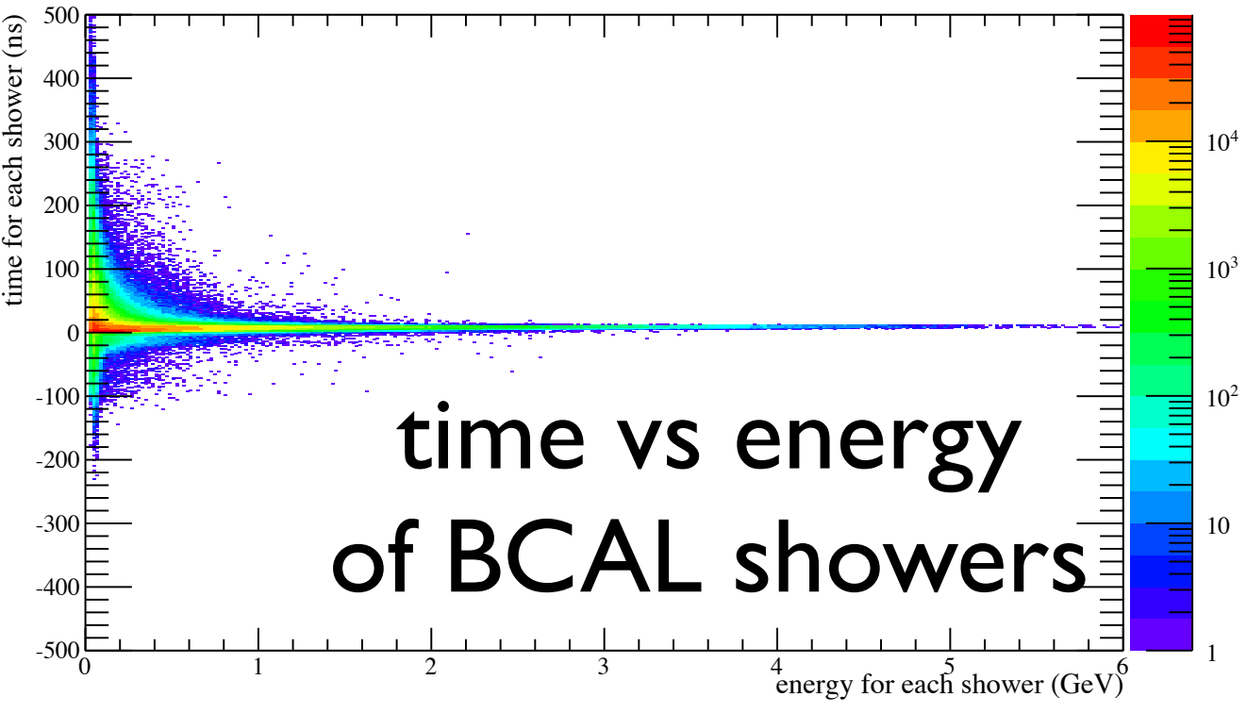

FCAL resolution is 0.3 - 0.4 ns depending on pulse height

loose cut:
16-26 ns

Even loose 10 ns cut removes most of EM bg for FCAL

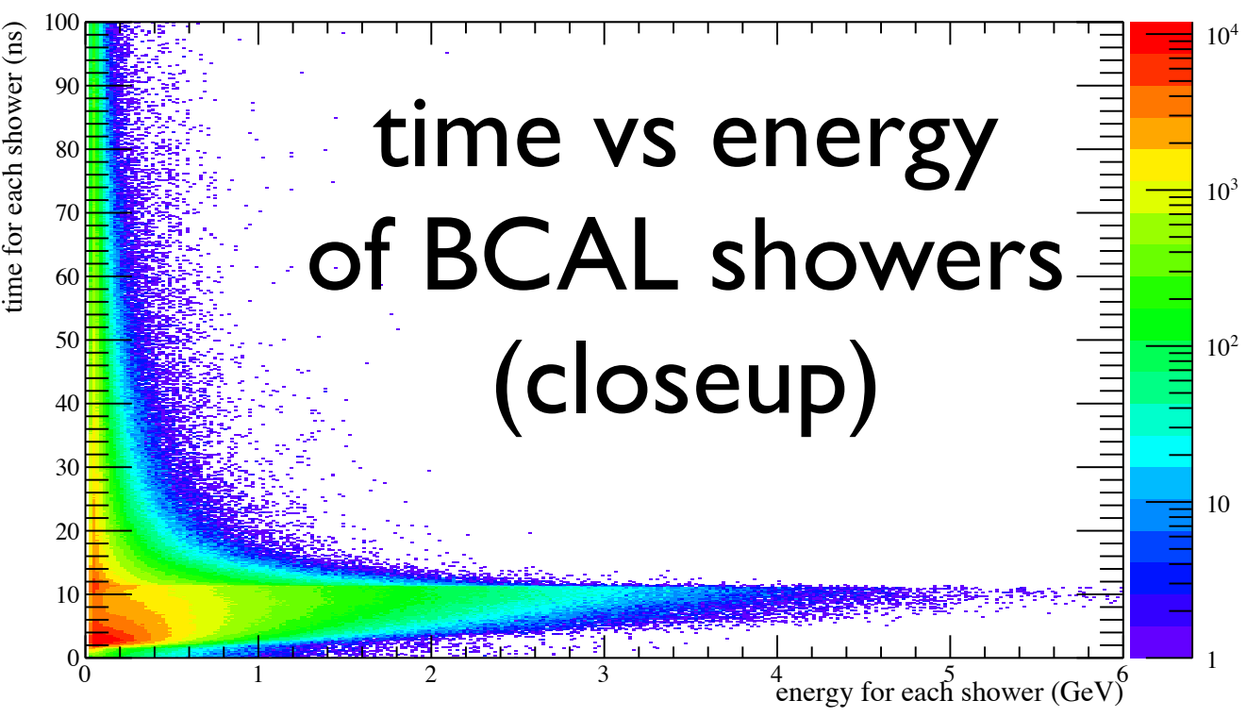


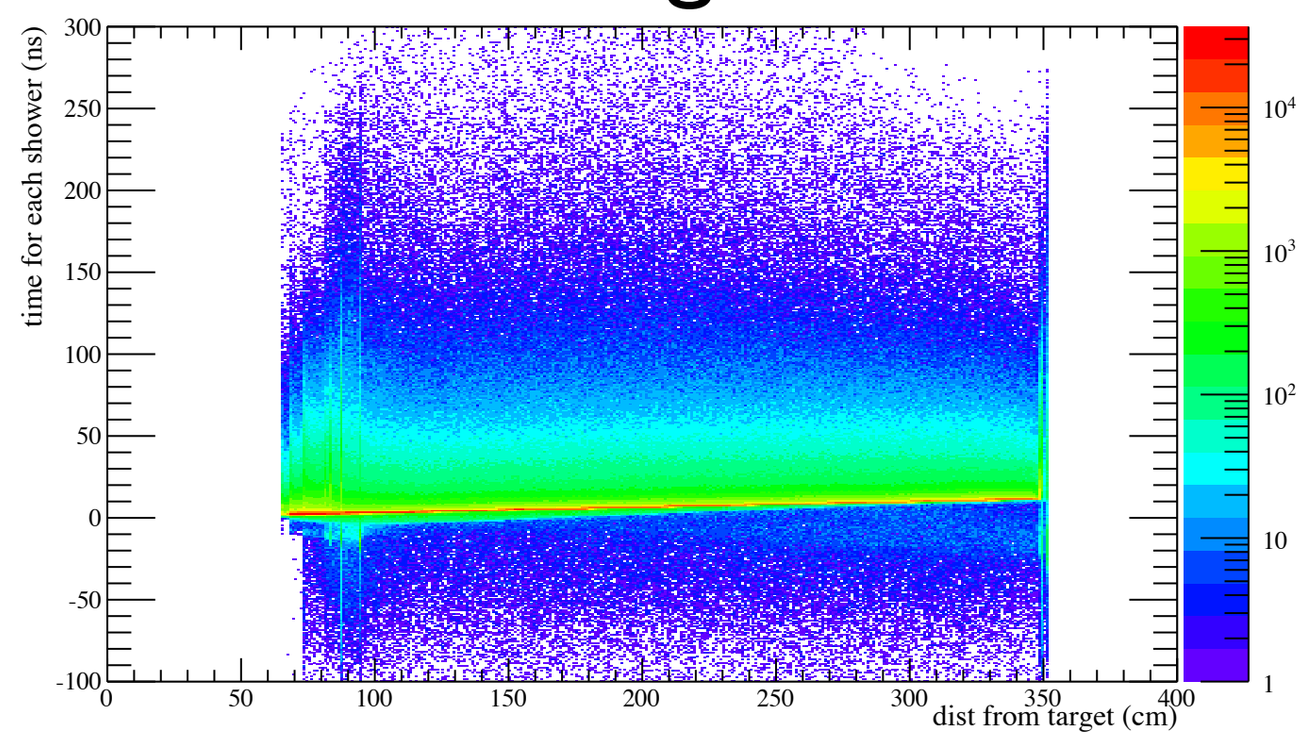
# BCAL



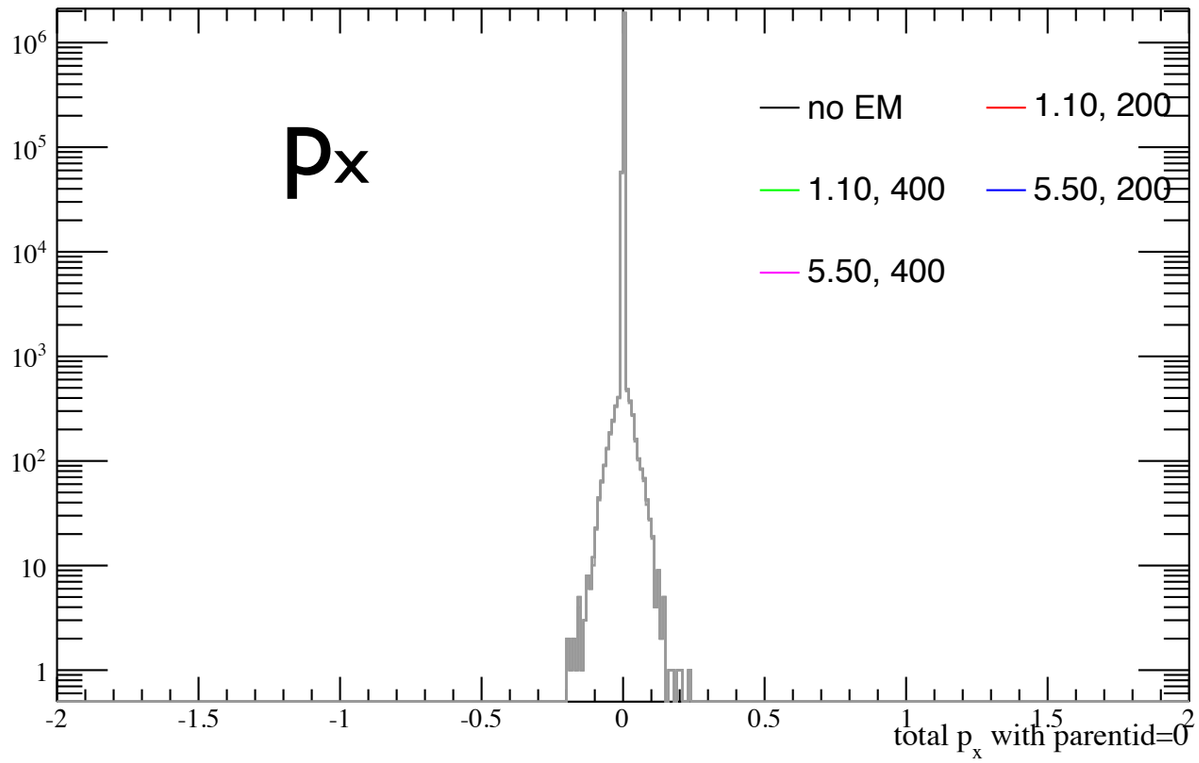

EM bg has no effect on all plots

time vs distance from target for BCAL

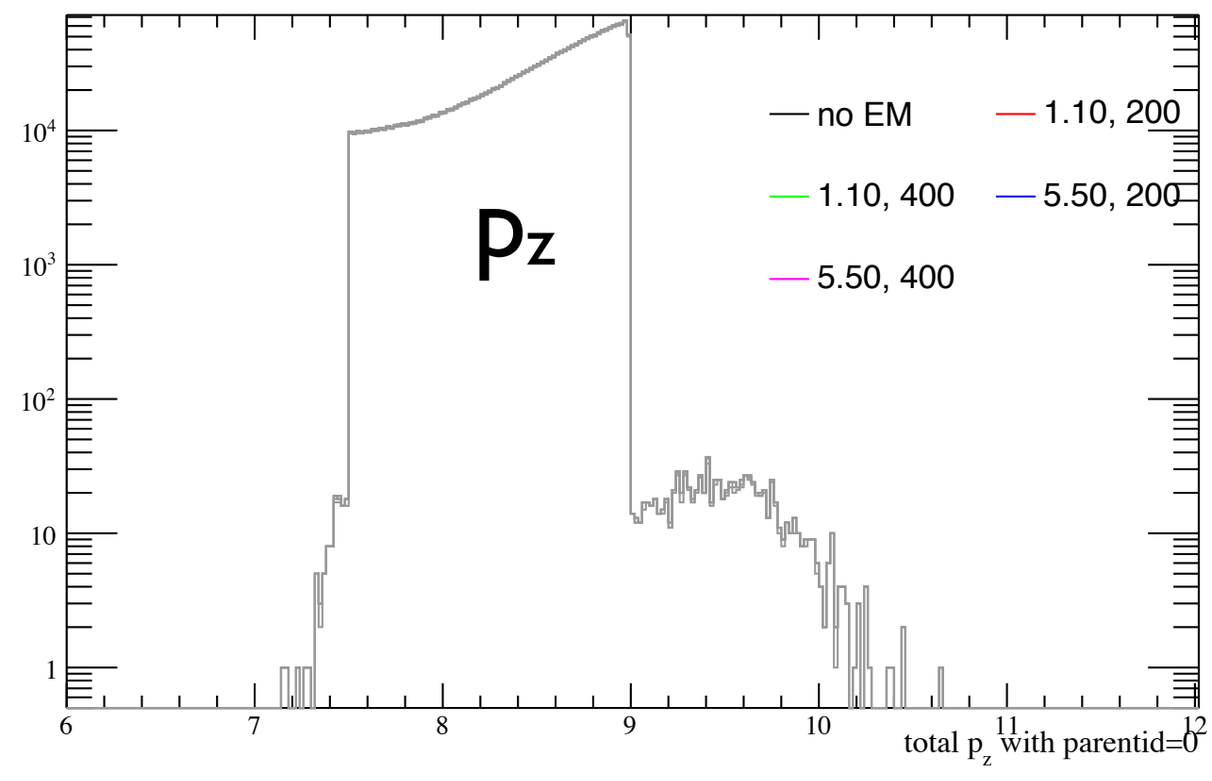


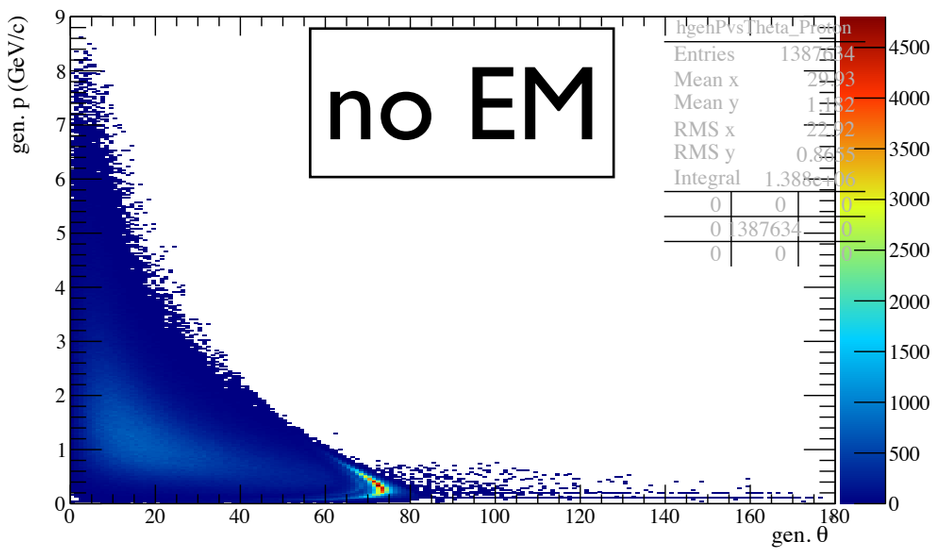
# Generated E, p

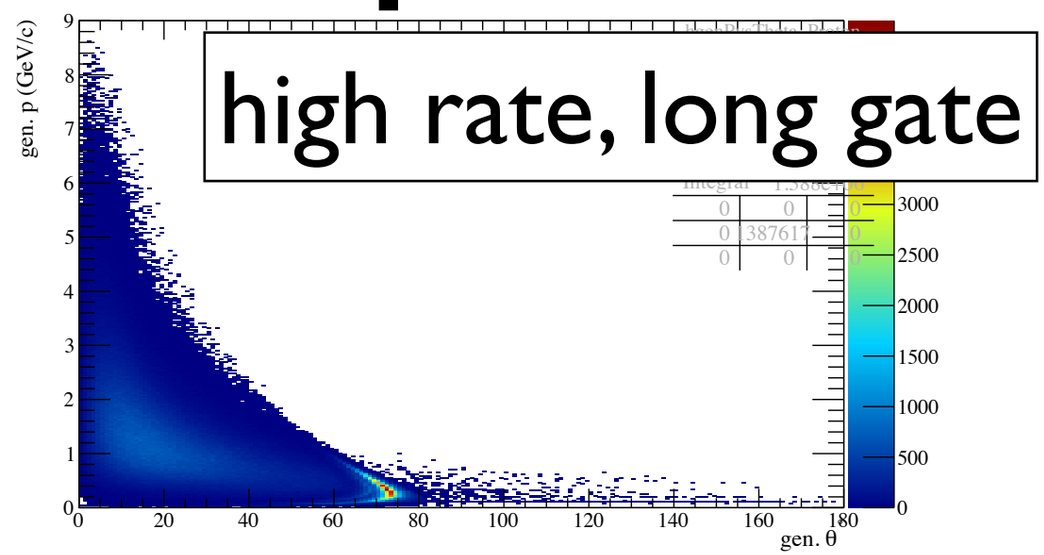



Select and sum all particles with parentid=0

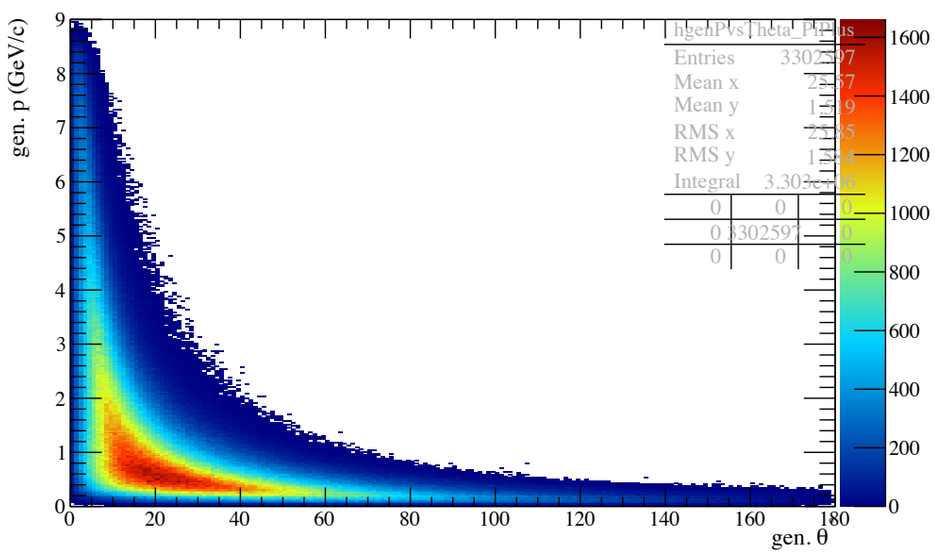


# Generated p vs θ

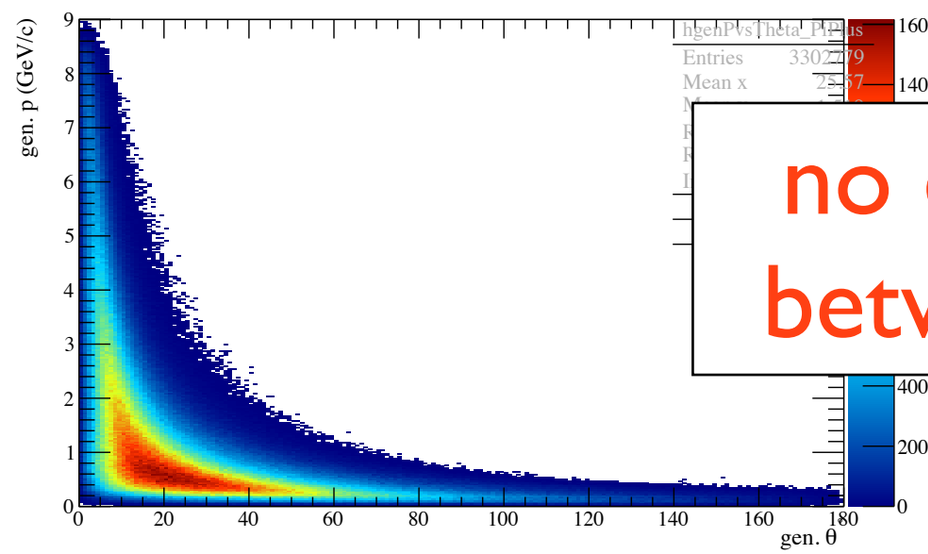


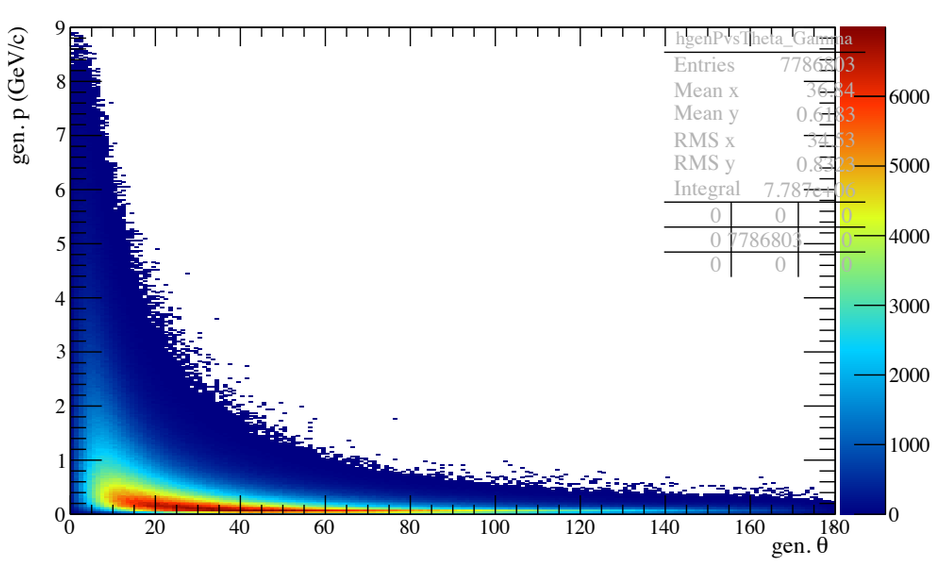

p



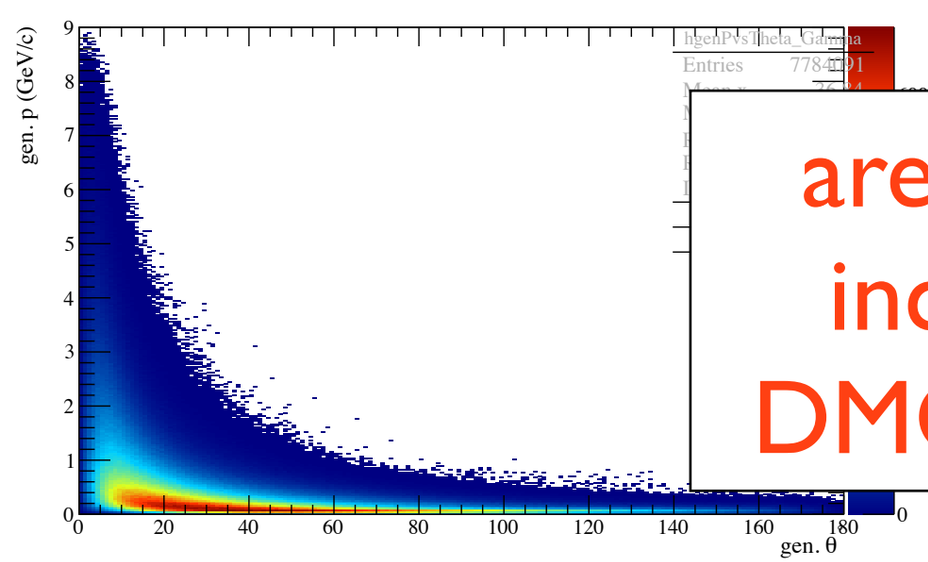

$\pi^+$




no difference between sets?

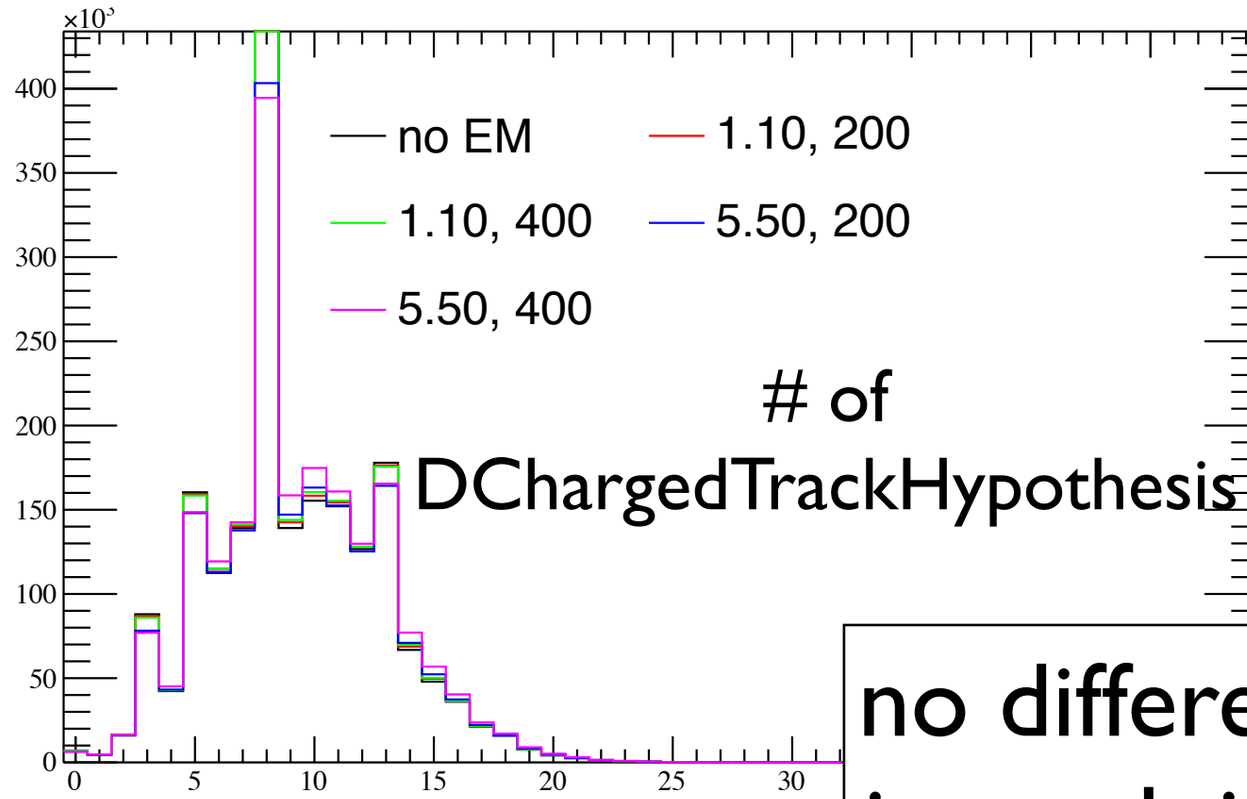


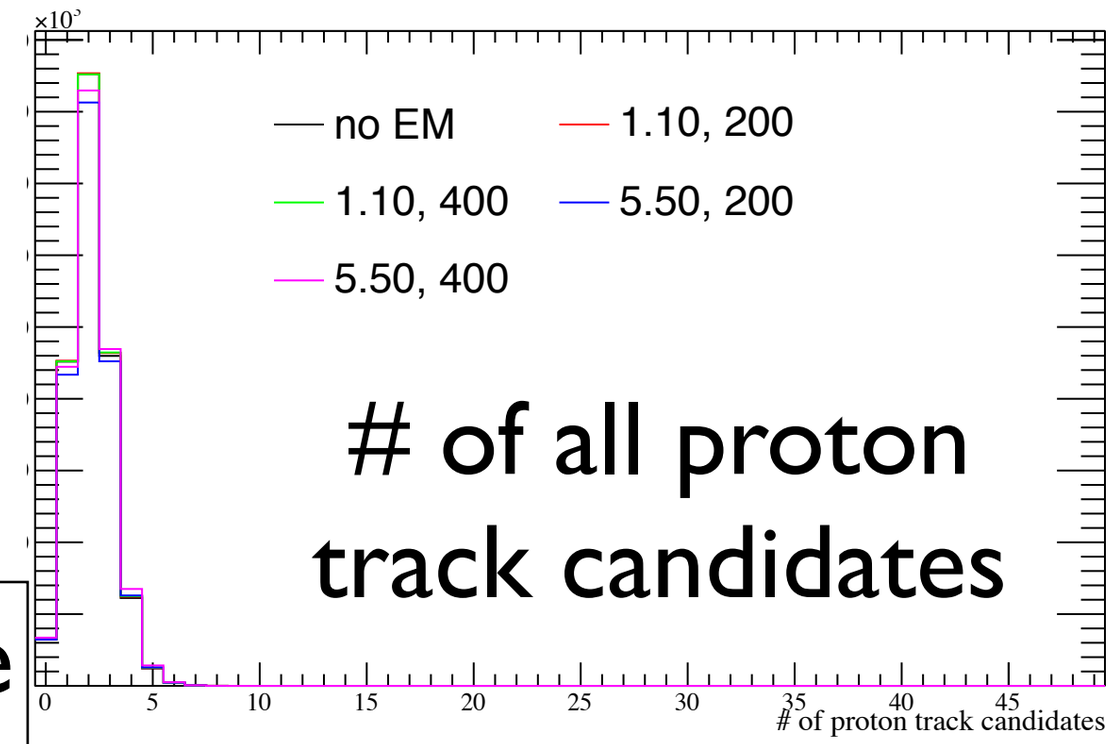

γ

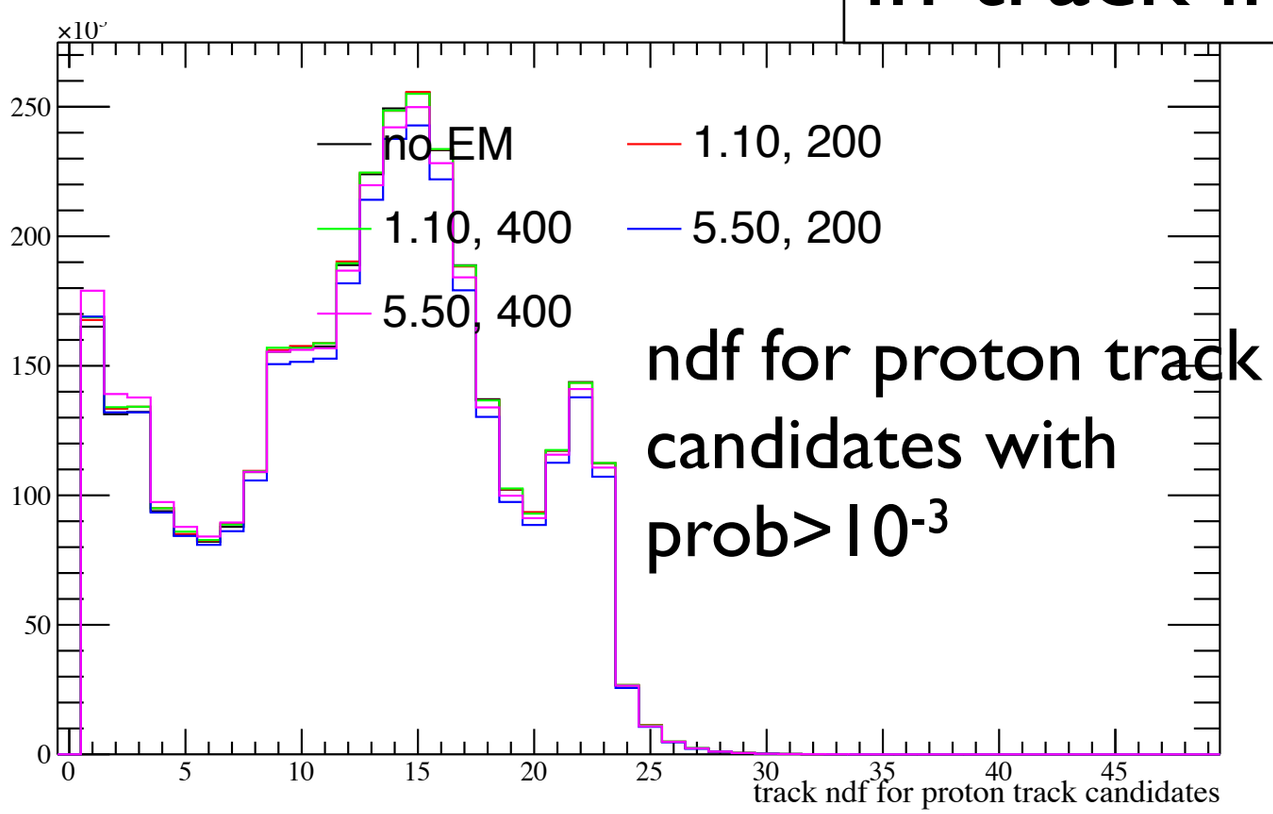
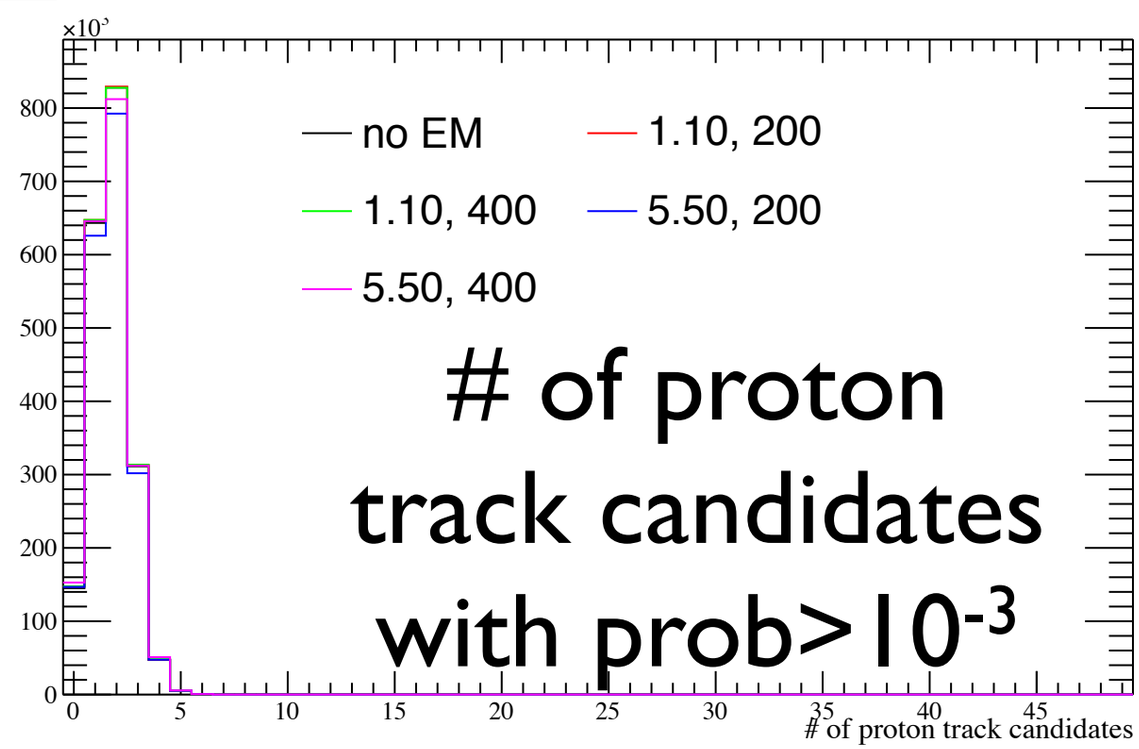



are EM bg γ included in DMCThrown?

# Tracks




no difference in track info?