F_π test vs changing $-t_{min}$

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Objective:

1. First look at data to set the initial cuts.

2. To evaluate the preliminary yields (without charge and efficiency corrections) by applying the initial cuts.

/u/group/c-pionlt/USERS/jainsam/hallc_replay_lt/UTIL_PION/scripts/replay/PionLT/replay_production_coin.C

```
UTIL_PION/config/DEF-files/coin_production.def
UTIL_PION/config/DEF-files/Online_Coin_Production_Cuts.def
```

Run lists:Q2 = 1.6, W = 3.08, Target = LH2

(2022)Low Epsilon

SHMS Center (θ= 5.50)

- 16403 - 16405
- 16408 - 16417

SHMS Left (θ= 7.505)

- 16488 - 16505, 16507

(2021)High Epsilon

SHMS Right (θ= 6.995)

- 13170, 13171 - 13173 - 13176
- 13178 - 13180

SHMS Left (θ= 10.690)

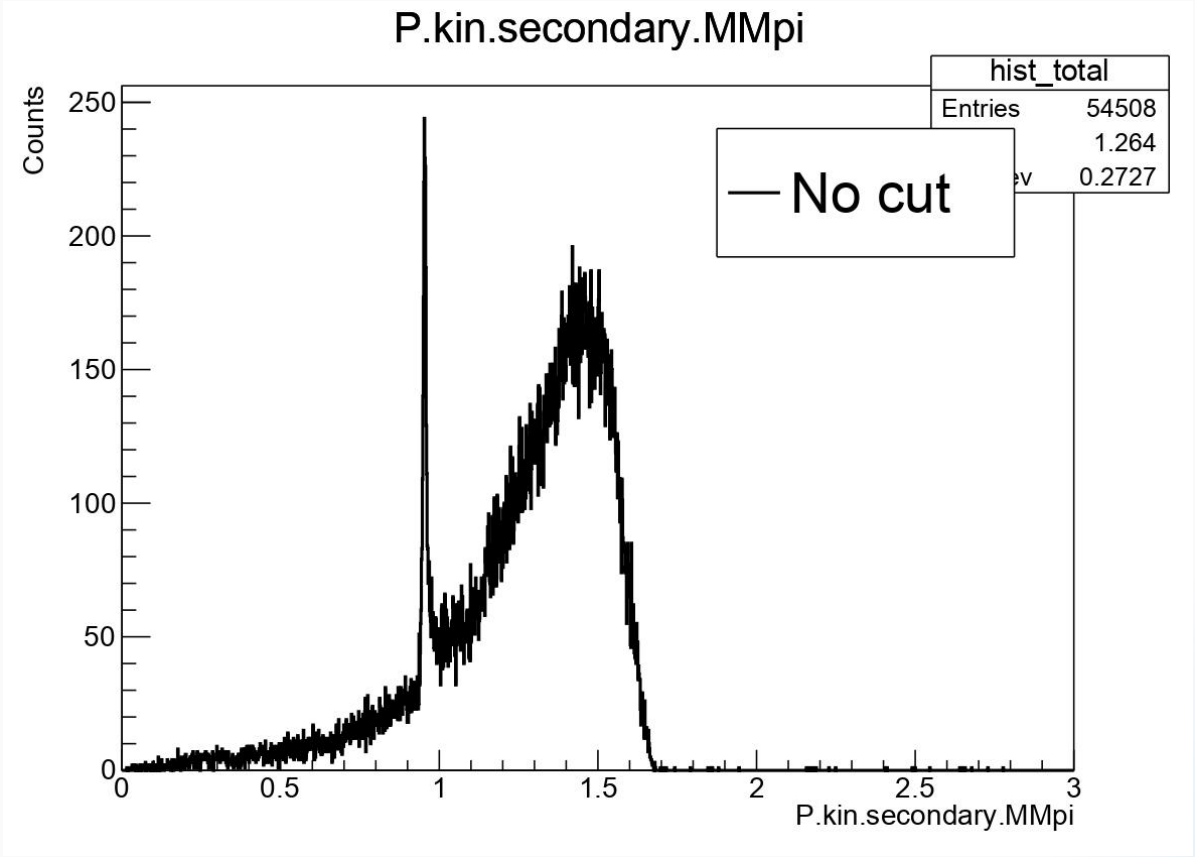
- 13191- 13199

SHMS Center (θ= 8.69)

- 13186 - 13189

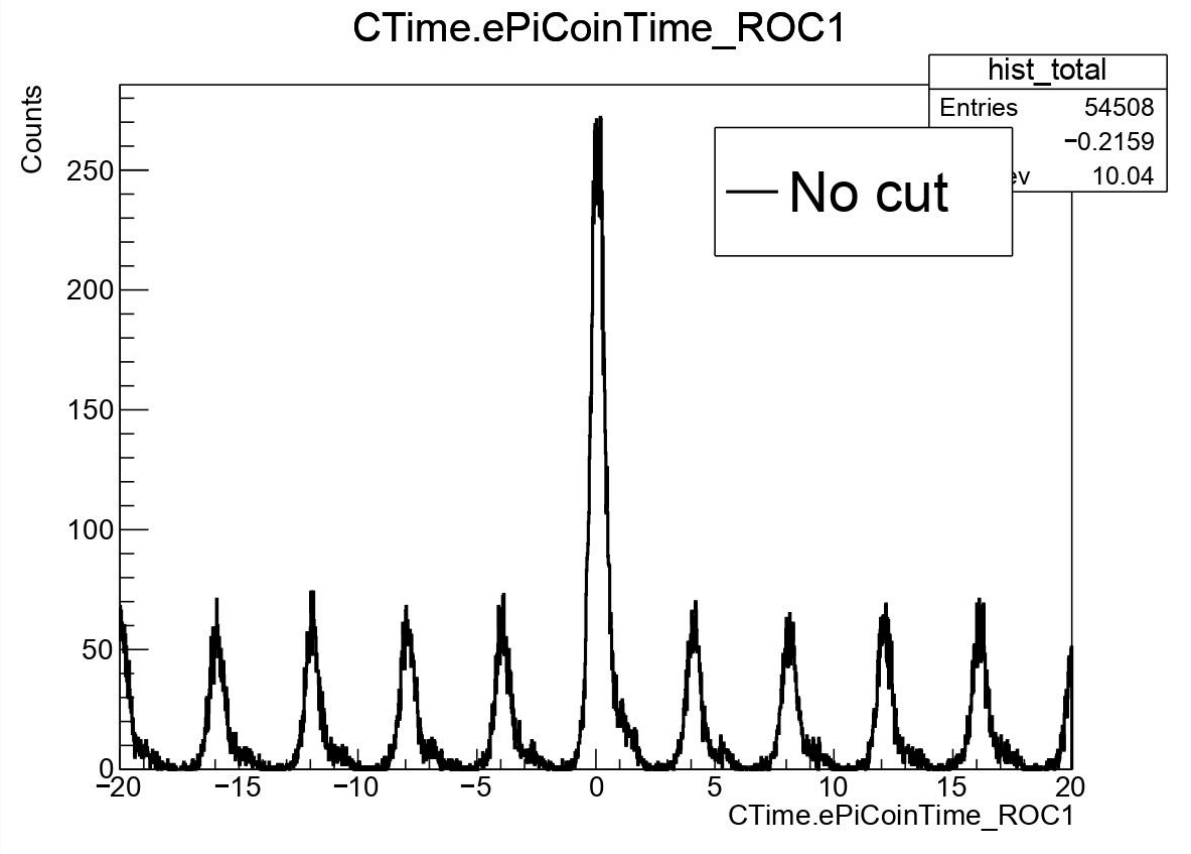
Missing Mass - NO Cuts

Run = 14604



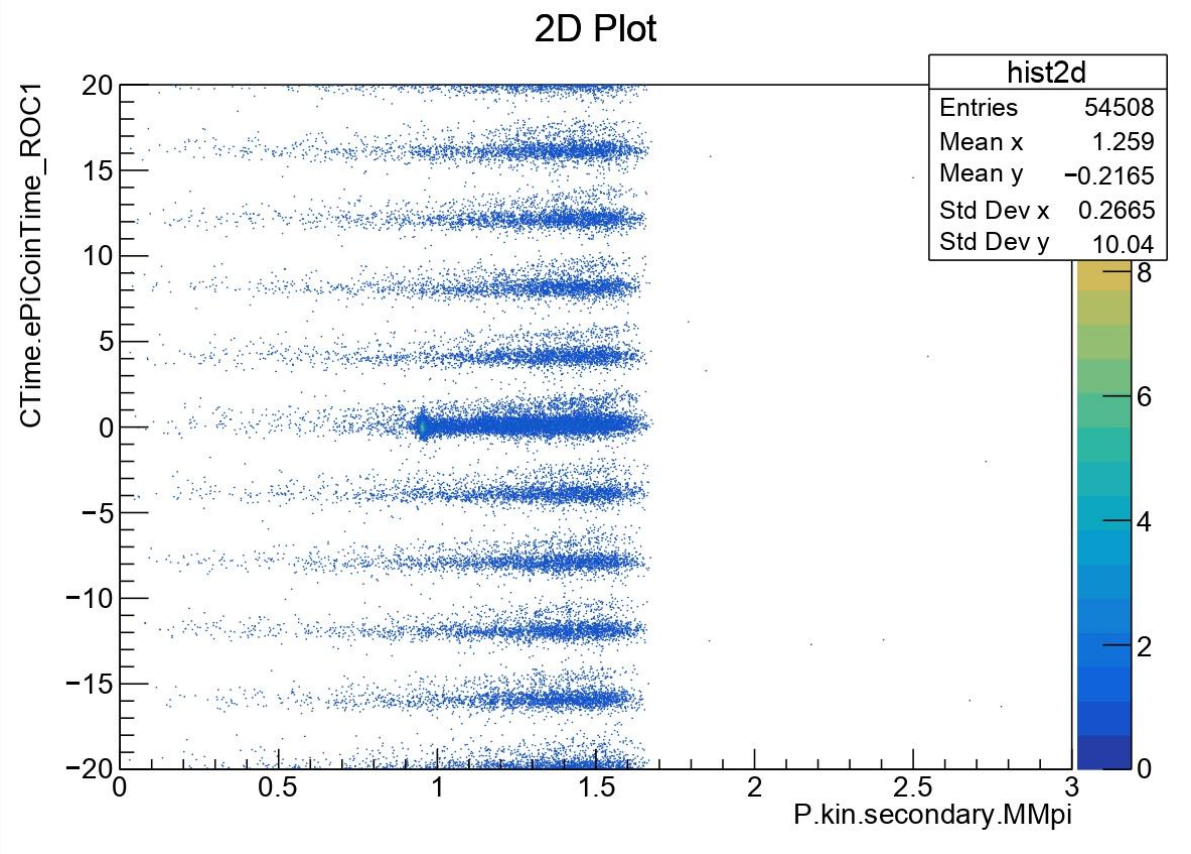
Coincidence time - NO Cuts

Run = 14604



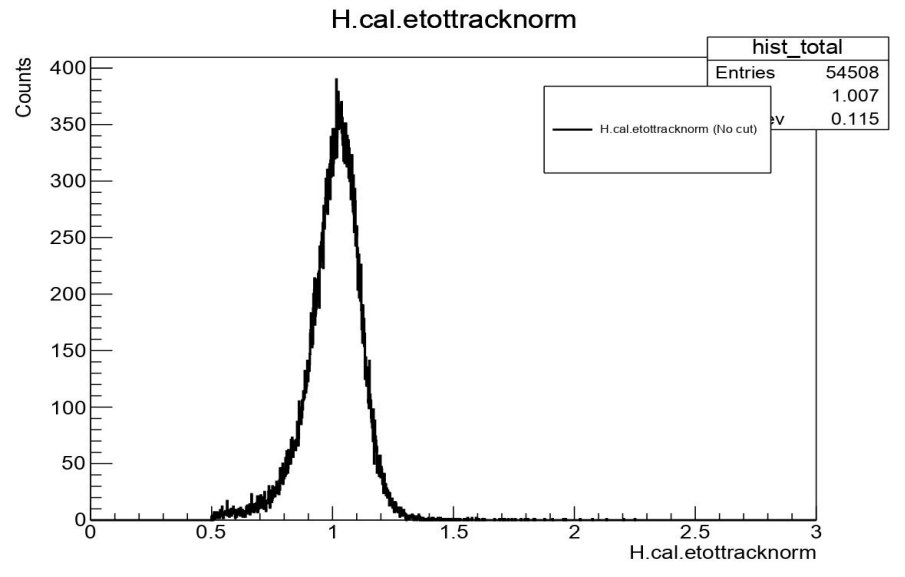
Missing Mass and coincidence time - NO Cuts

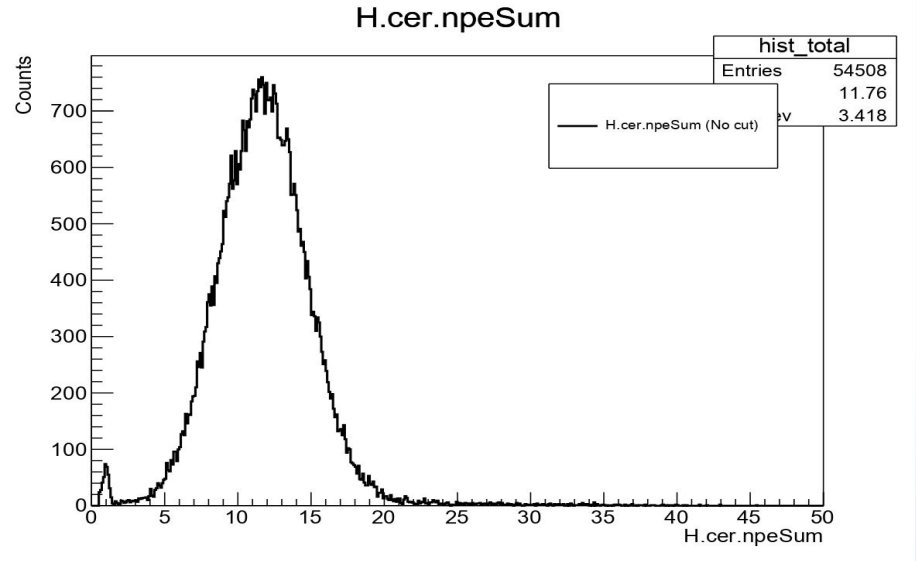
Run = 14604



Variables to apply initial cuts

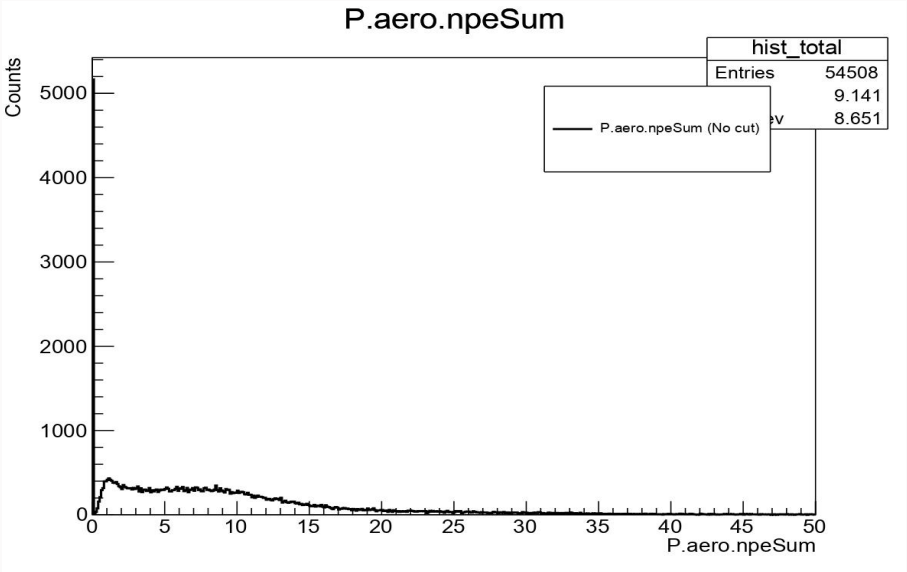
Run = 14604

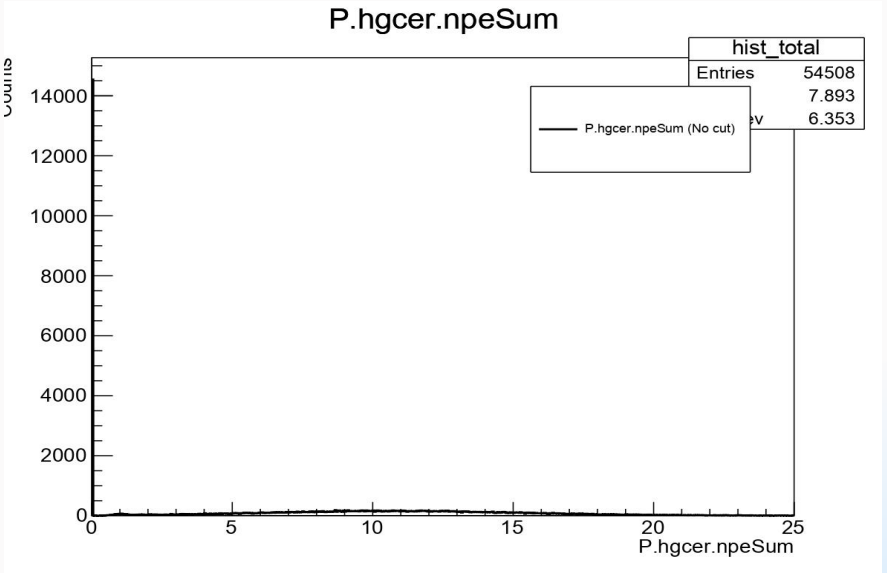




Variables to apply initial cuts

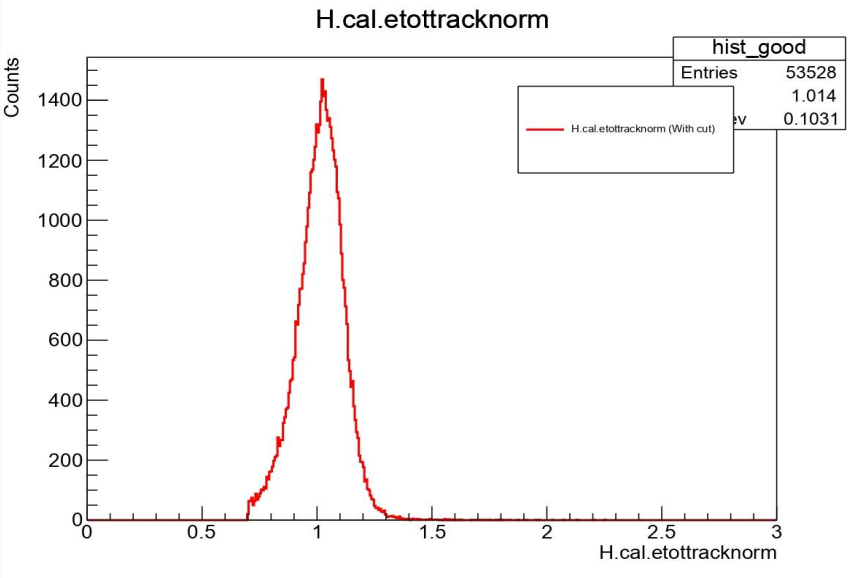
Run = 14604



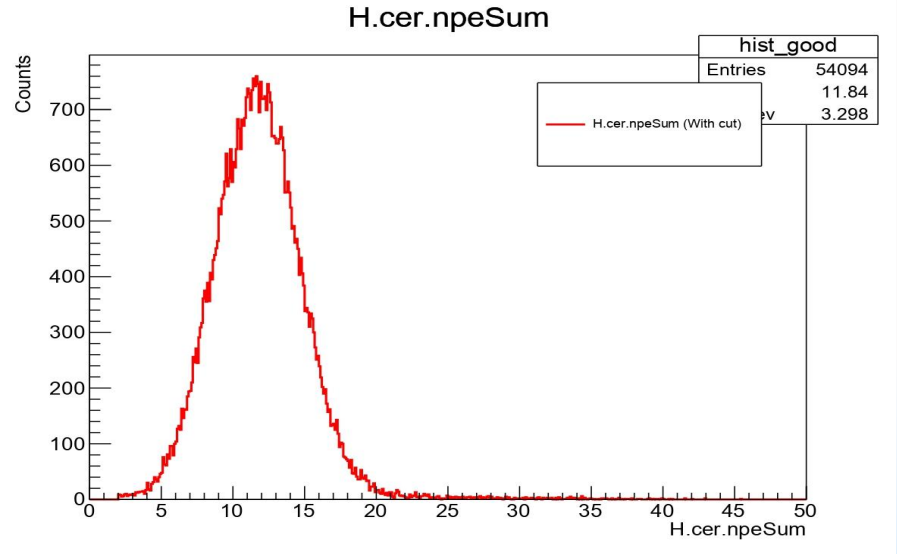


Initial cuts

Run = 14604



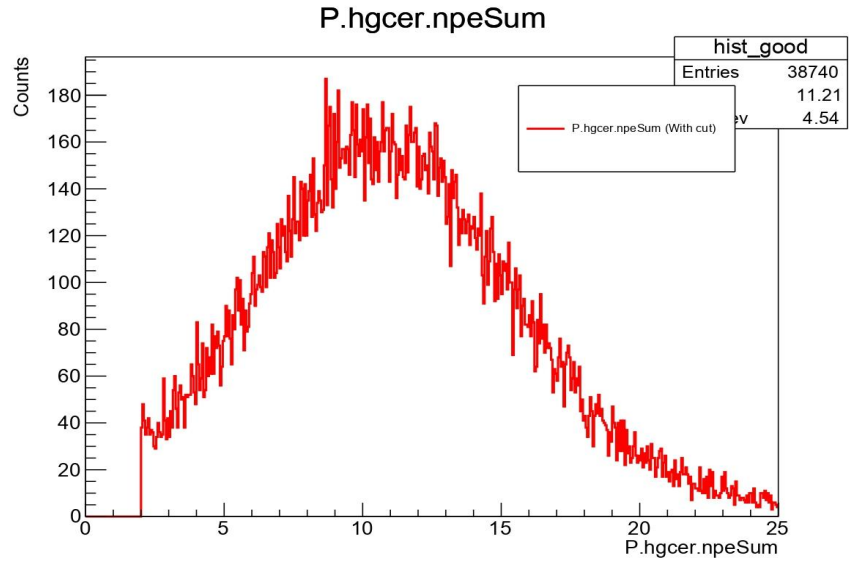
H_cal_etottracknorm > 0.7



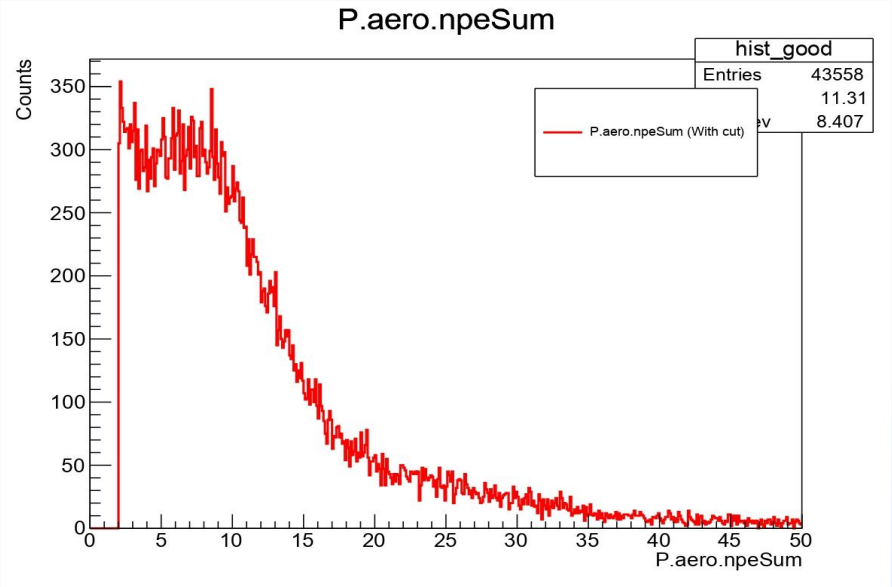
H_cer_npeSum > 2

Initial cuts

Run = 14604



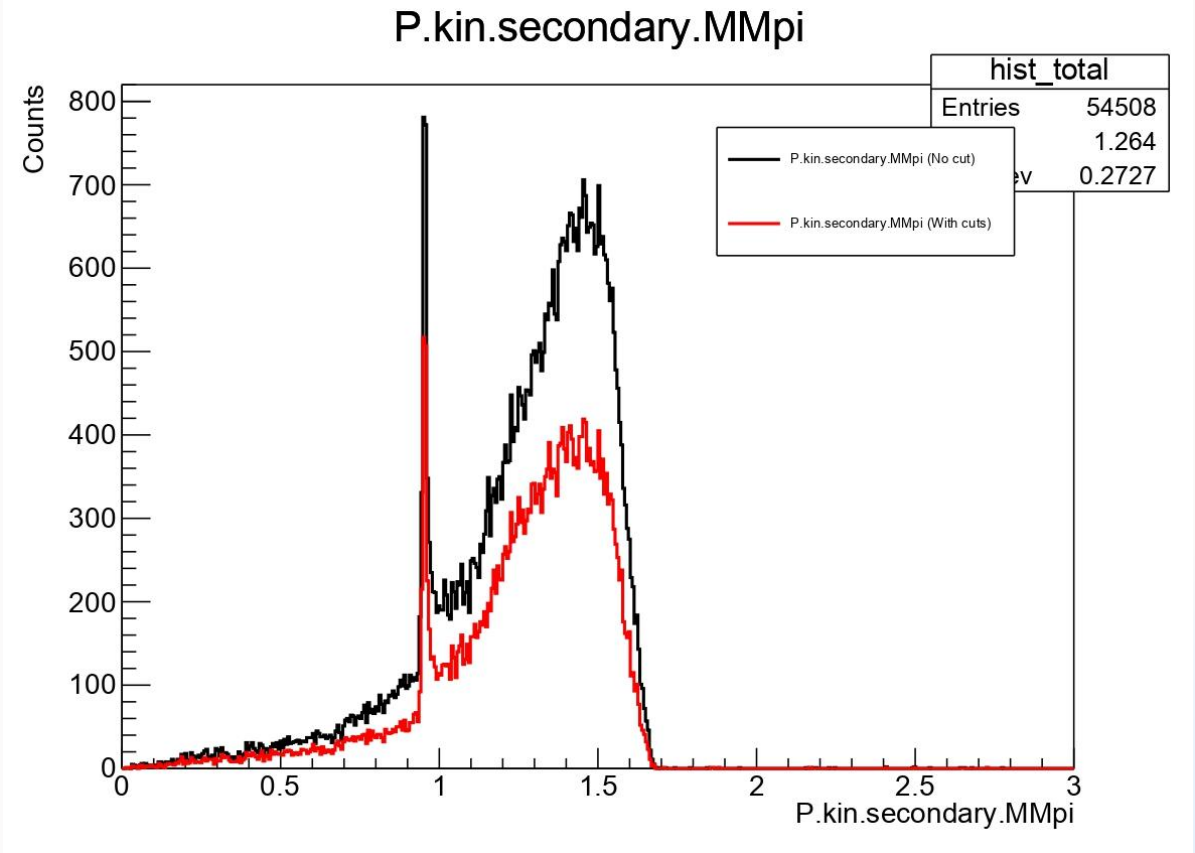
P_hgcer_npeSum > 2



P_aero_npeSum> 2

Missing Mass - Initial Cuts

Run = 14604

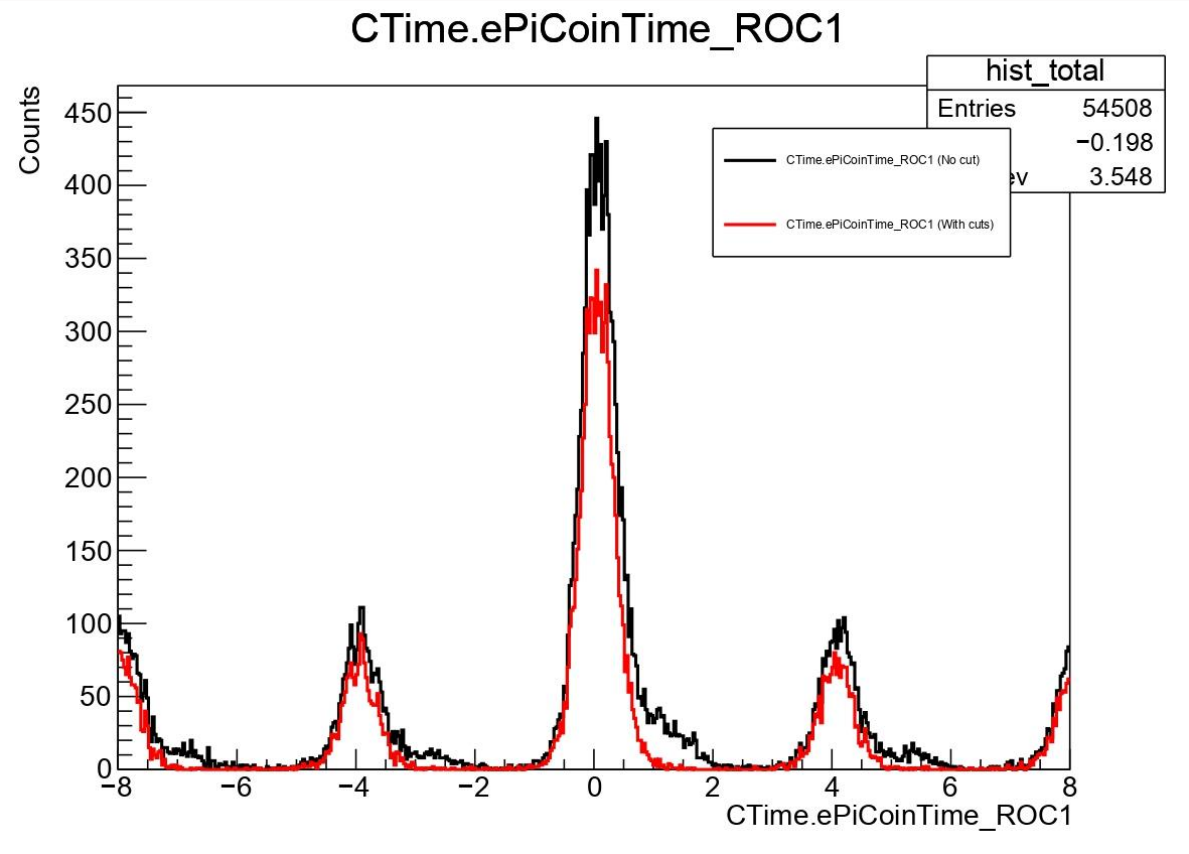


Coincidence time - Initial Cuts

Coin_Cut =

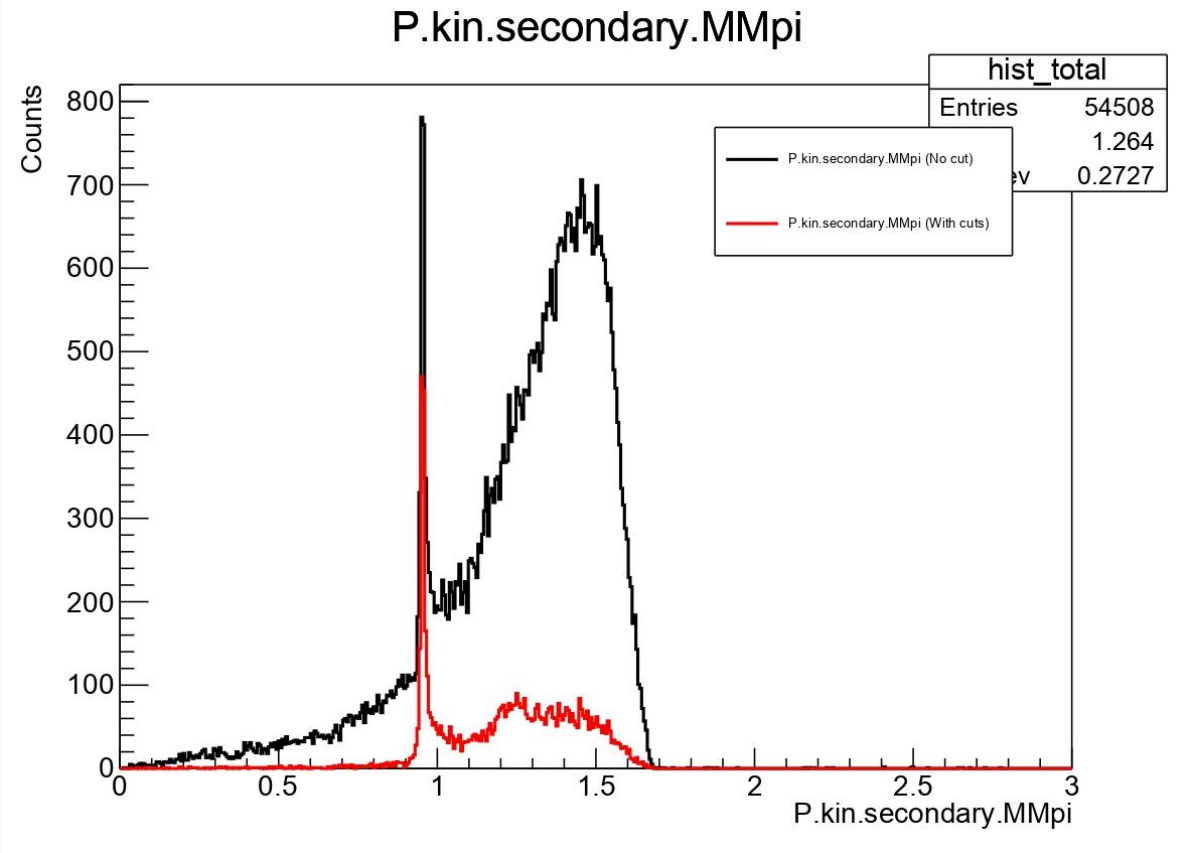
-2 < CTime_ePiCoinTime_ROC1 < 2

Run = 14604



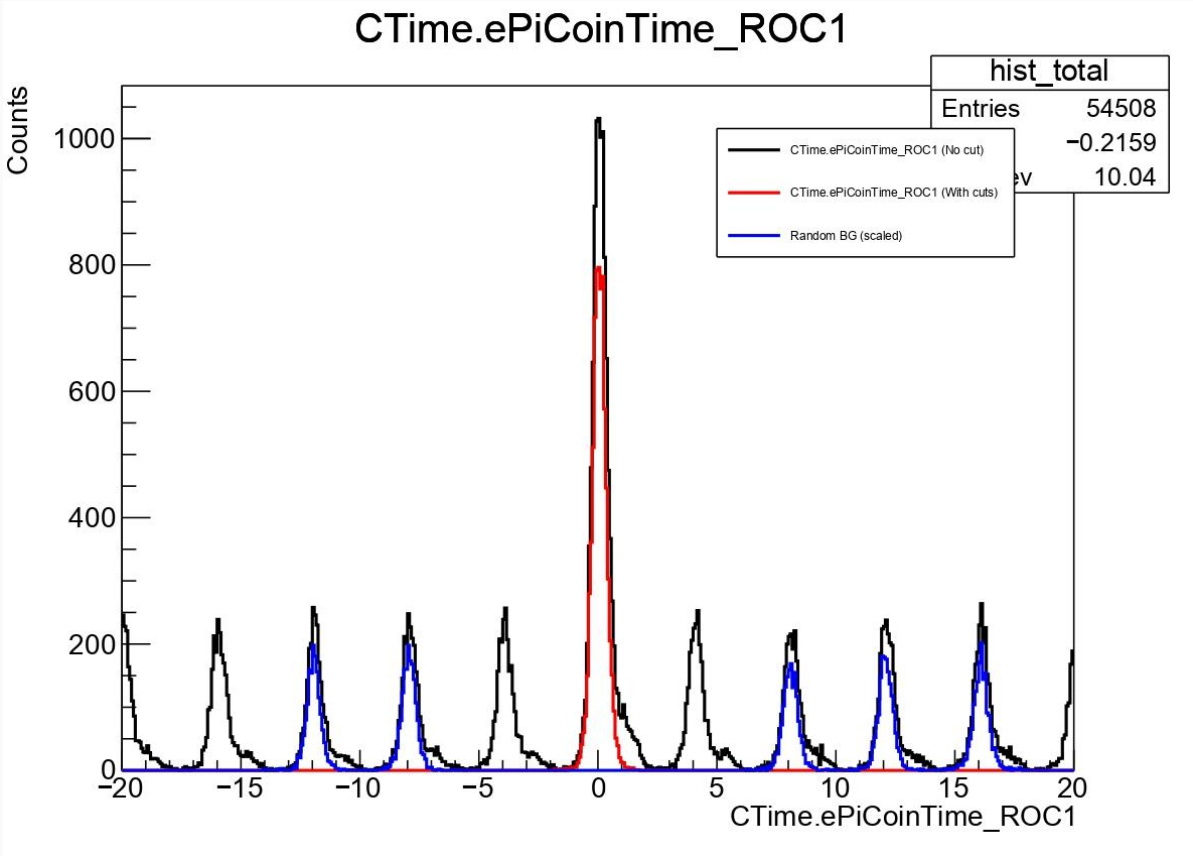
Missing Mass - Initial Cuts + coin cut (-2 to 2 ns)

Run = 14604



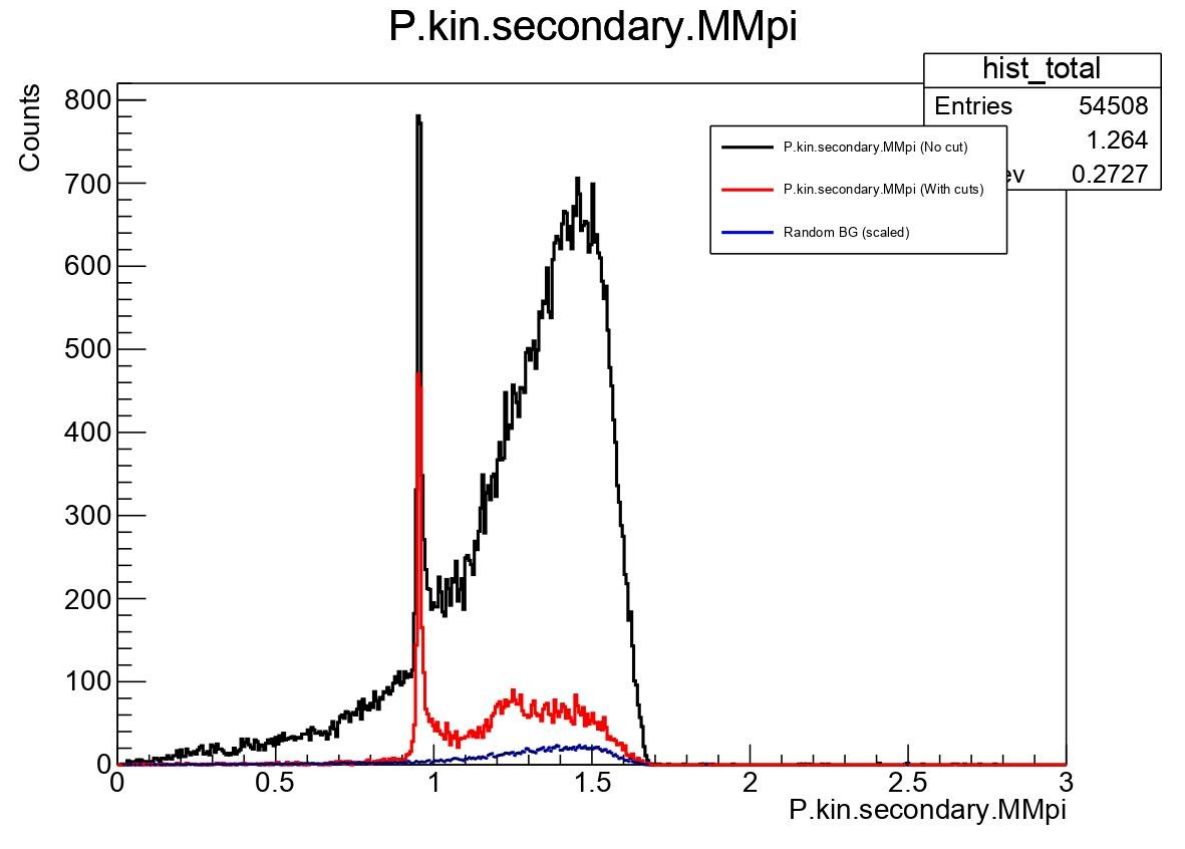
Coincidence time - Background

Run = 14604



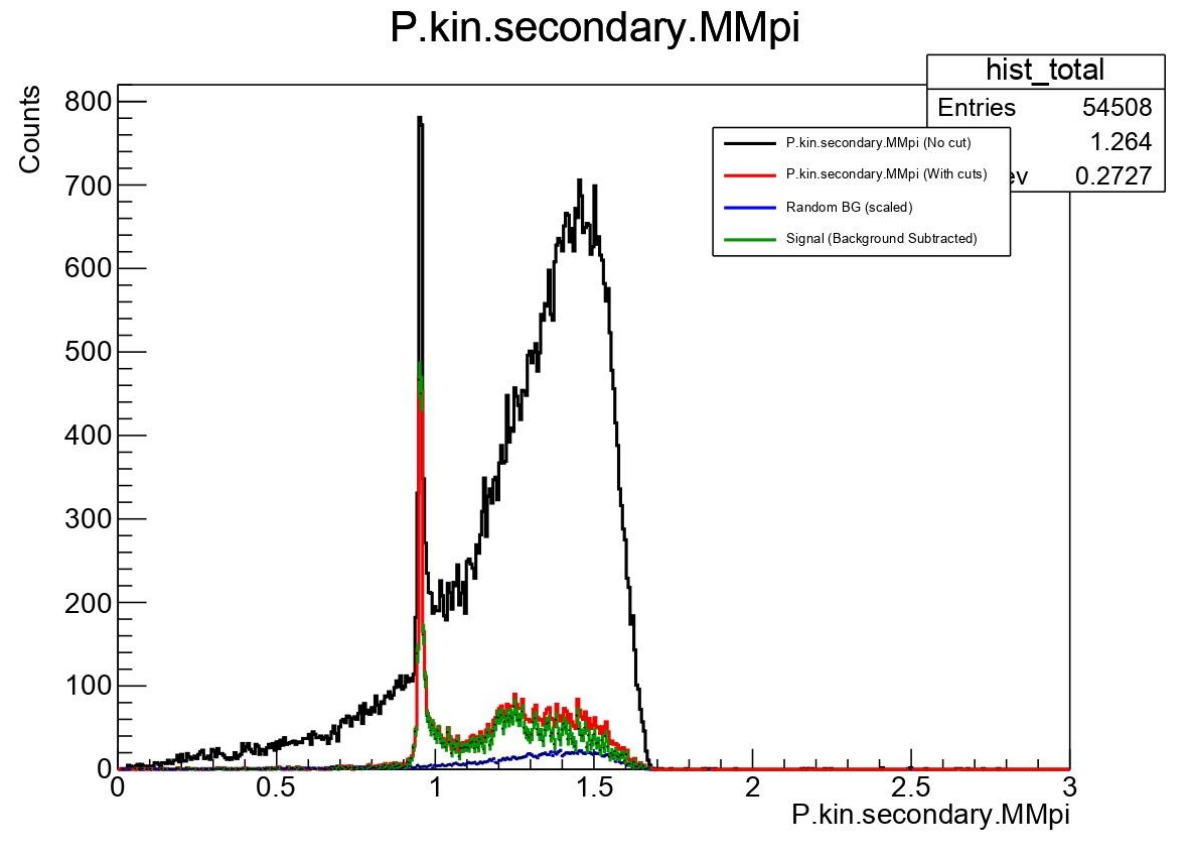
Missing Mass - Initial_Cuts + coin_cut + Background (scaled)

Run = 14604



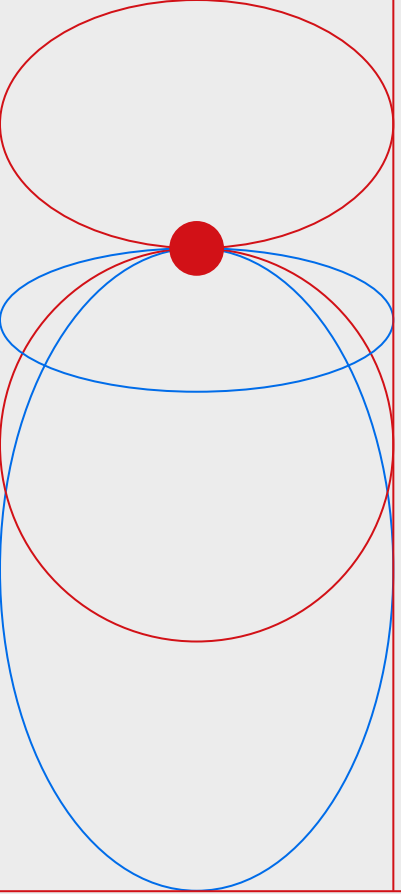
Missing Mass - Initial_Cuts + coin_cut + Background subtracted

Run = 14604



Outlook:

1. Need to check the cointime Offset and RF time cut.
2. Also need to check the MM offset.



Thank you