



Pion Electroproduction from the LD2 Data

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Random coincidences Subtraction

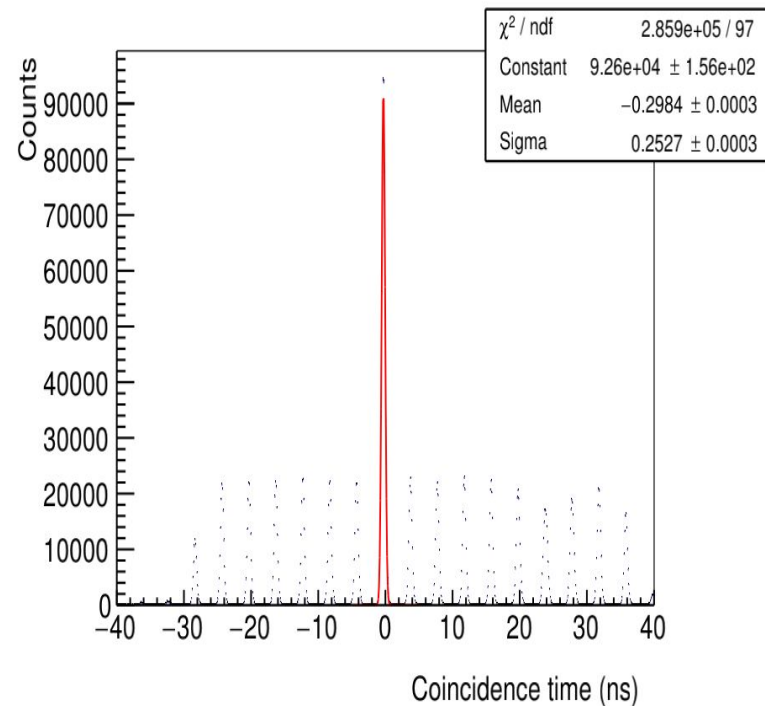
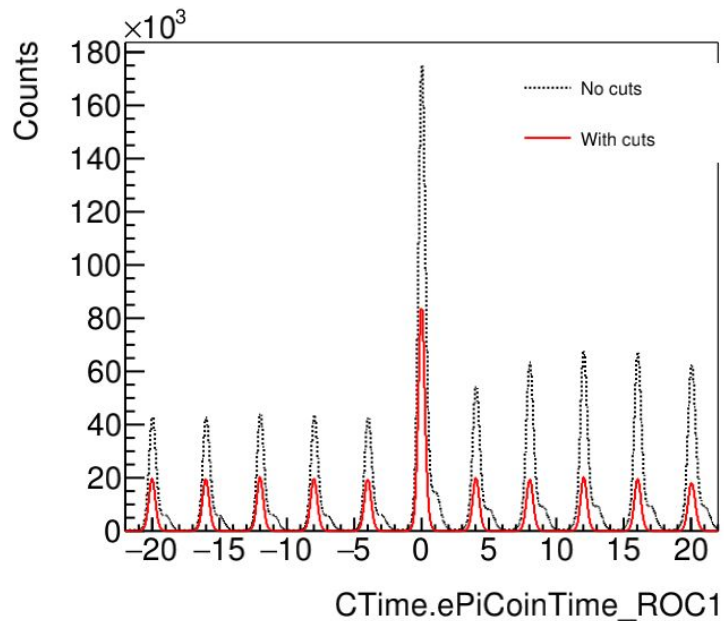


- Sitting: $Q^2=1.60$, $W=3.08$, SHMS LD2+ Right angle
- Run list:
{11992,11993,11994,11995,11996,11997,11998,11999,12000,12001,12002,12003,12017,12018,12019,12020,12021}

Initial PID Cuts

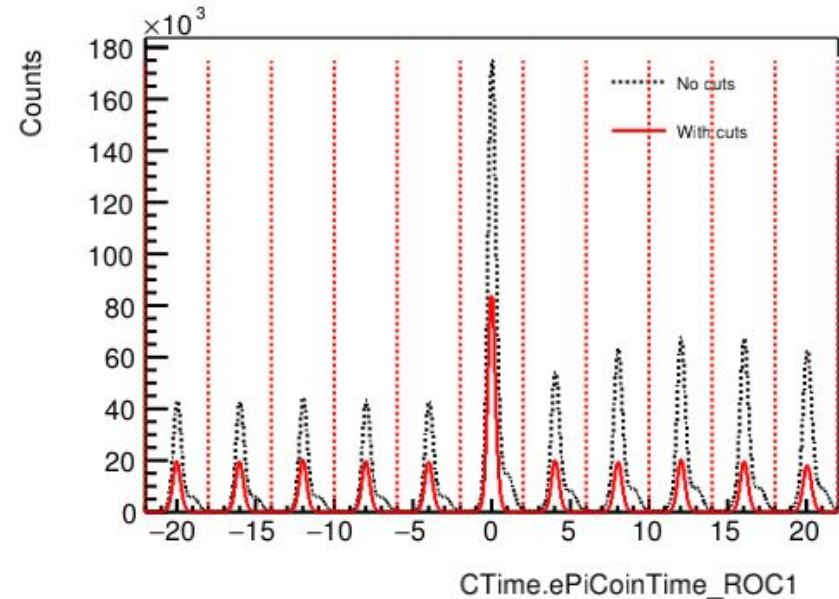
- HMS: $H.cal > 0.75$, $H.cer > 2.5$
- SHMS: $P.ngcer < 10.0$, $P.hgcer > 0.3$, $P.aero > 0.2$
- Timing: $1.8 < RF < 3.5$, $|CoinTime| < 2.0$

CoinTime offset



Random coincidences Subtraction

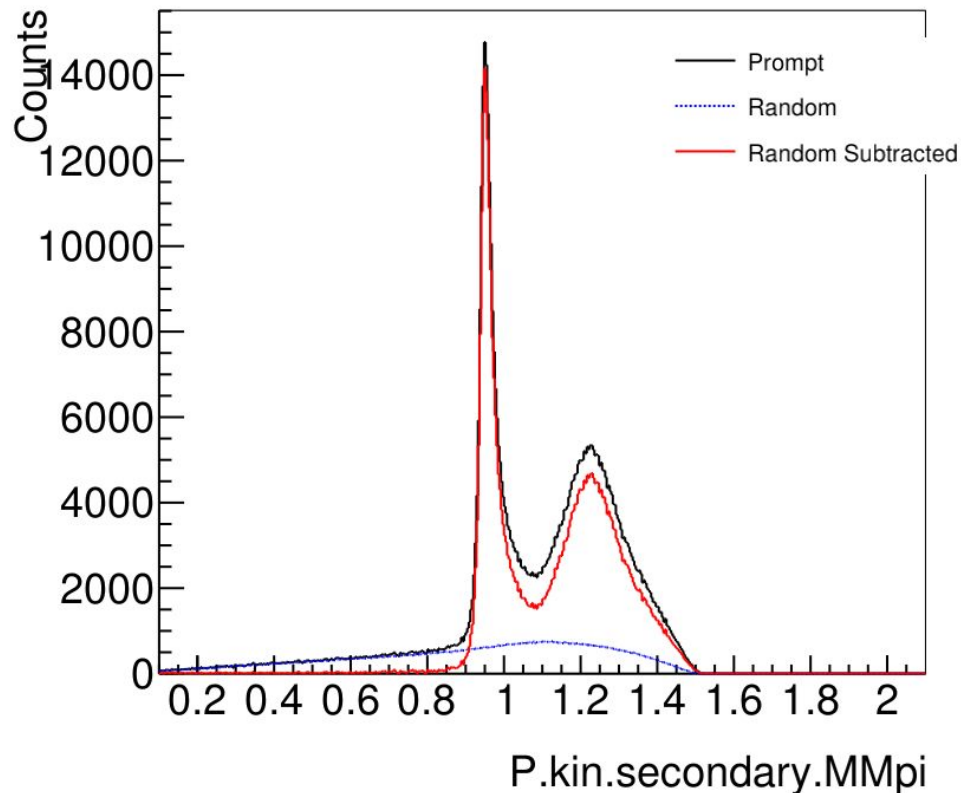
- Windows of the random peaks are selected in the range: +2 to +22 ns && -2 to -22 ns
- Each random window has a fixed width of 4 ns.
- A total of 10 random windows are used (5 on each side of the prompt).
- The accidental background is estimated from these windows and scaled by the number of windows, then subtracted from the prompt spectrum.



Missing Mass (Accep cuts + PID cuts)

Initial PID Cuts

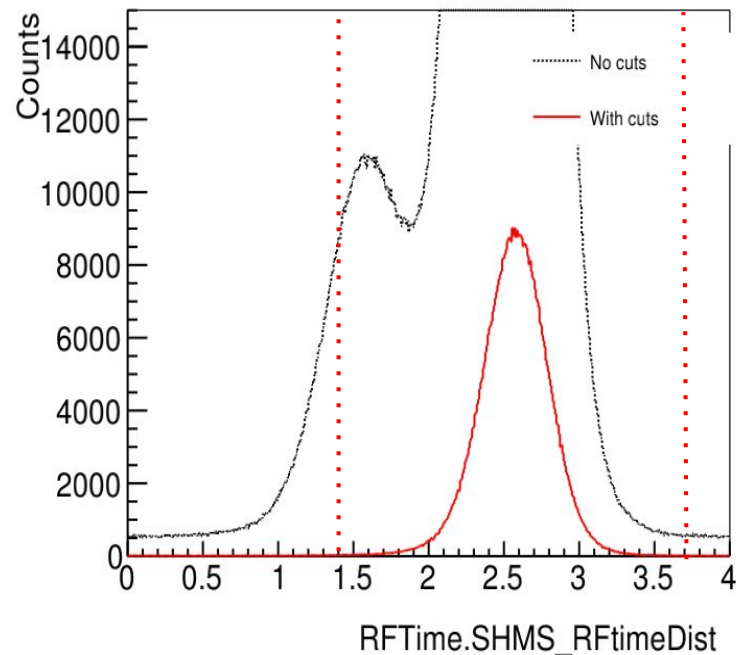
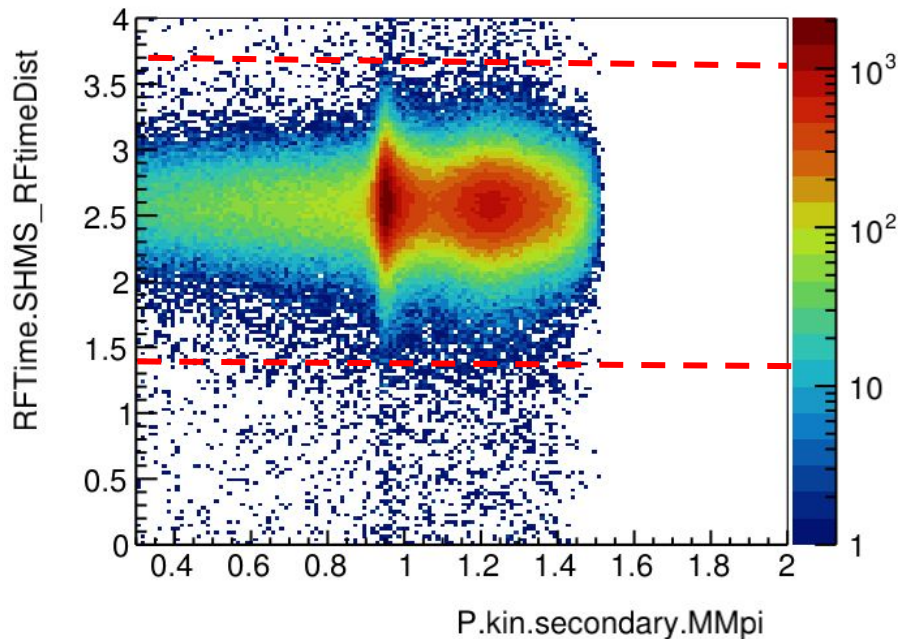
- HMS: $H.cal > 0.75$, $H.cer > 2.5$
- SHMS: $P.ngcer < 10.0$,
 $P.hgcer > 0.3$, $P.aero > 0.2$
- Timing: $1.8 < RF < 3.5$,
 $|CoinTime| < 2.0$



RF_time (Accep cuts + PID cuts)

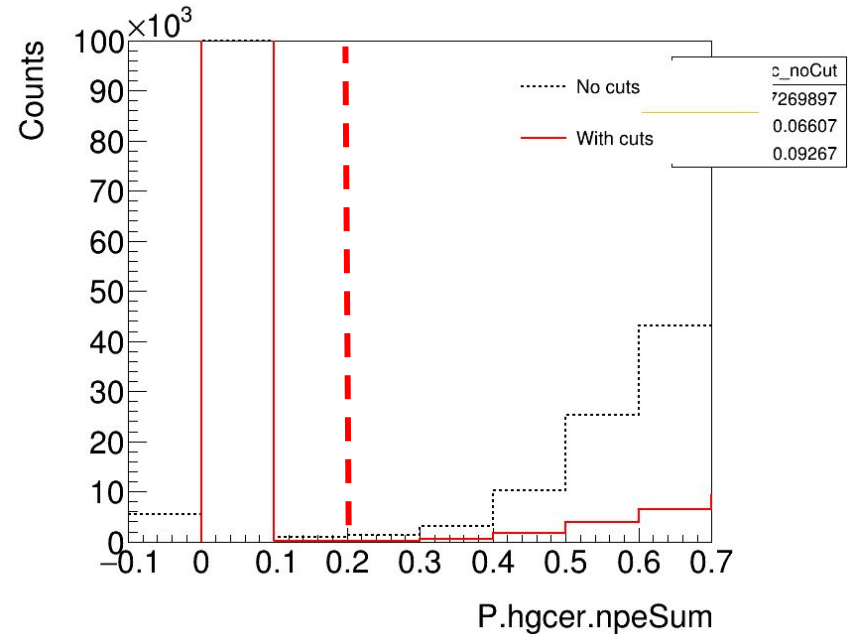
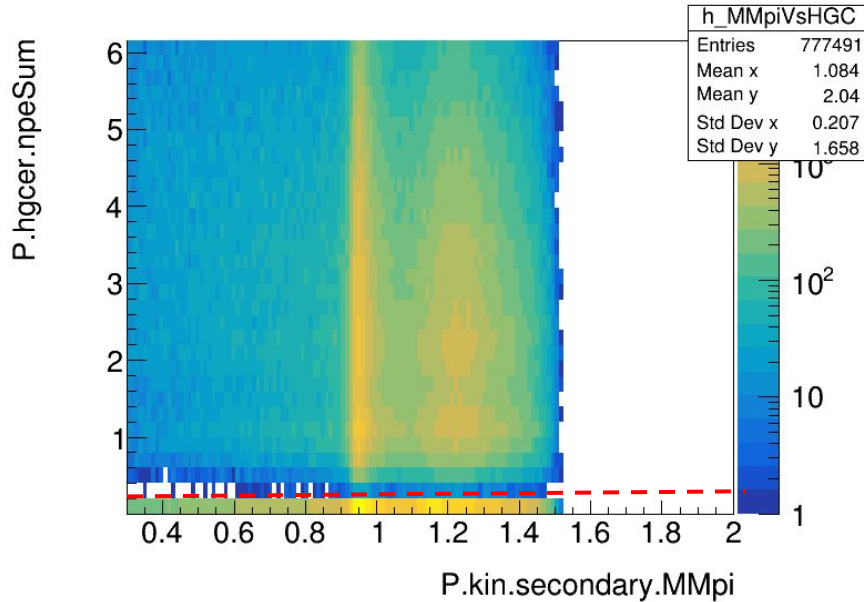


Change RF_Cut to (1.4-3.7)

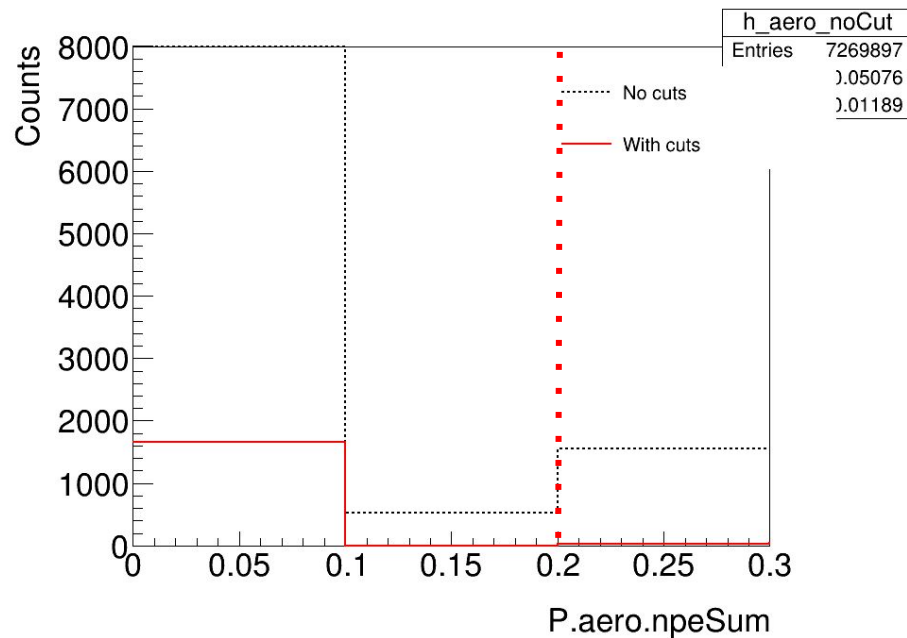
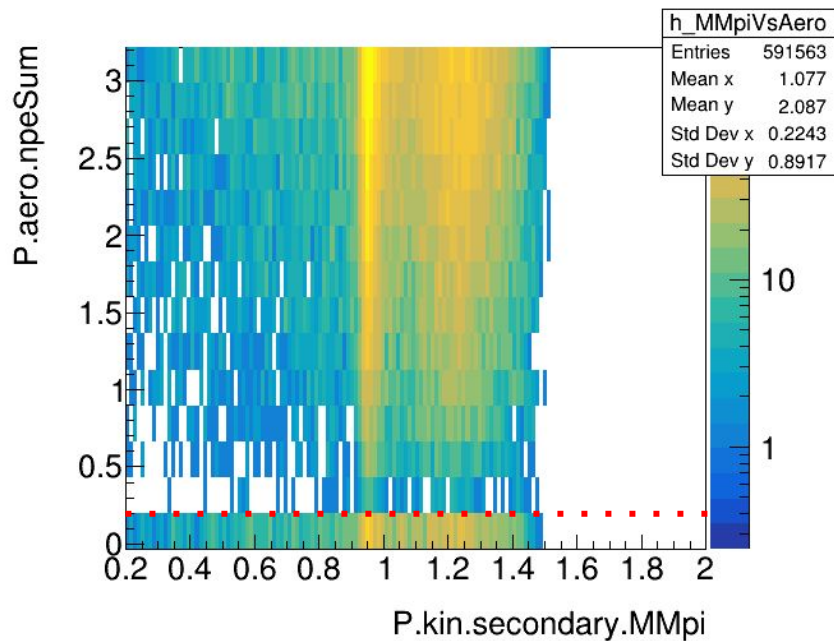


SHMS HGC (Accep cuts + PID cuts)

Change hgc_Cut to (>0.2)

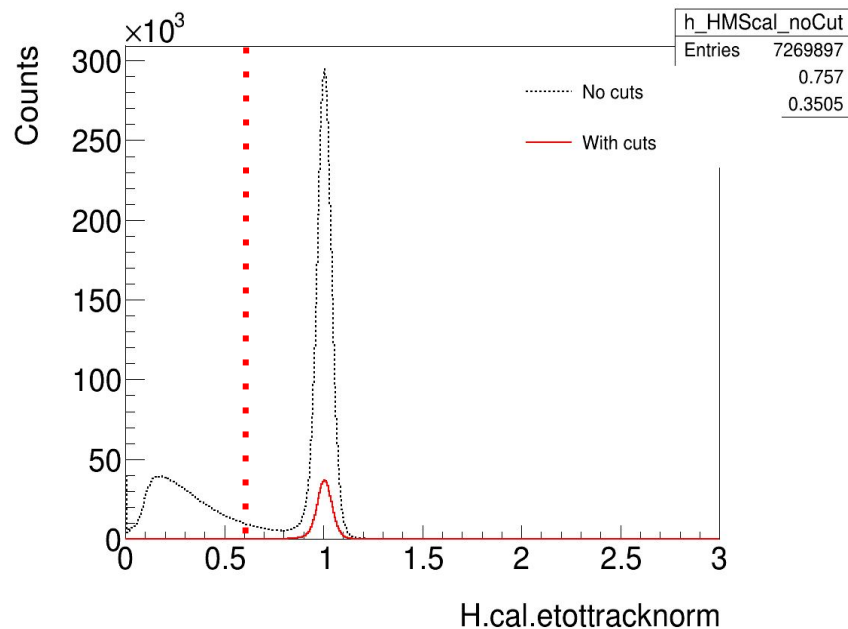
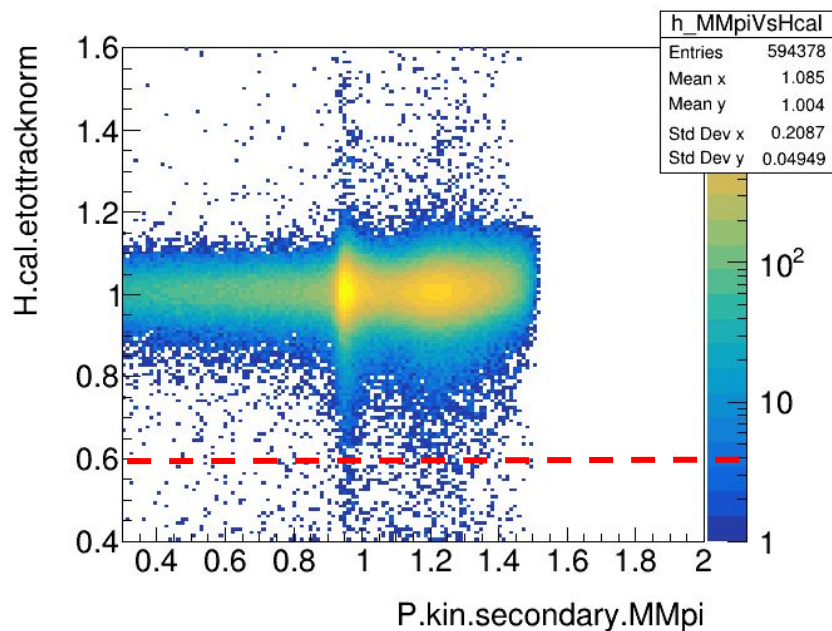


Aerogel (Accep cuts + PID cuts)



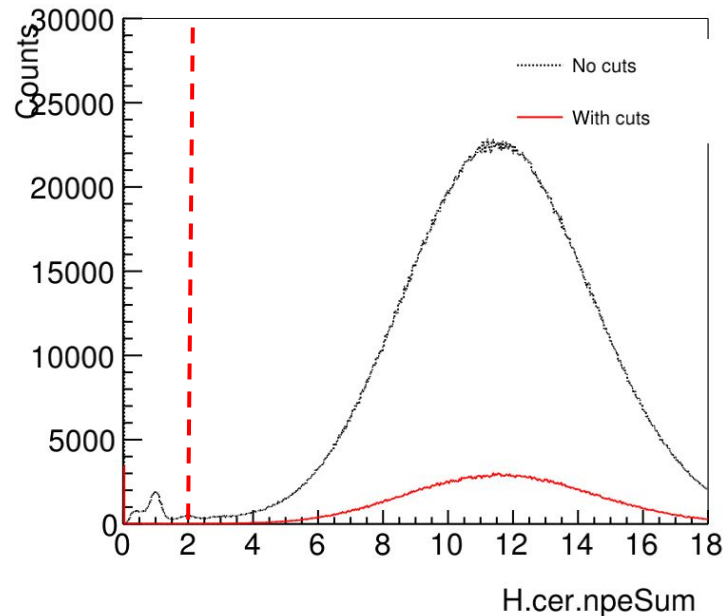
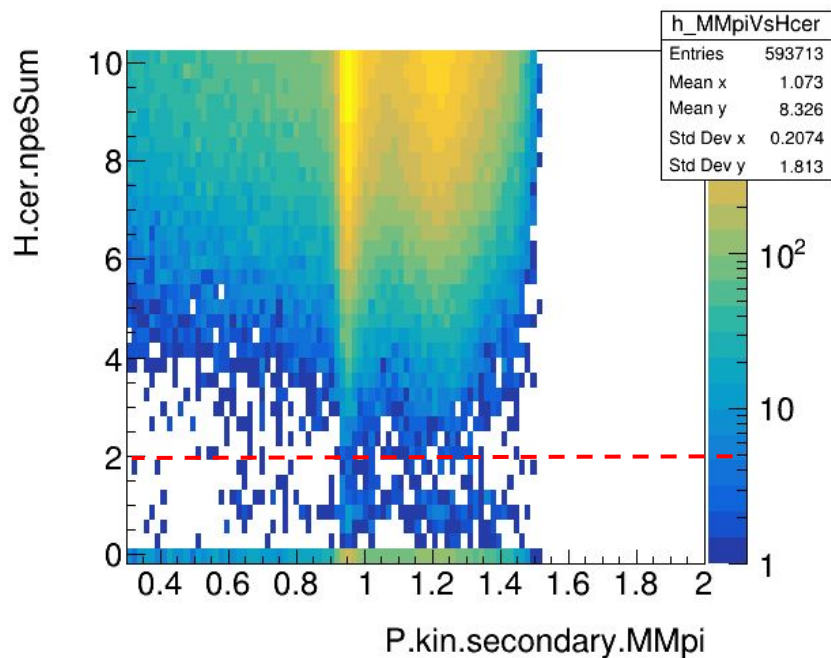
HMS Cal (Accep cuts + PID cuts)

HMS Cal (>0.6)



HMS Cerenkov (Accept cuts + PID cuts)

Change HCer_Cut to (>2.0)



Updated PID Cuts



- HMS: $H.cal > 0.6$, $H.cer > 2.0$
- SHMS: $P.ngcer < 10.0$, $P.hgcer > 0.2$, $P.aero > 0.2$
- Timing: $1.4 < RF < 3.7$, $|CoinTime| < 2.0$

Missing Mass with Updated PID Cuts+ Random Subt

