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# HEEP Studies

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- Had some issues with Itsep package.
- Merge cut files for PionLT 2021 and PionLT 2022.
- Updated symlinks to PionLT cut files.
- Added ngcer variables to Itsep package. Now its working fine.
- Updated RF offset for HeePCoin data and replayed it again.
- Updated HeeP Coin scripts.
- Got plots for PID Study.

# HEEP Study

PionLT Experiment

Beam Energy (GeV)	Setting (HeePCoin)	Run Numbers
9.177	HMS_p = -3.738, HMS_theta = 31.645, SHMS_p = 6.265, SHMS_theta = 18.125	11846 - 11879
5.986	HMS_p = -3.271, HMS_theta = 29.170, SHMS_p = 3.493, SHMS_theta = 27.495	13058 – 13062, 13128
9.876	HMS_p = -5.366, HMS_theta = 23.050, SHMS_p = 5.422, SHMS_theta = 23.050	13164 - 13169
7.937	HMS_p = -3.280, HMS_theta = 33.645, SHMS_p = 5.512, SHMS_theta = 19.265	14589 - 14600
10.549	HMS_p = -5.878, HMS_theta = 21.670, SHMS_p = 5.539, SHMS_theta = 23.110	14986 - 14993
8.479	HMS_p = -5.587, HMS_theta = 19.560, SHMS_p = 3.731, SHMS_theta = 30.020	16162 – 16165
6.395	HMS_p = -4.752, HMS_theta = 18.595, SHMS_p = 2.412, SHMS_theta = 37.970	16277 – 16279
6.395	HMS_p = -4.391, HMS_theta = 21.095, SHMS_p = 2.792, SHMS_theta = 34.470	16280 – 16282
6.395	HMS_p = -3.014, HMS_theta = 33.350, SHMS_p = 4.220, SHMS_theta = 23.115	16512 - 16517

- PID cuts for HeeP data.

### HMS PID Cuts (Electrons)

$$-8 > H\_gtr\_dp > 8$$

$$HMS\_Cal\_etotracknorm > 0.7$$

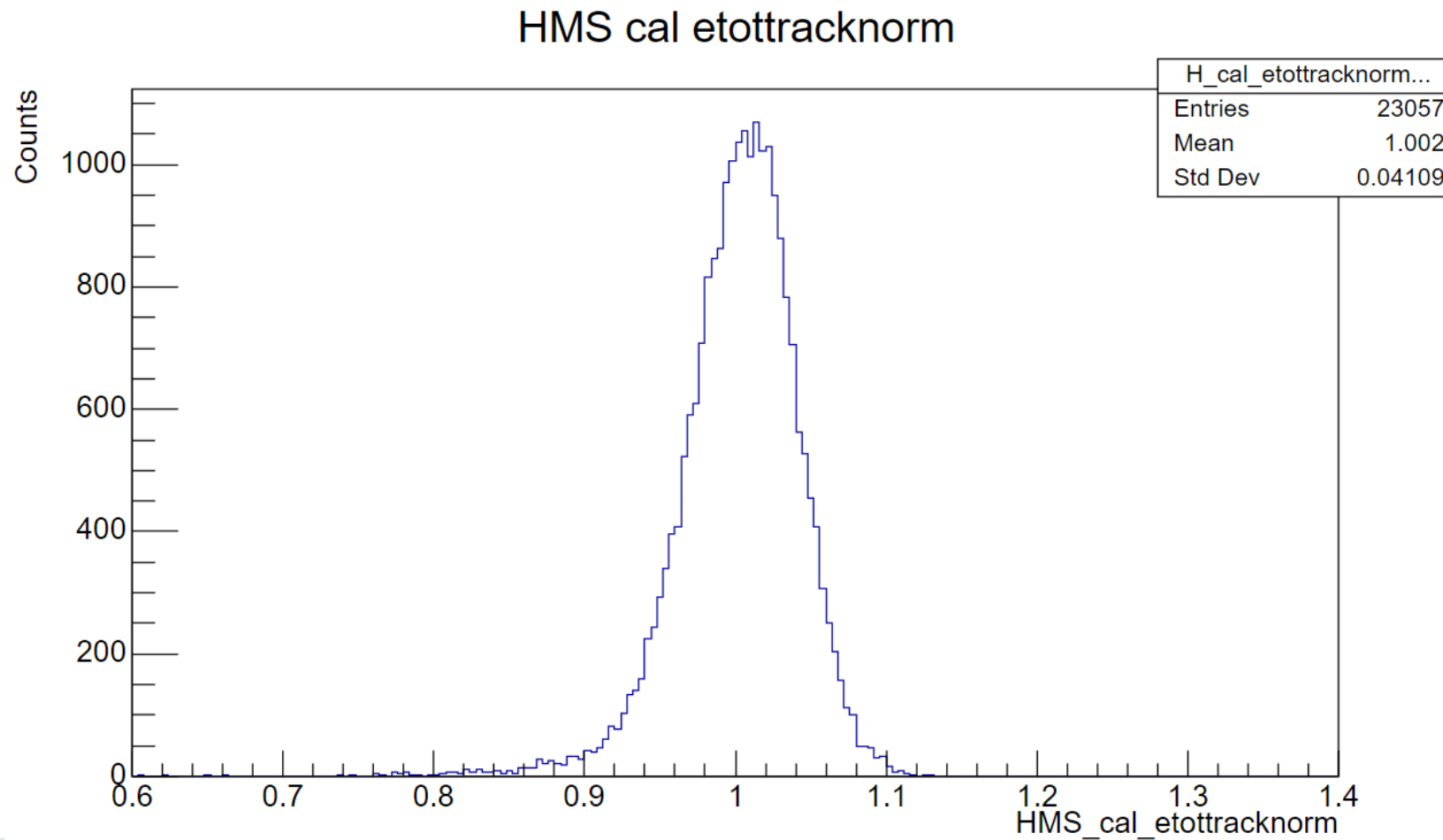
$$H\_Cer\_npeSum > 1.5$$

### SHMS PID Cuts (Protons)

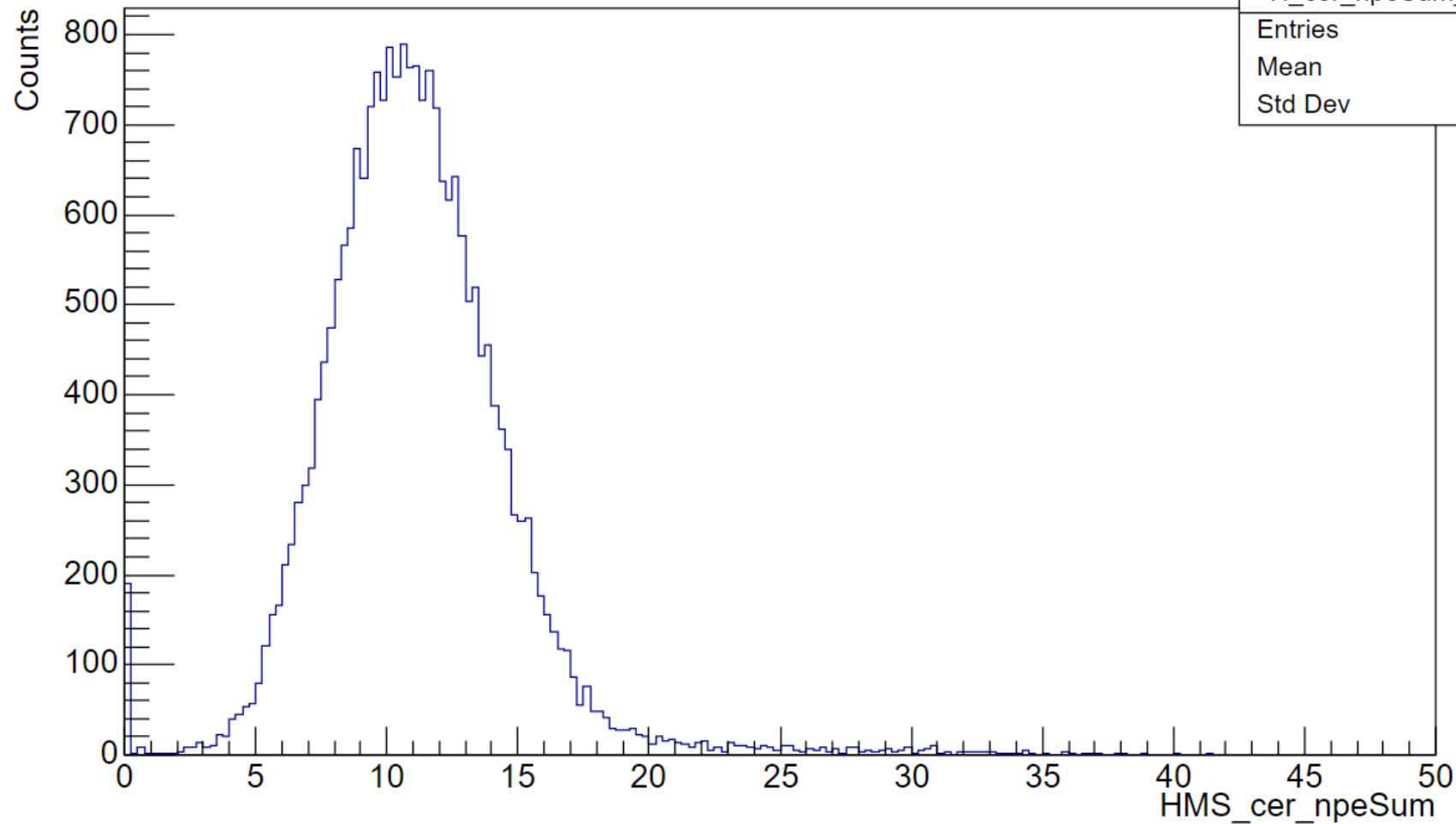
$$-10 > P\_gtr\_dp > 20$$

### Coin Time Cut

$$Ctime\_epCoinTime\_ROC1 - \text{Prompt Peak}$$



### HMS cer npeSum



### Electron-Proton CTime

