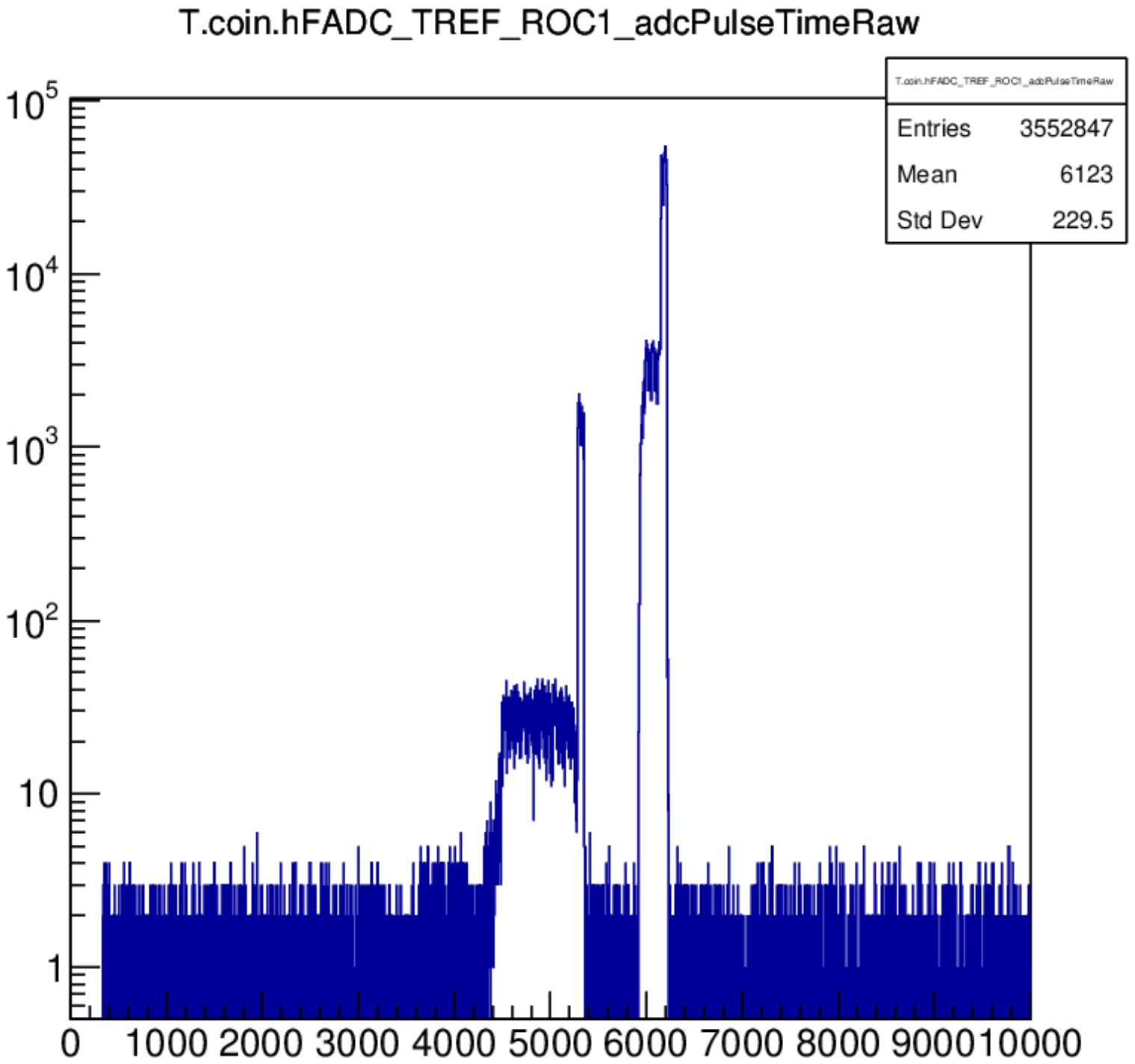
Reference Time Cuts Updates

- I have finished looking into the reference times
- HMS ¾ trigger seems like we can get away without making a new set of cuts
- I emailed Carlos Yero to clarify which detector variables should be used for coin variables, he clarified that currently only SHMS channel is used.
- He also suggested a script he had made to set the detector time cuts
- The hTref1 and 2 give trig and hodo tdc ref times
- DCREF 1-5 for HMS (1-8 for SHMS) collectively give the DC adc ref times

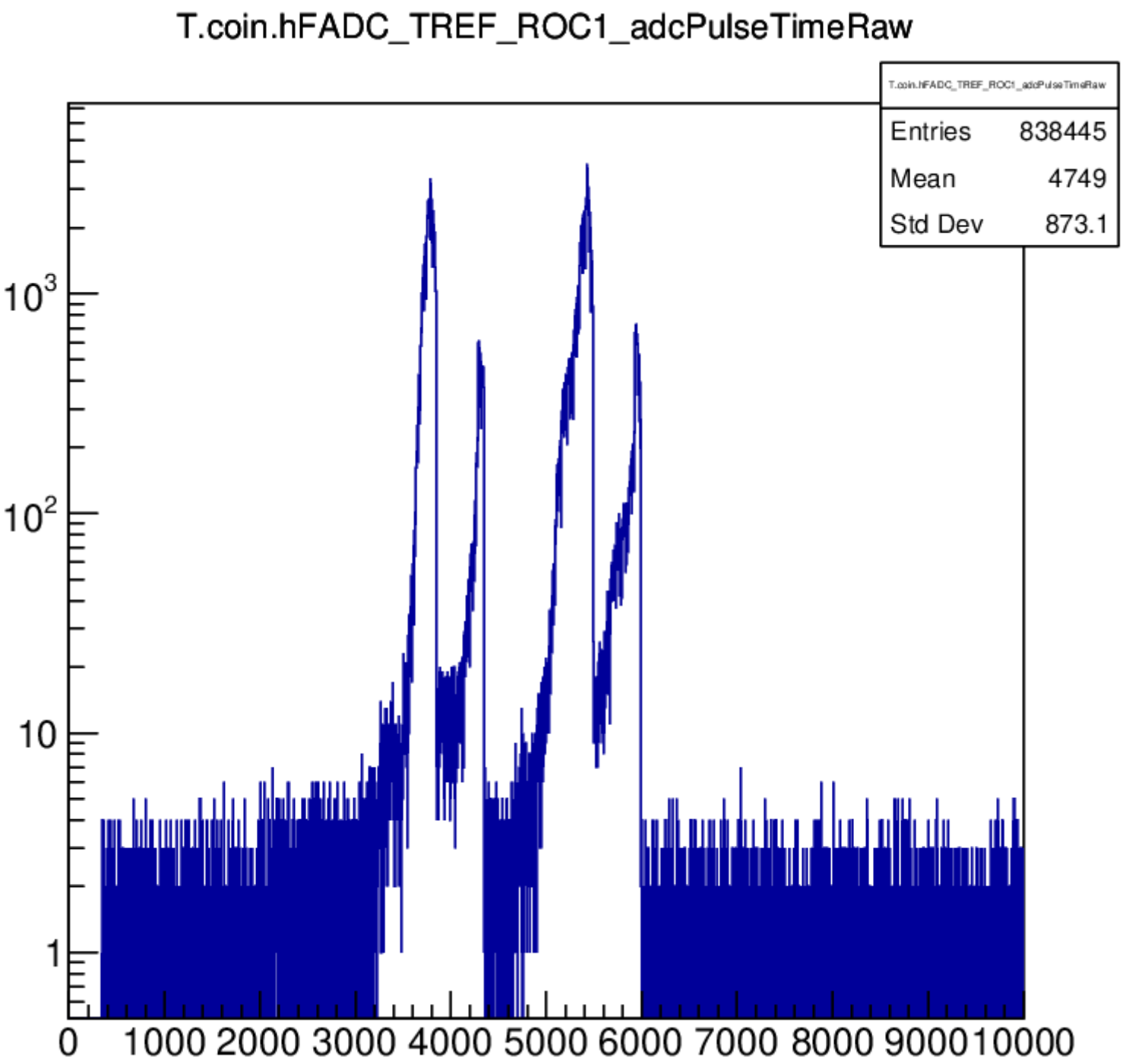
16408

- Prod
- 6.395 GeV
- HMS ¾ run



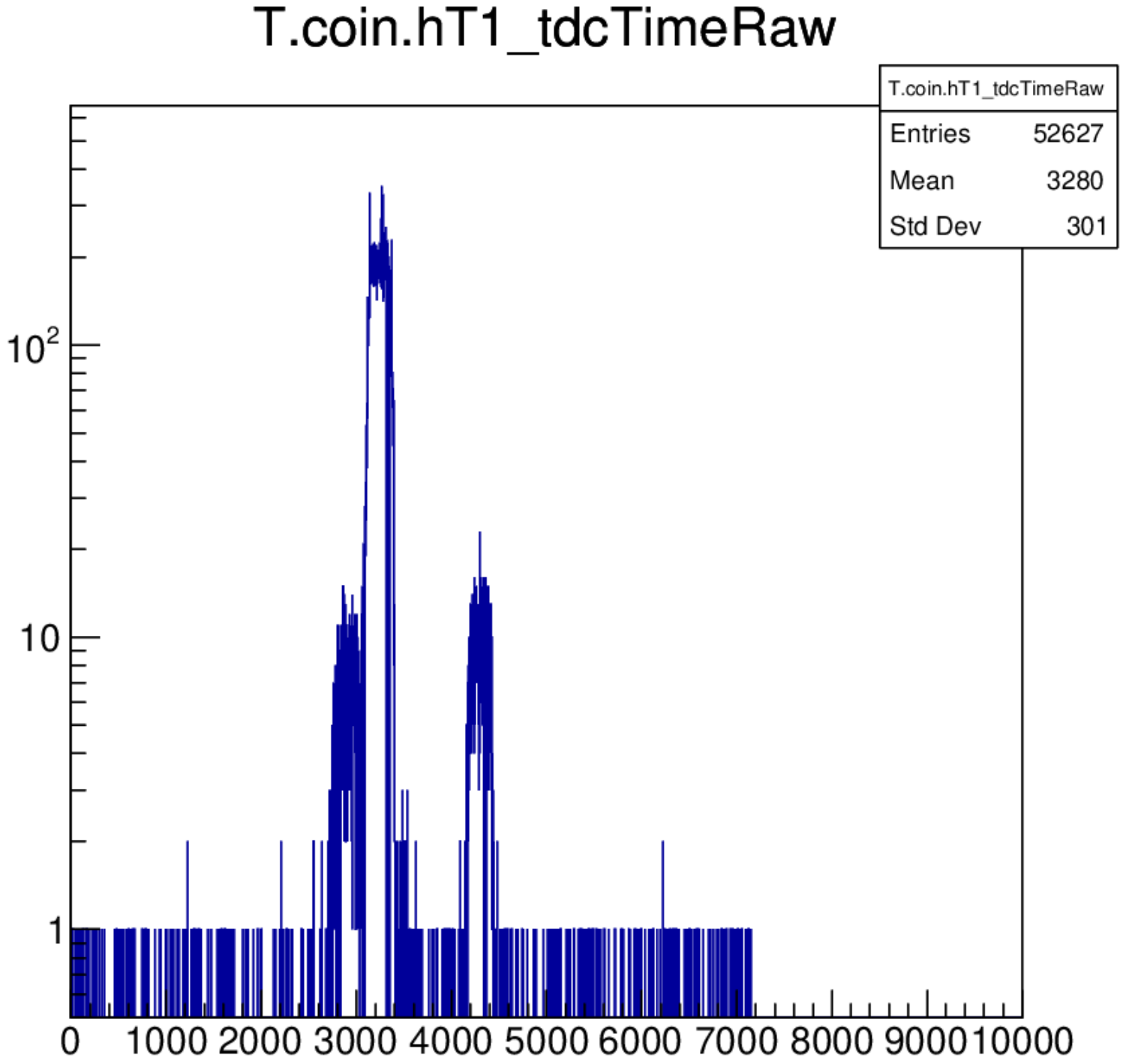
14666

- Prod Run
- 7.937 GeV
- Provided by reference



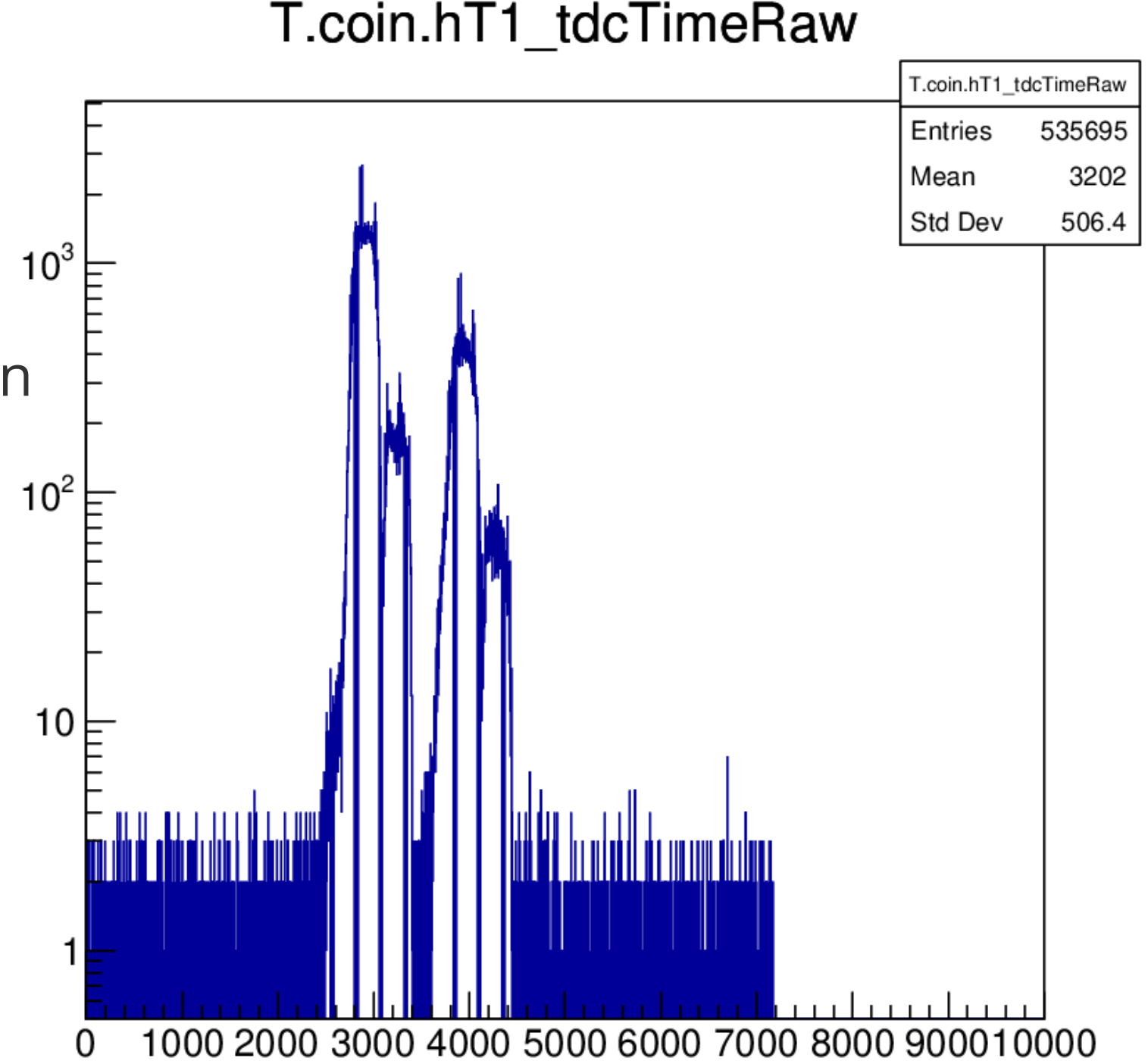
11829

- HeeP coin
- Fourth run of 2021 Fall



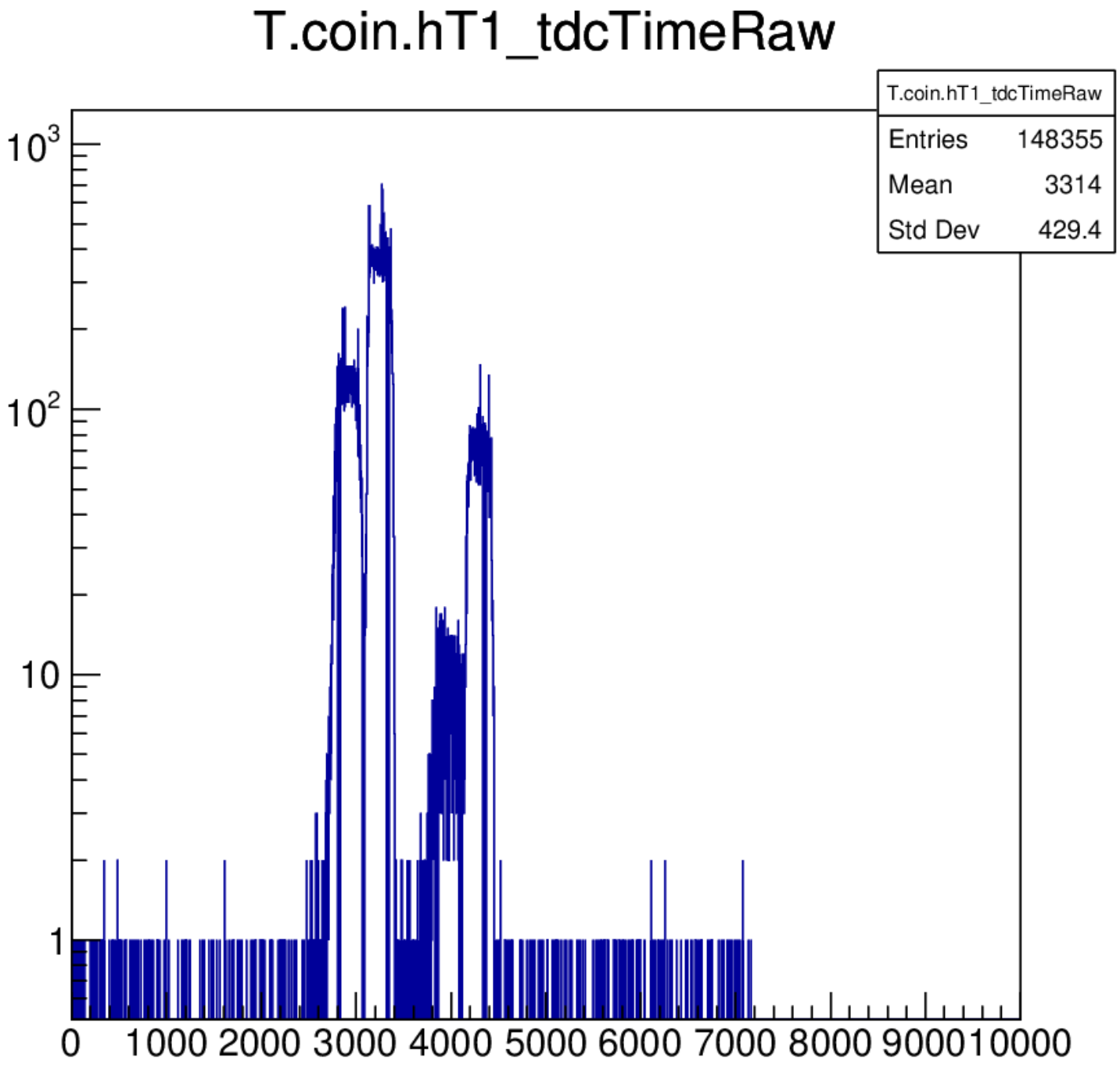
12493

- Production run
- 9.177 GeV



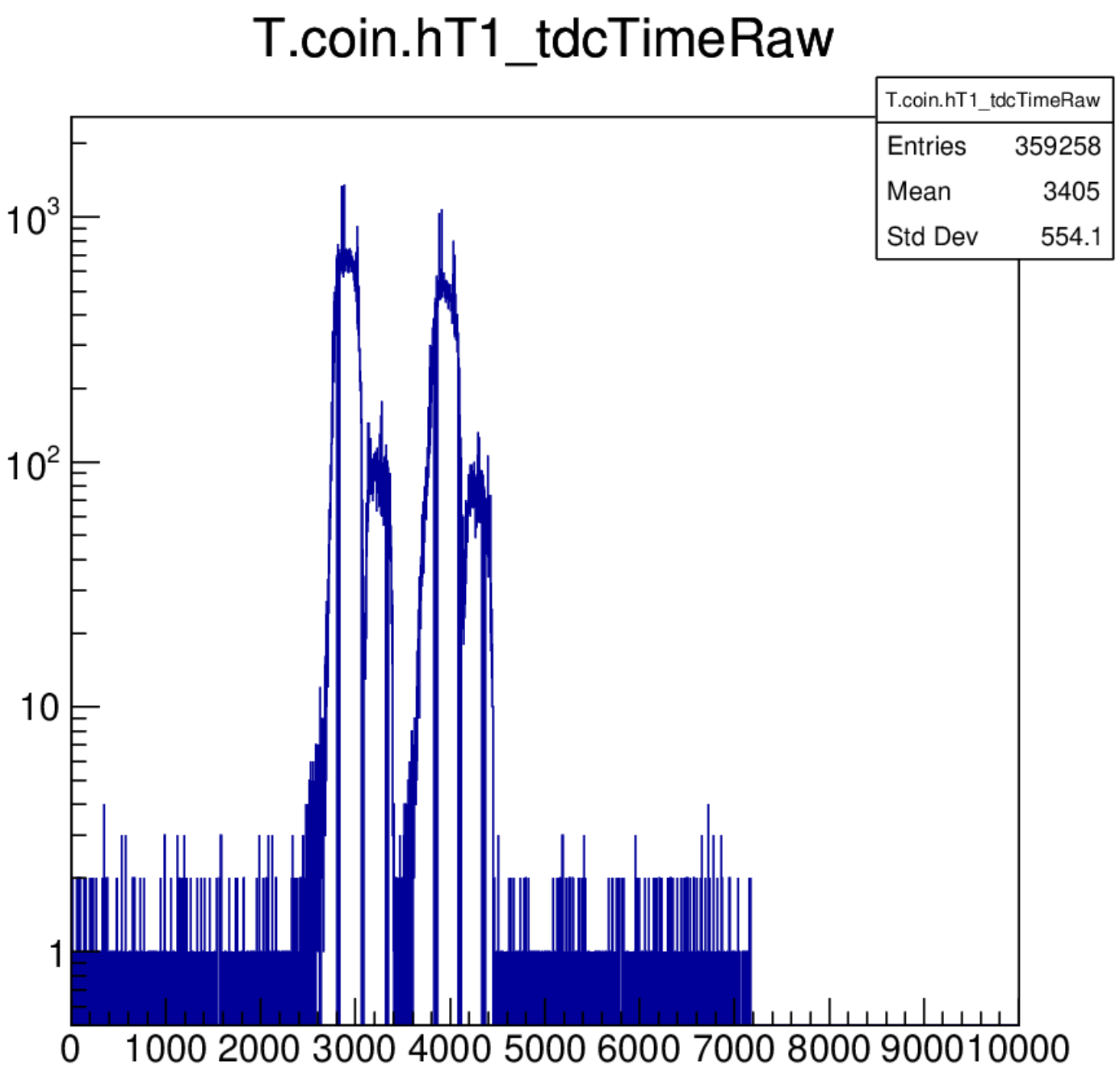
13090

- Prod Run
- 5.985 GeV



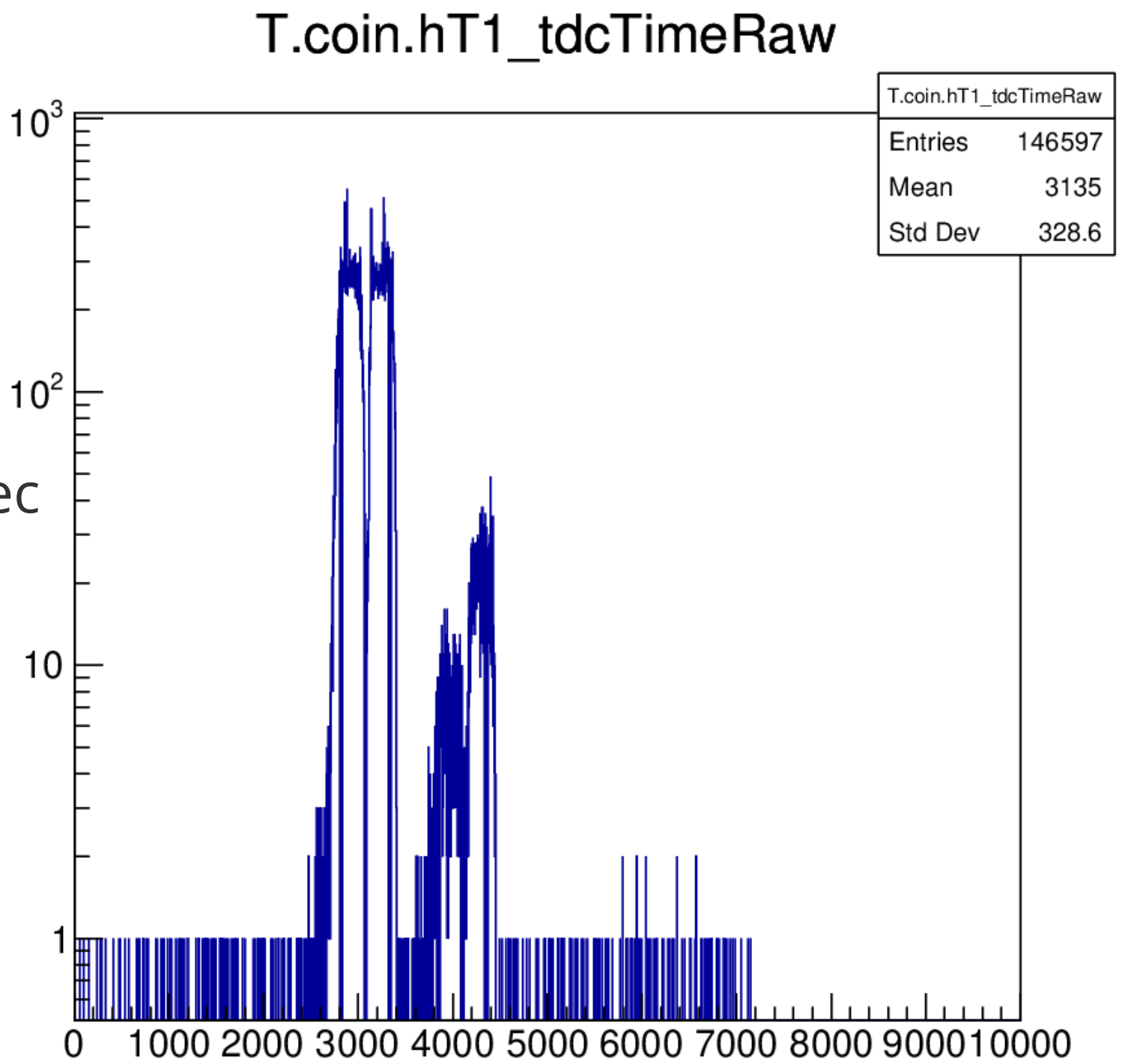
13843

- Prod Run
- 7.937 GeV



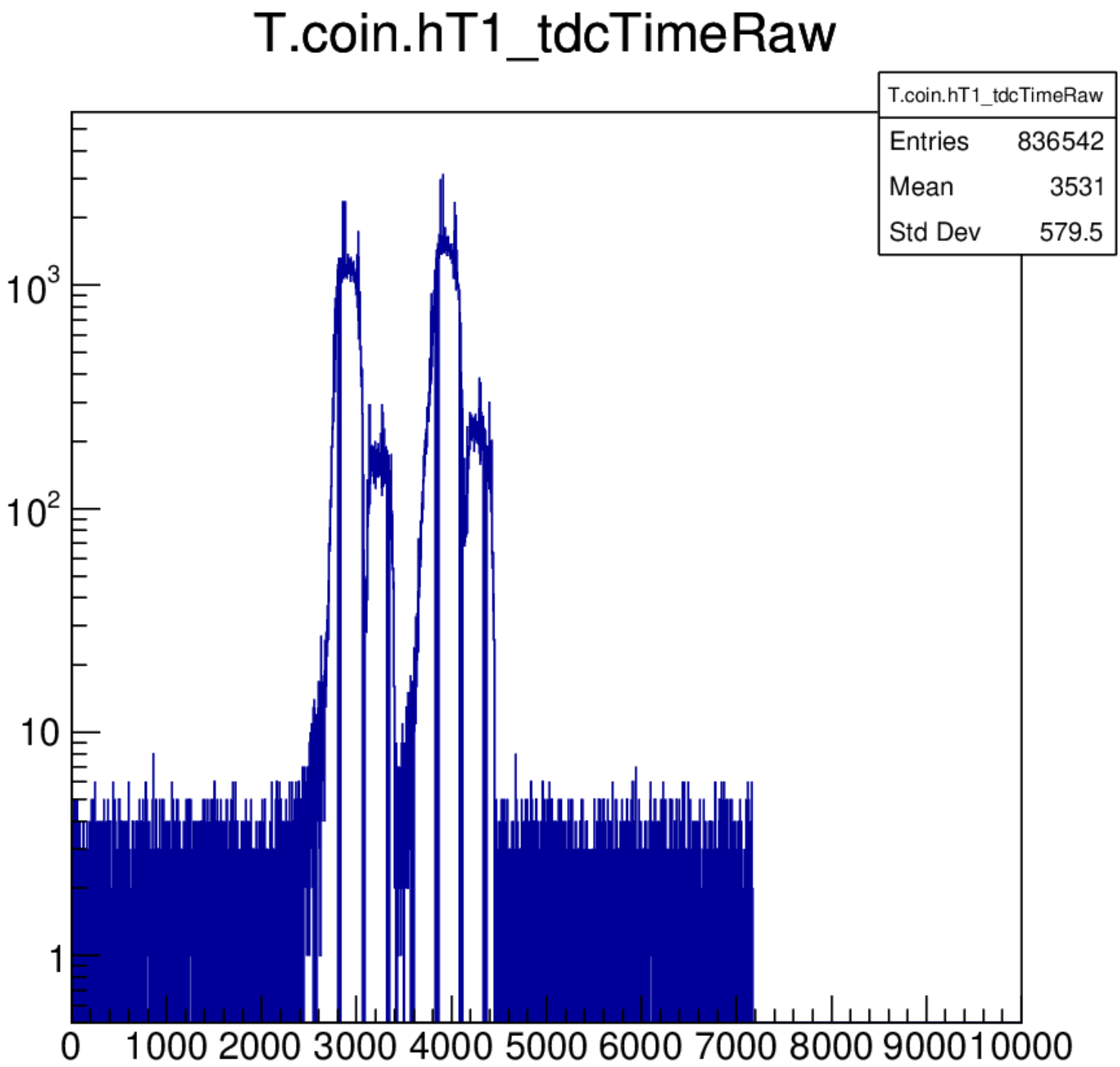
14109

- Prod Run
- 7.937 GeV
- Last run of Dec 2021



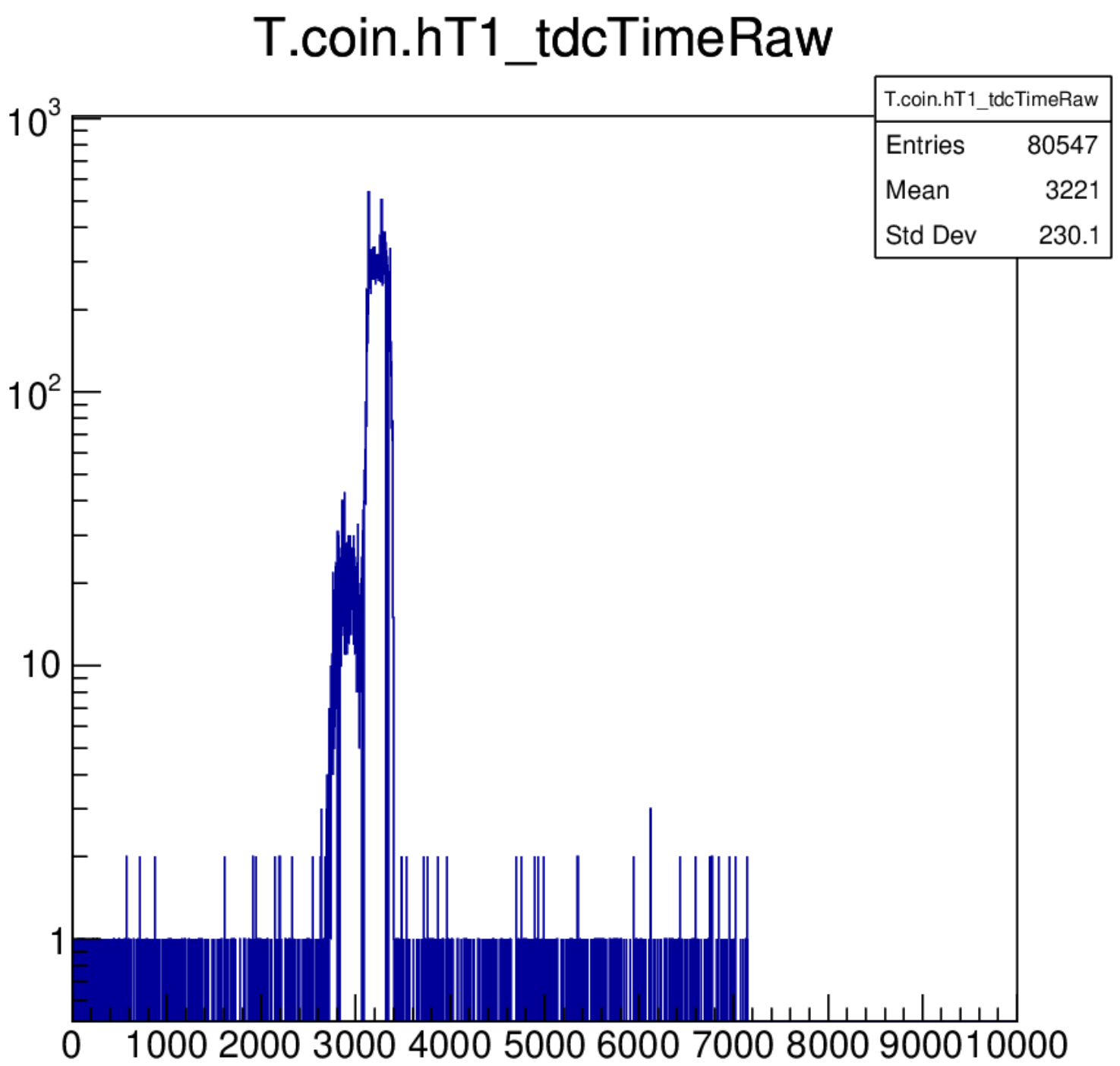
14666

- Prod Run
- 7.937 GeV



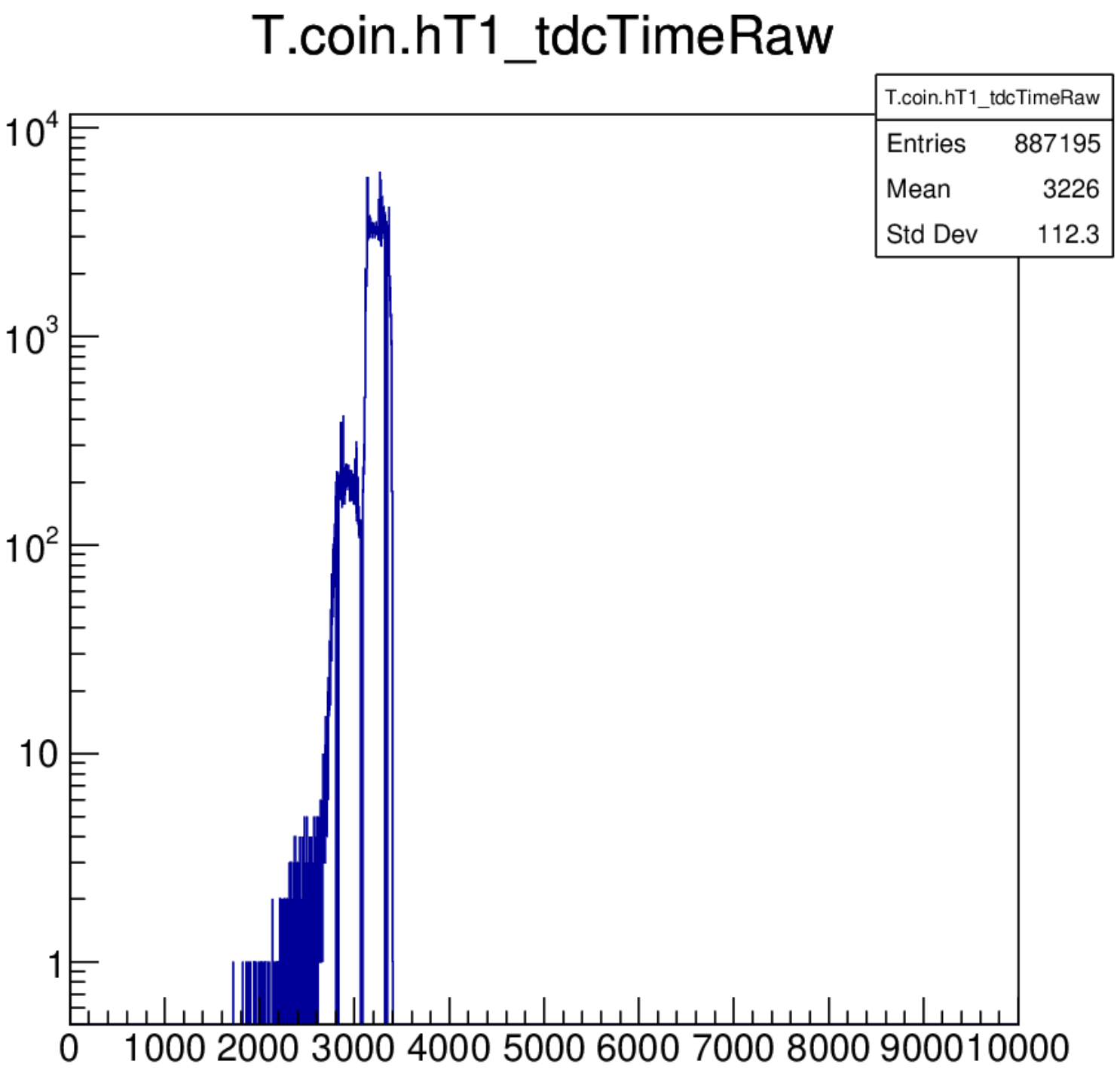
16199

- HeeP Singles
- 8.479 GeV



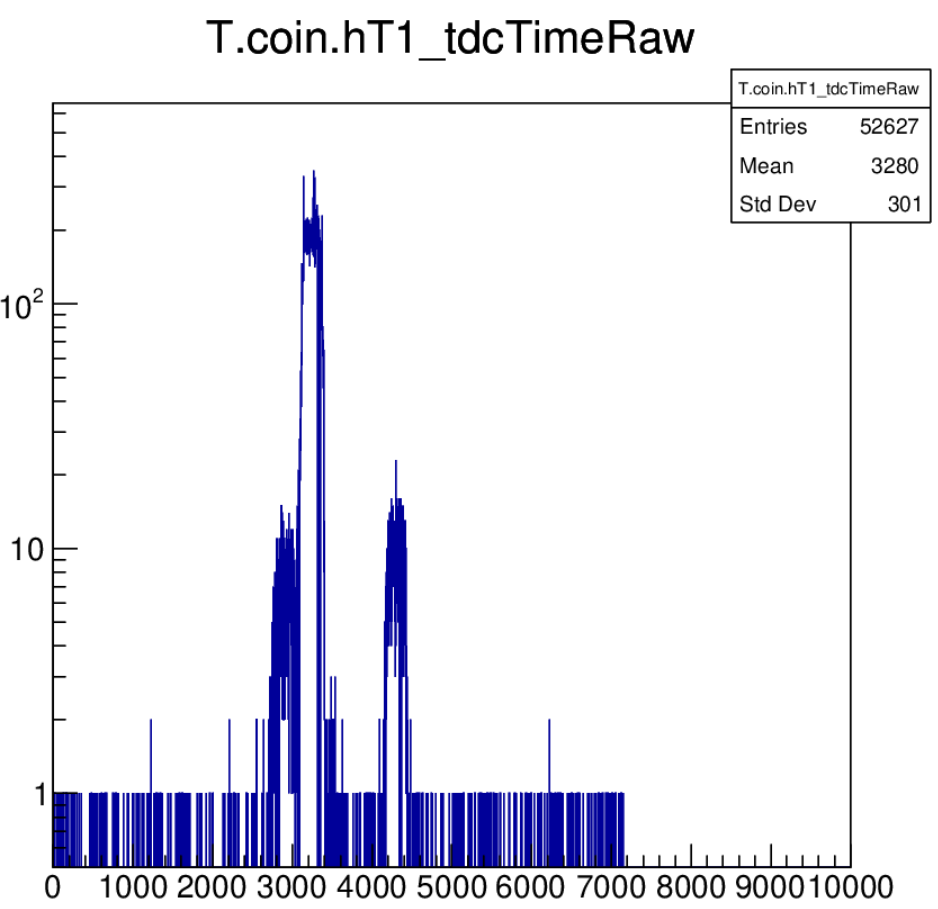
16715

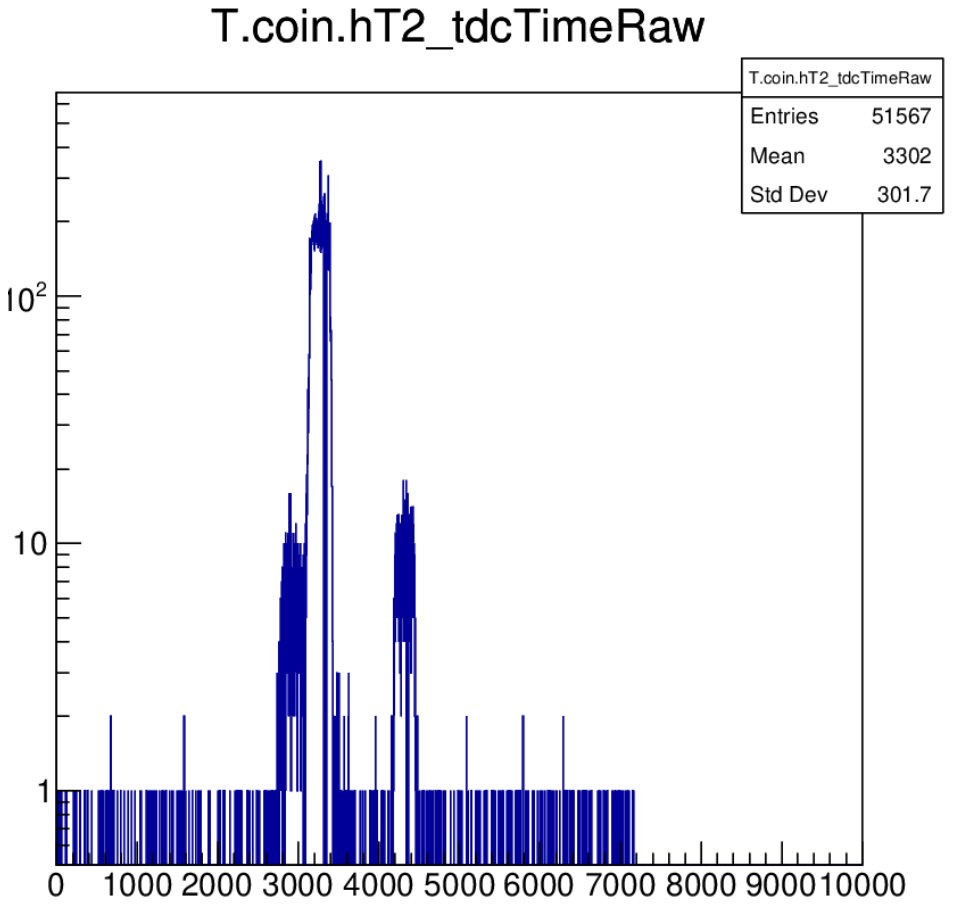
- Lumi with SHMS off
- 6.395 GeV



Hodo Tdc Ref

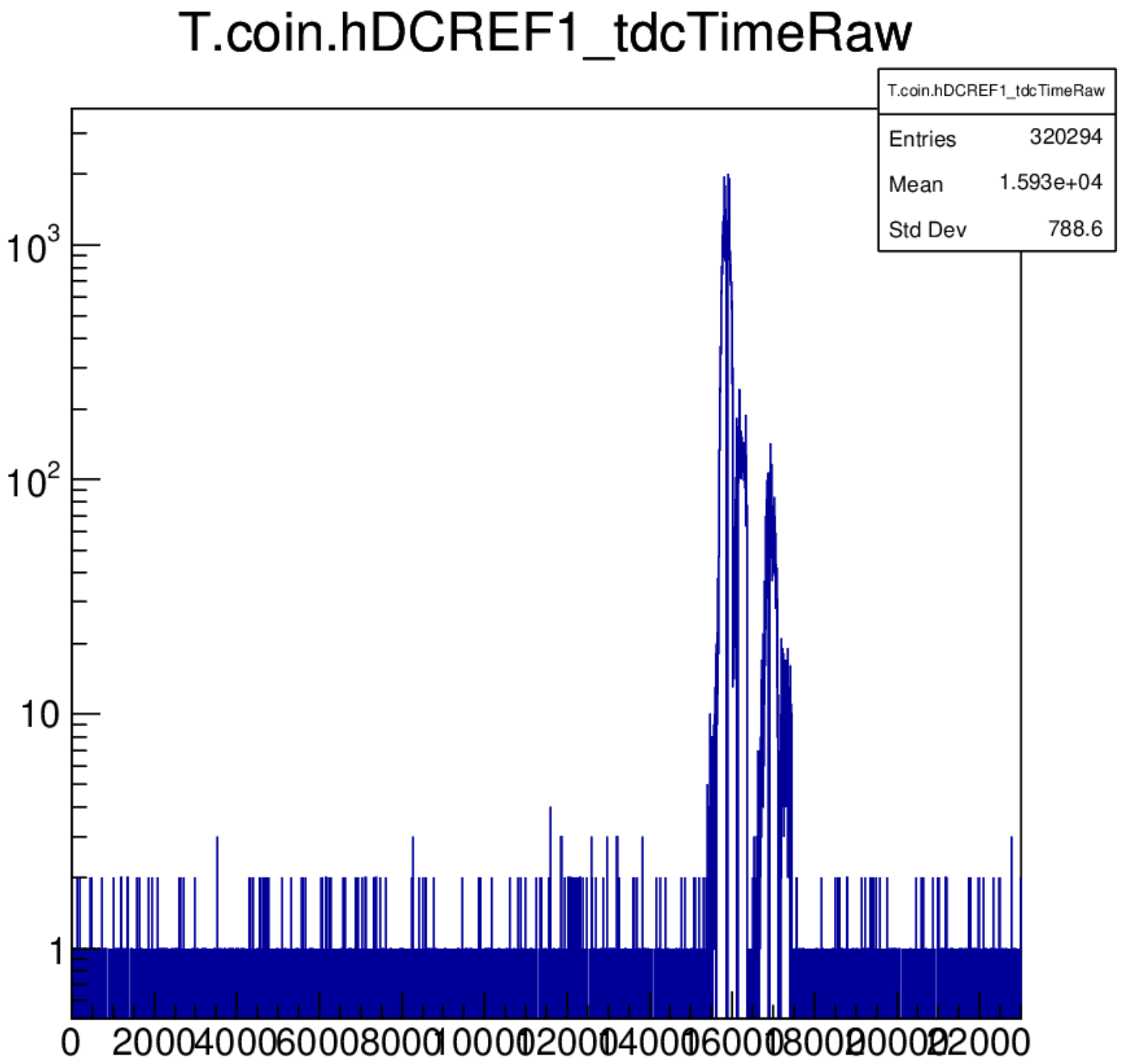
- The plots are almost exactly the same as for the hTrig plots





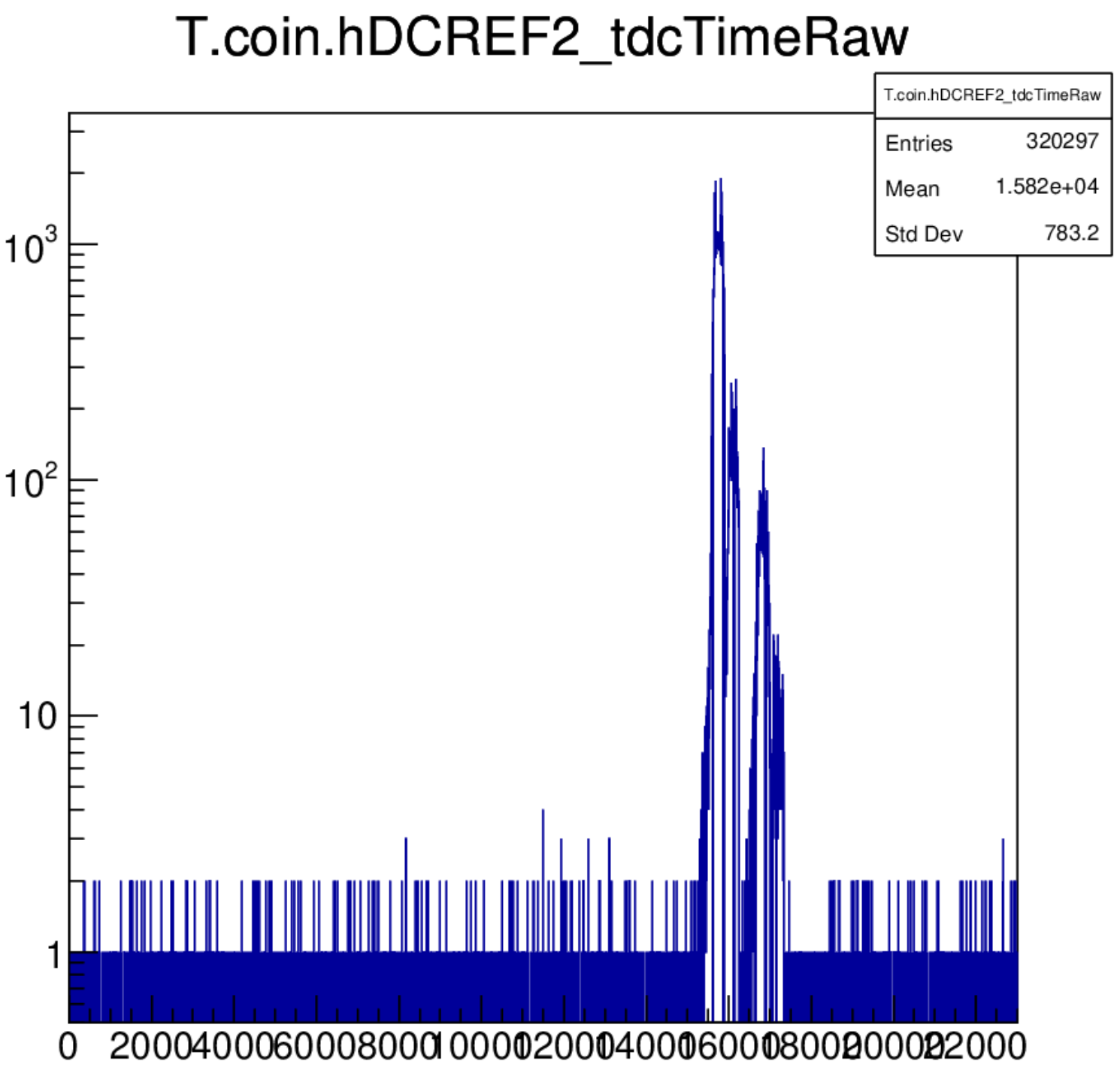
12998

- Prod
- 9.173 GeV



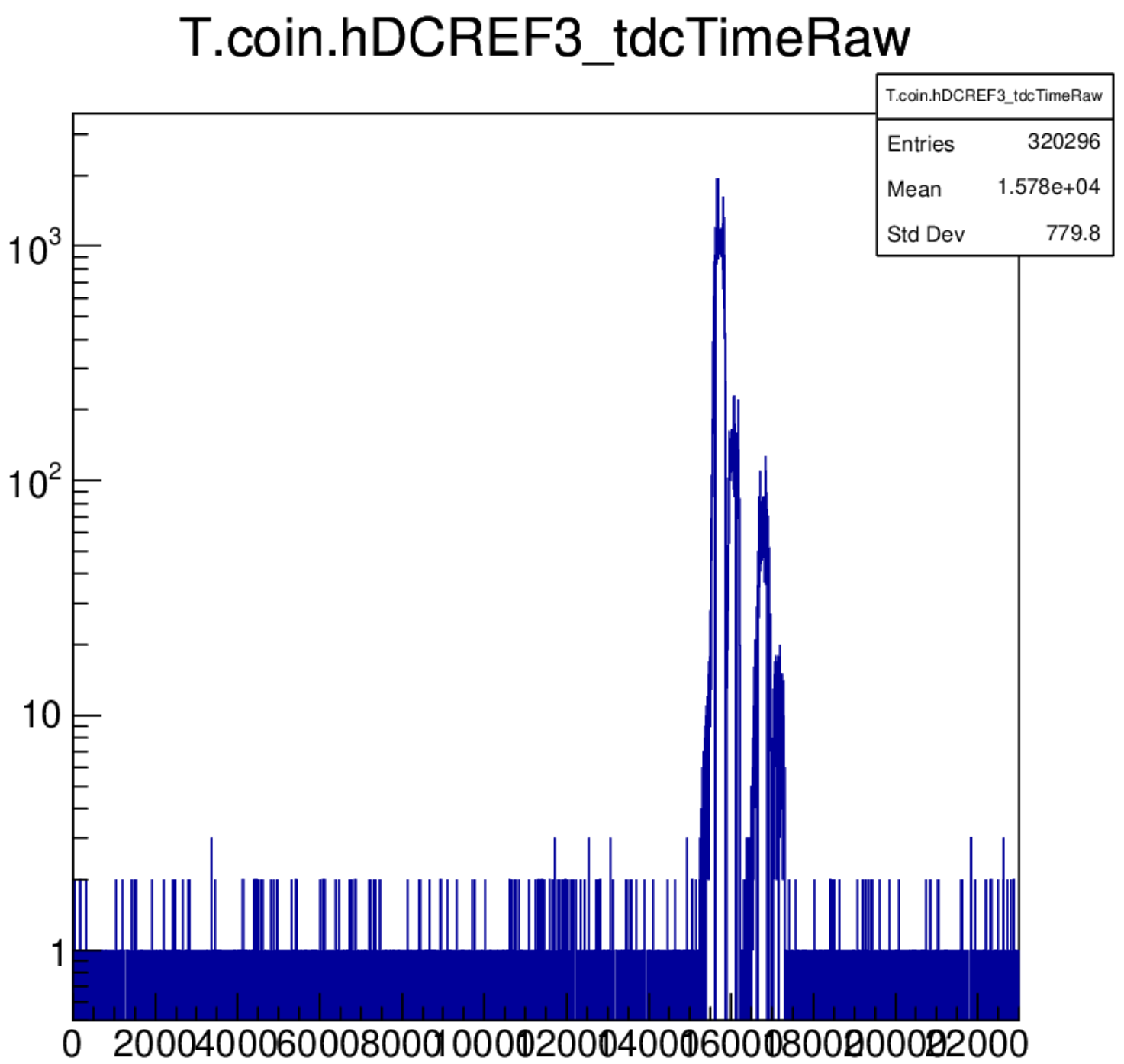
12998

- Prod
- 9.173 GeV



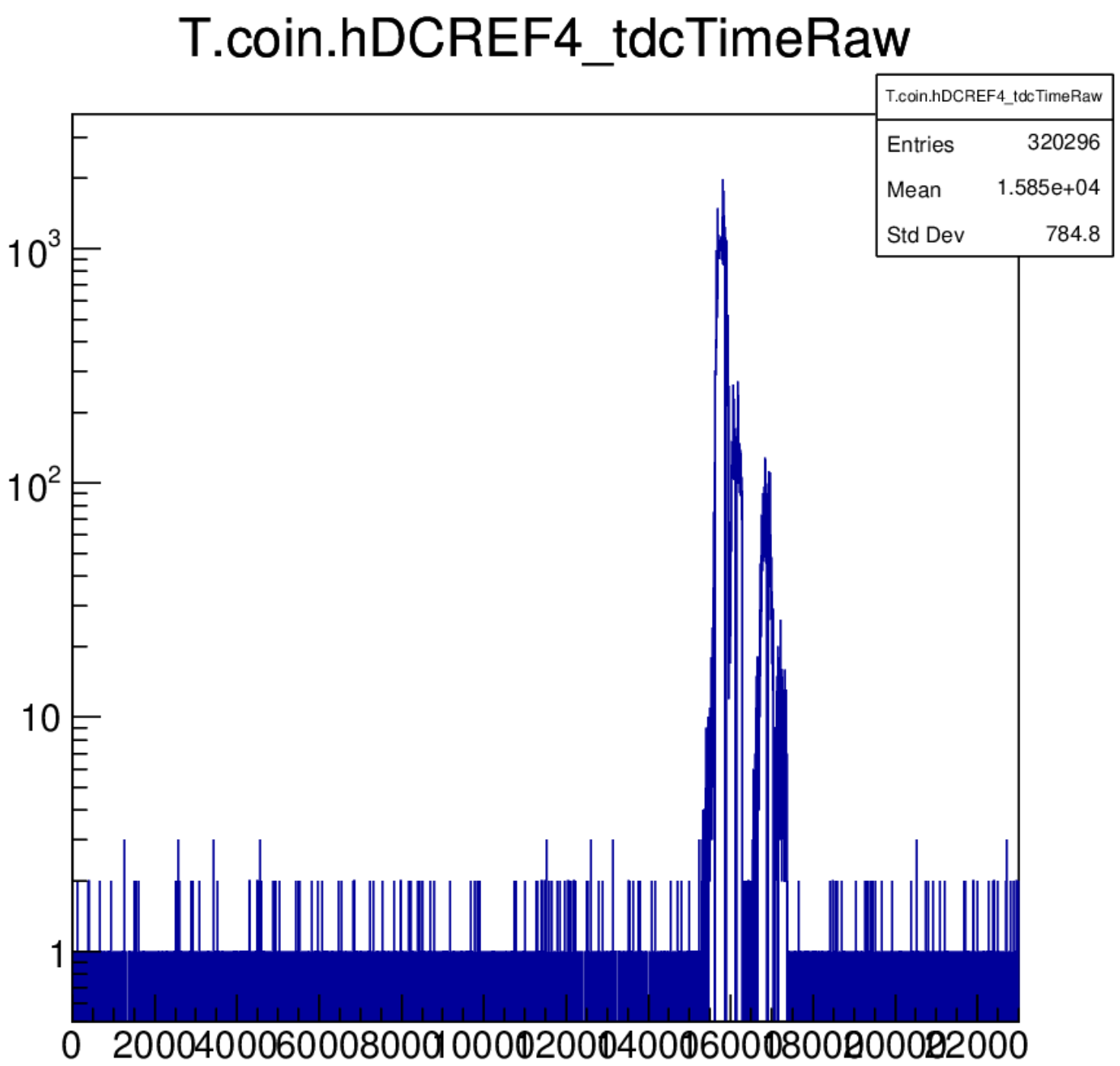
12998

- Prod
- 9.173 GeV



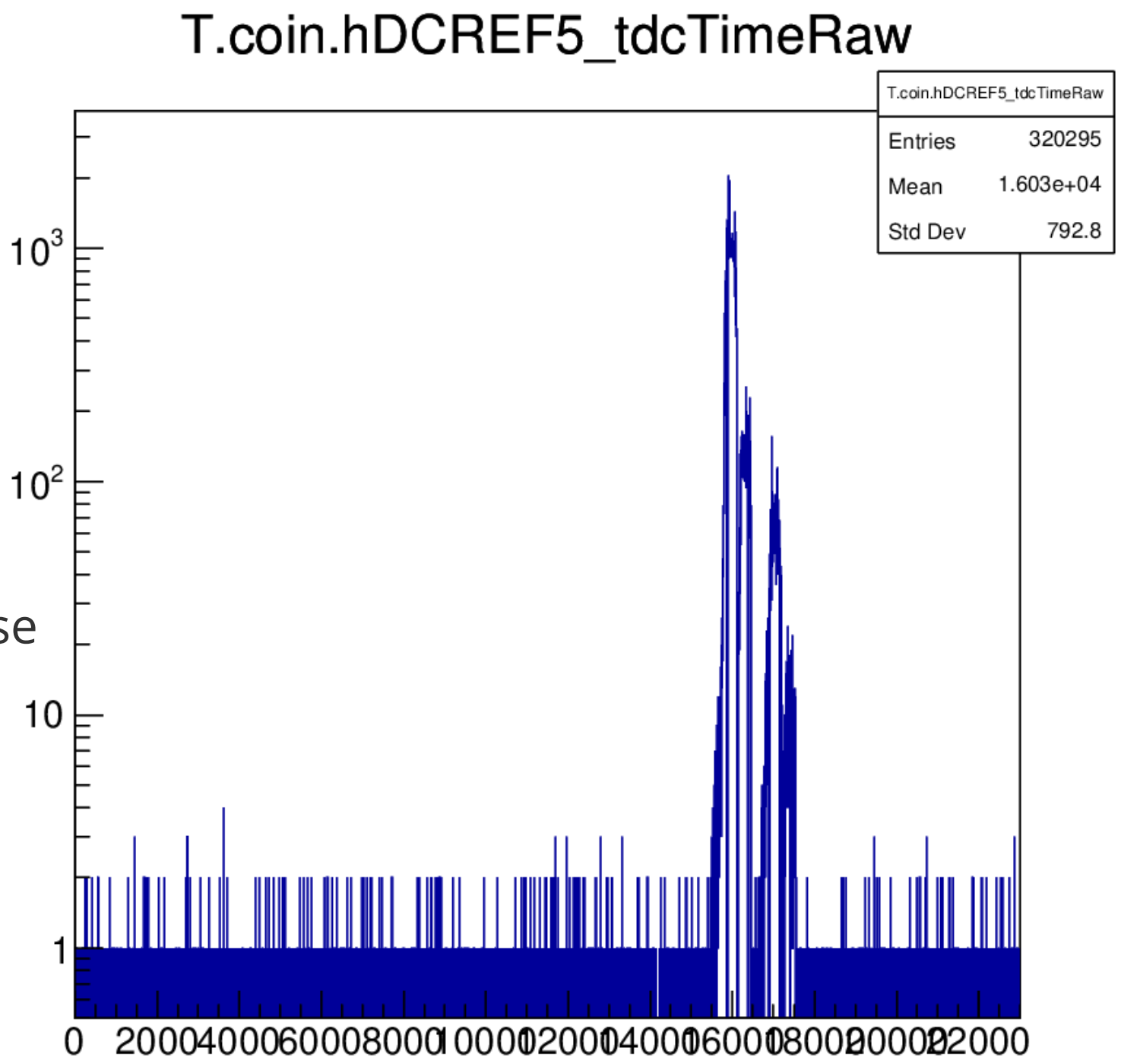
12998

- Prod
- 9.173 GeV



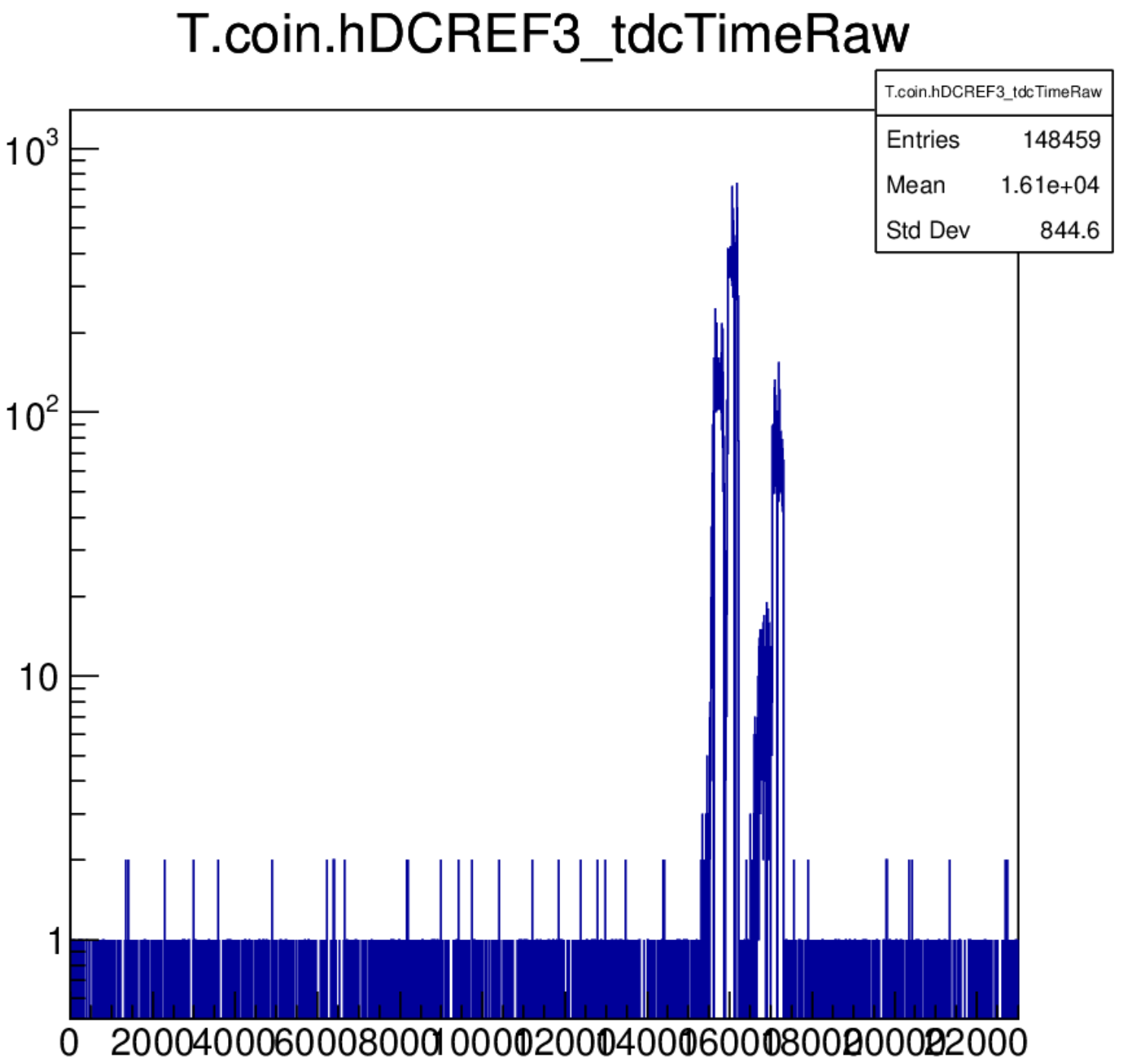
12998

- Prod
- 9.173 GeV
- DCREF3 is the lowest (this is consistent) so use that to pick cuts



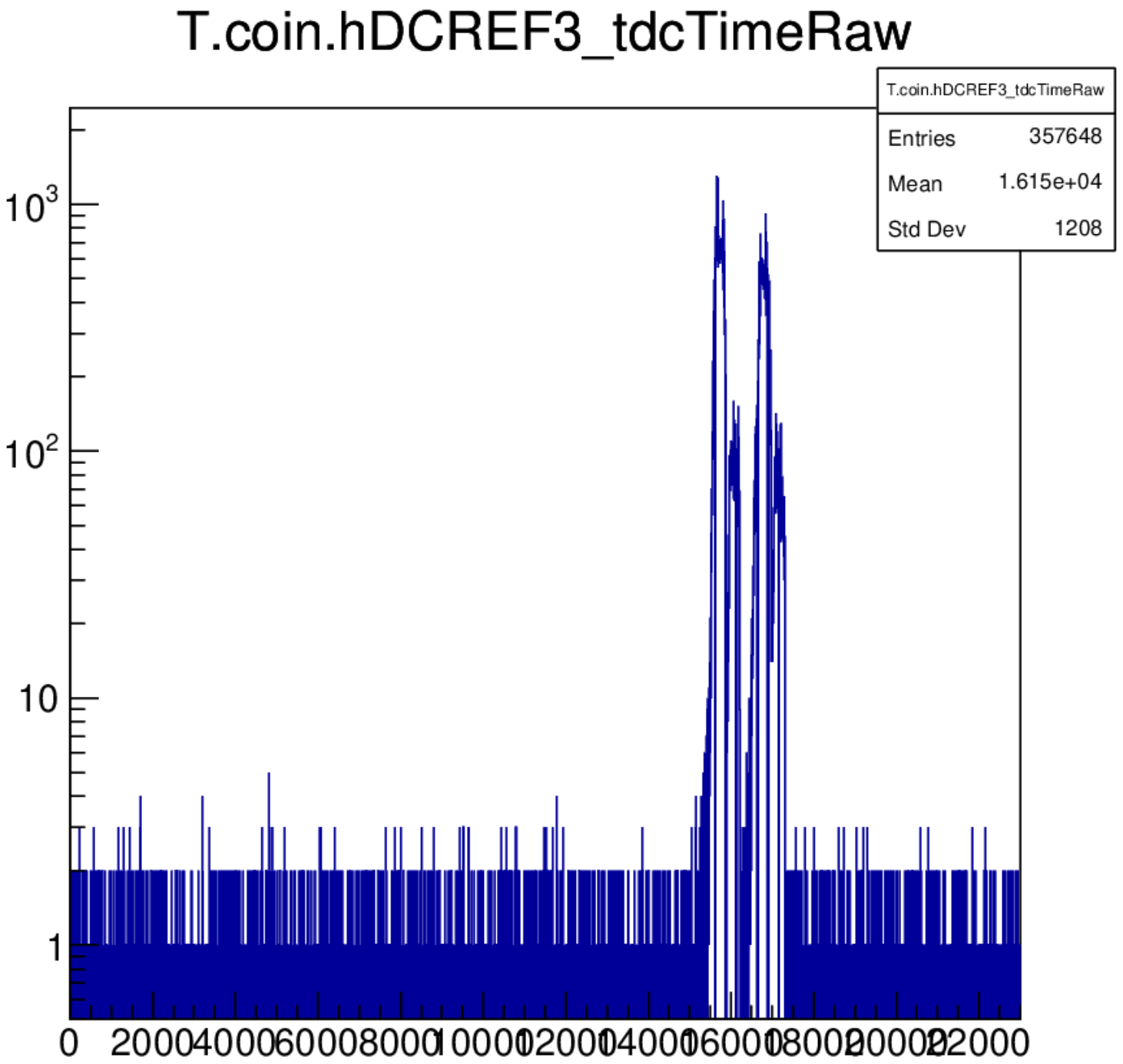
13090

- Prod Run
- 5.985 GeV



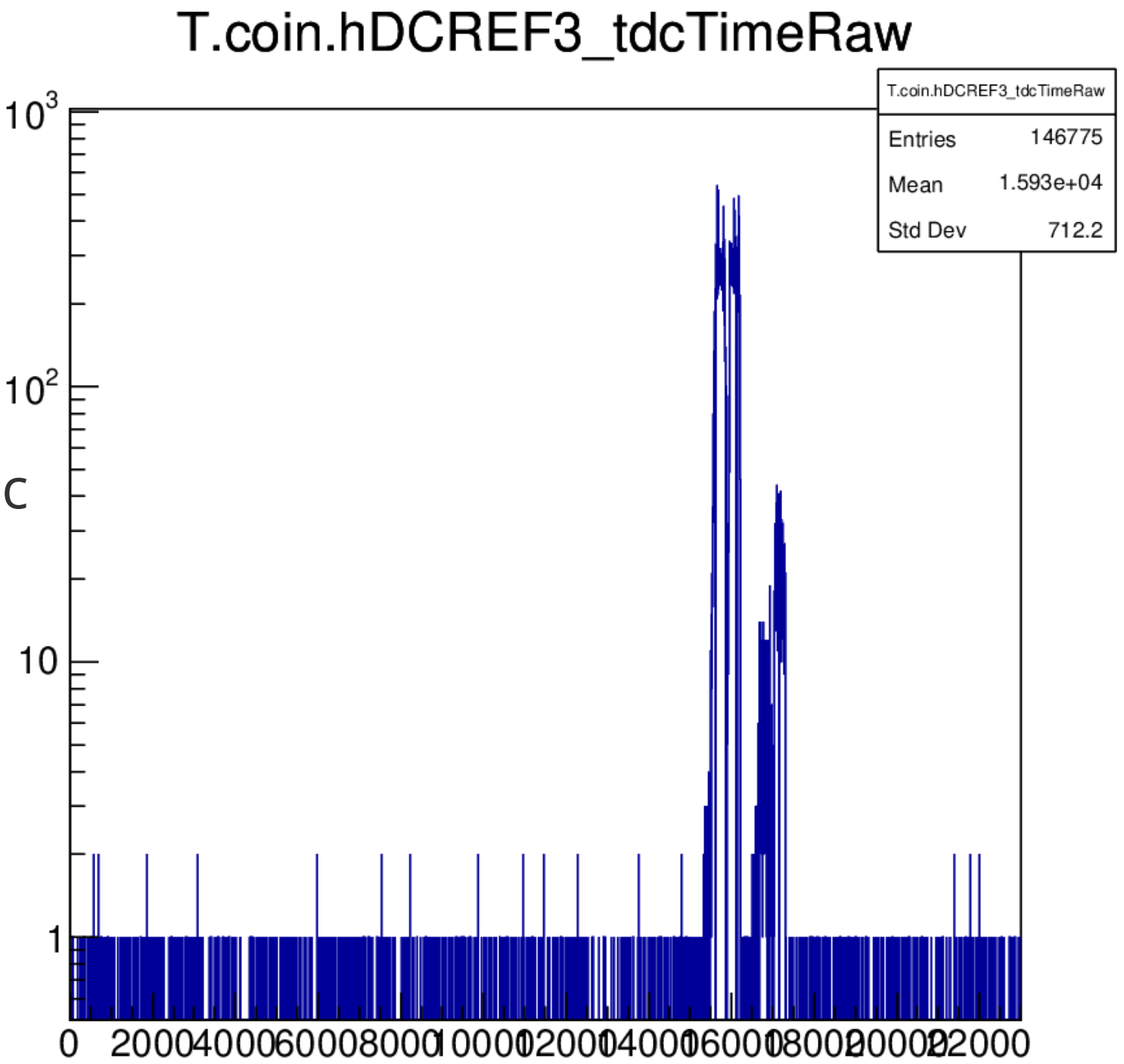
13843

- Prod Run
- 7.937 GeV



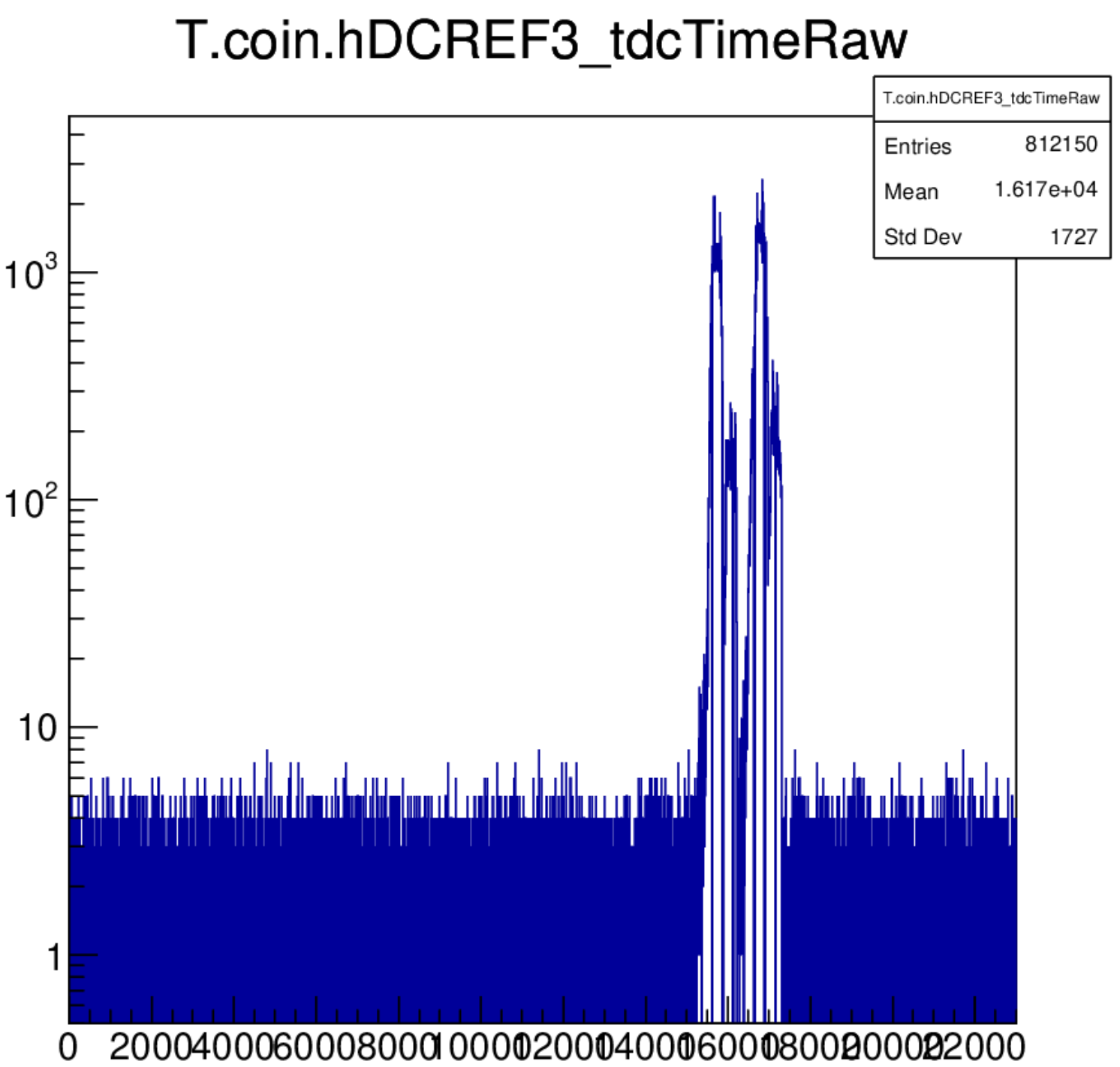
14109

- Prod Run
- 7.937 GeV
- Last run of Dec 2021



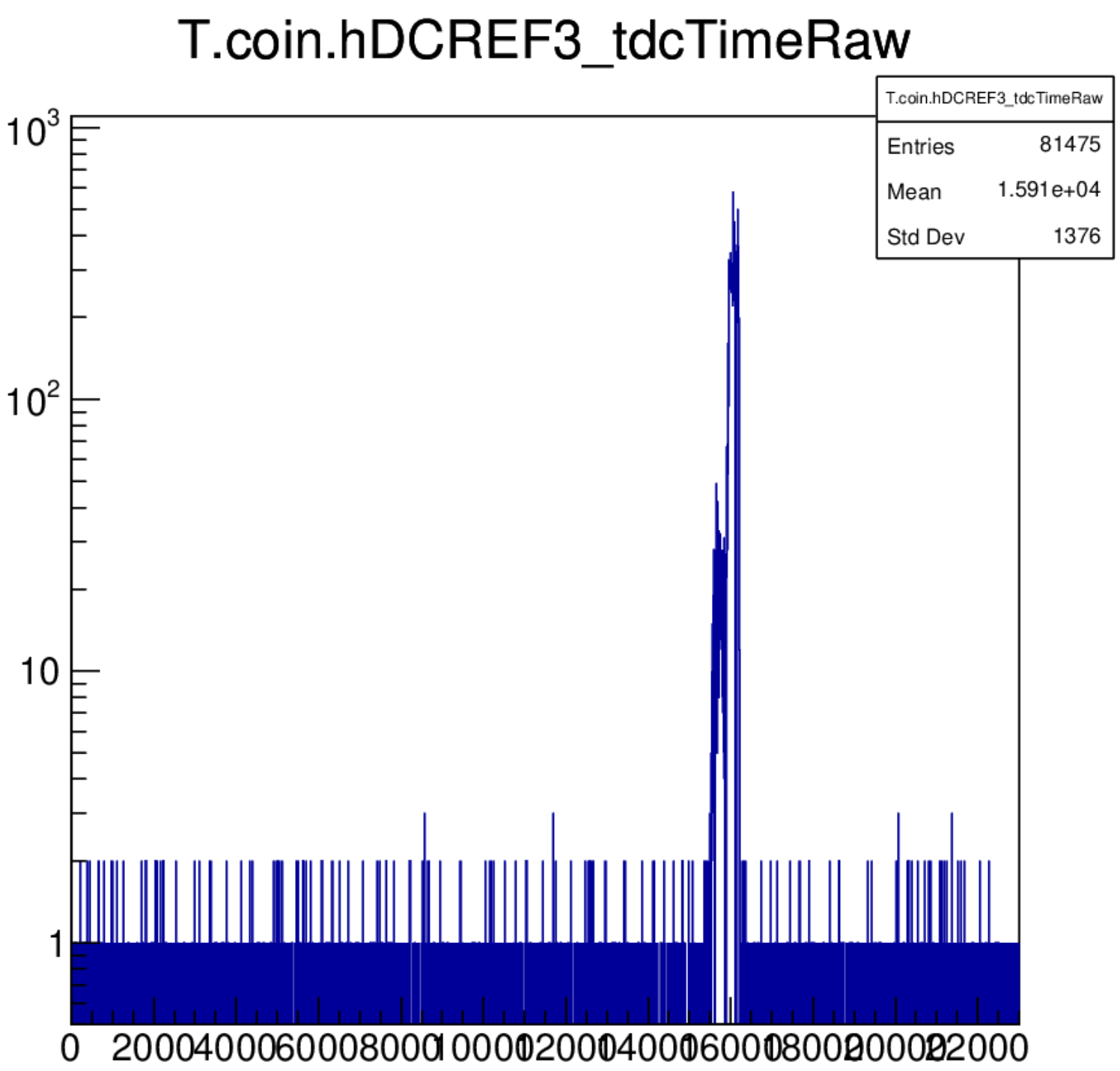
14666

- Prod Run
- 7.937 GeV



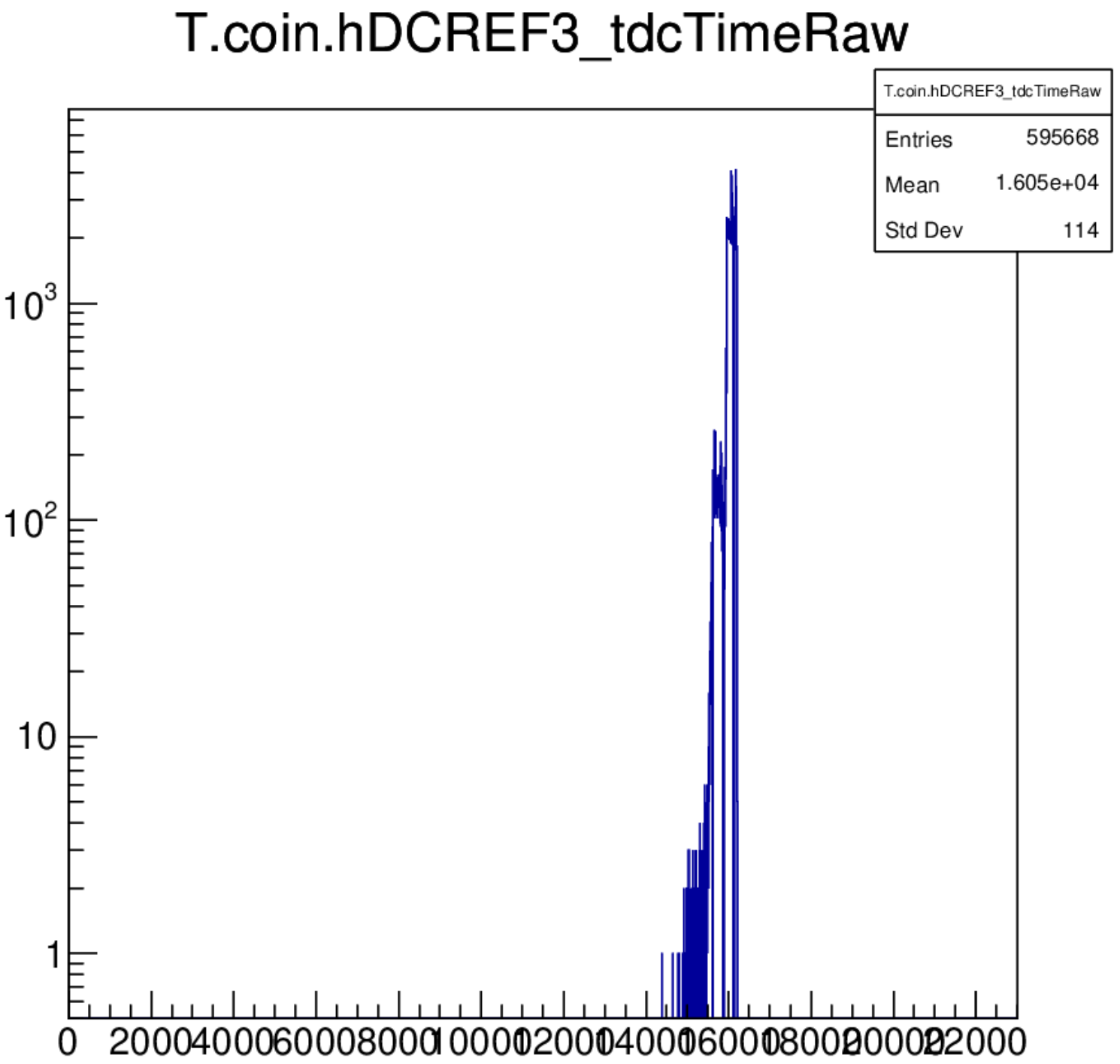
16199

- HeeP Singles
- 8.479 GeV



16715

- Lumi with SHMS off
- 6.395 GeV



HMS Conclusions

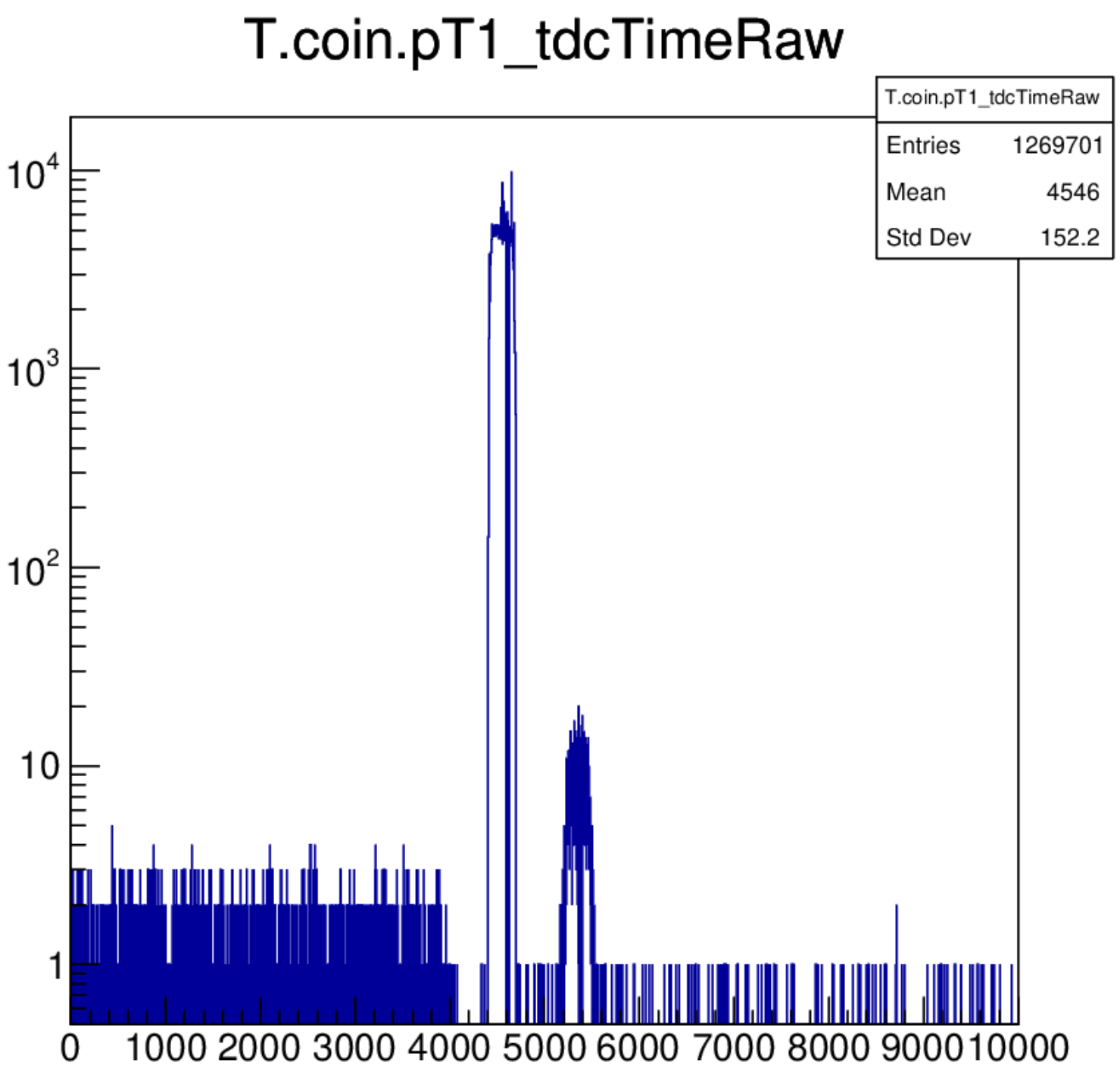
- I would recommend the following cuts:
  - h_adcrefcut = 3400
  - h_trigtdccut = 2600
  - h_hodotdccut = 2600
  - hDC_adccut = 14500

SHMS

- We’ll need 2 sets of cuts for SHMS depending of whether it ¾ of eIREAL.
- These continue with the other ref times

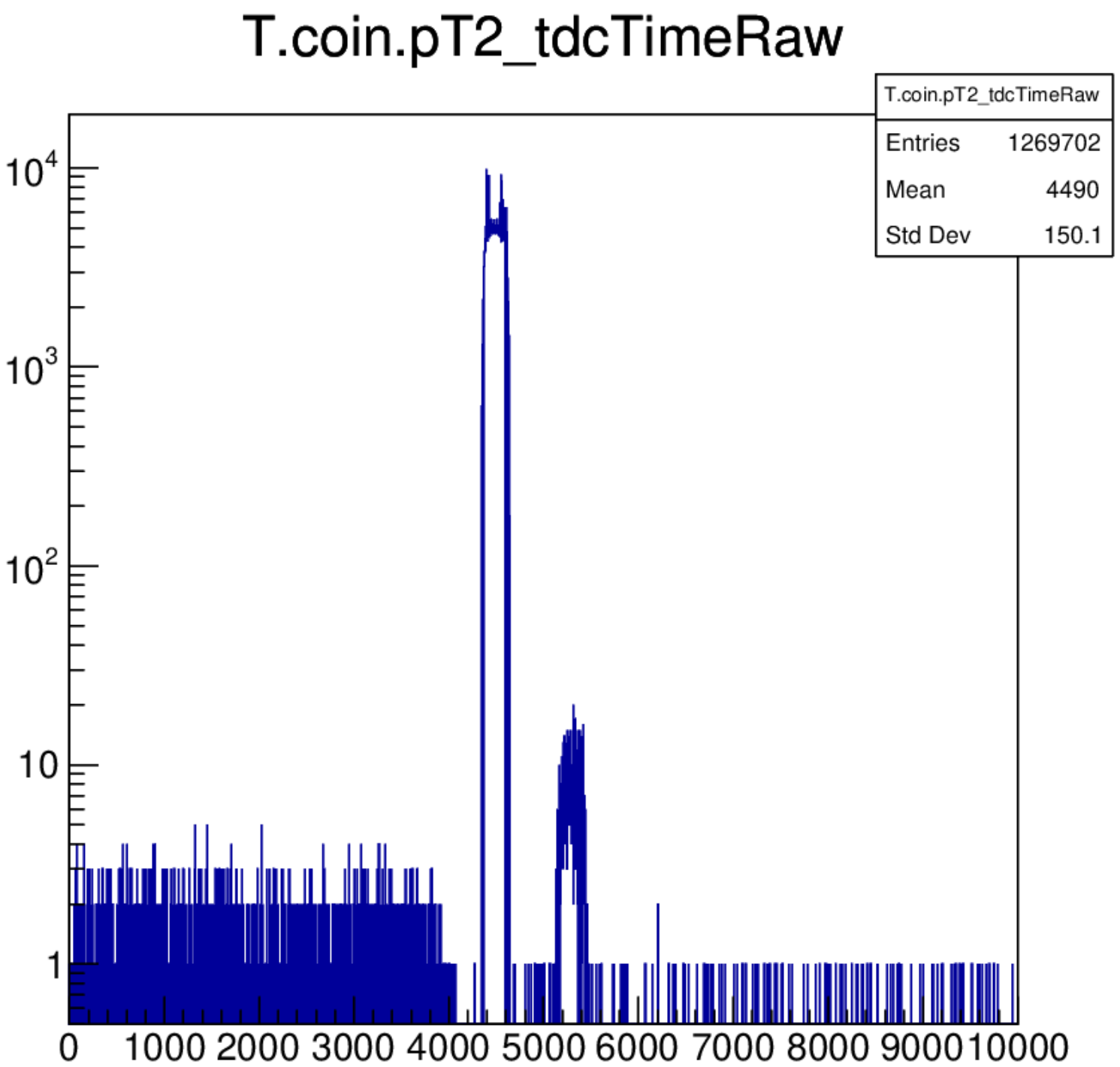
11829

- HeeP coin
- Fourth run of 2021 Fall



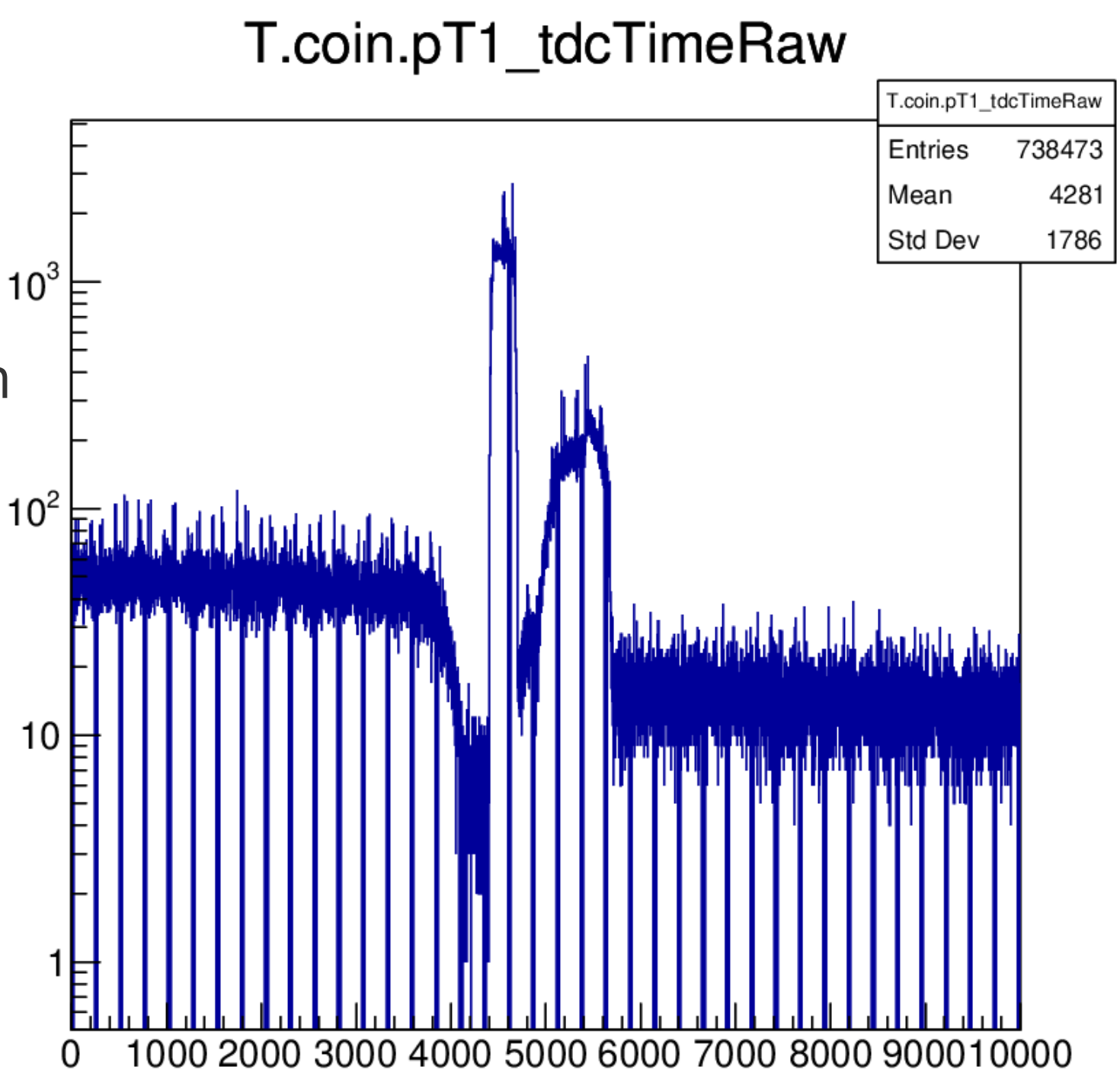
11829

- HeeP coin
- Fourth run of 2021 Fall



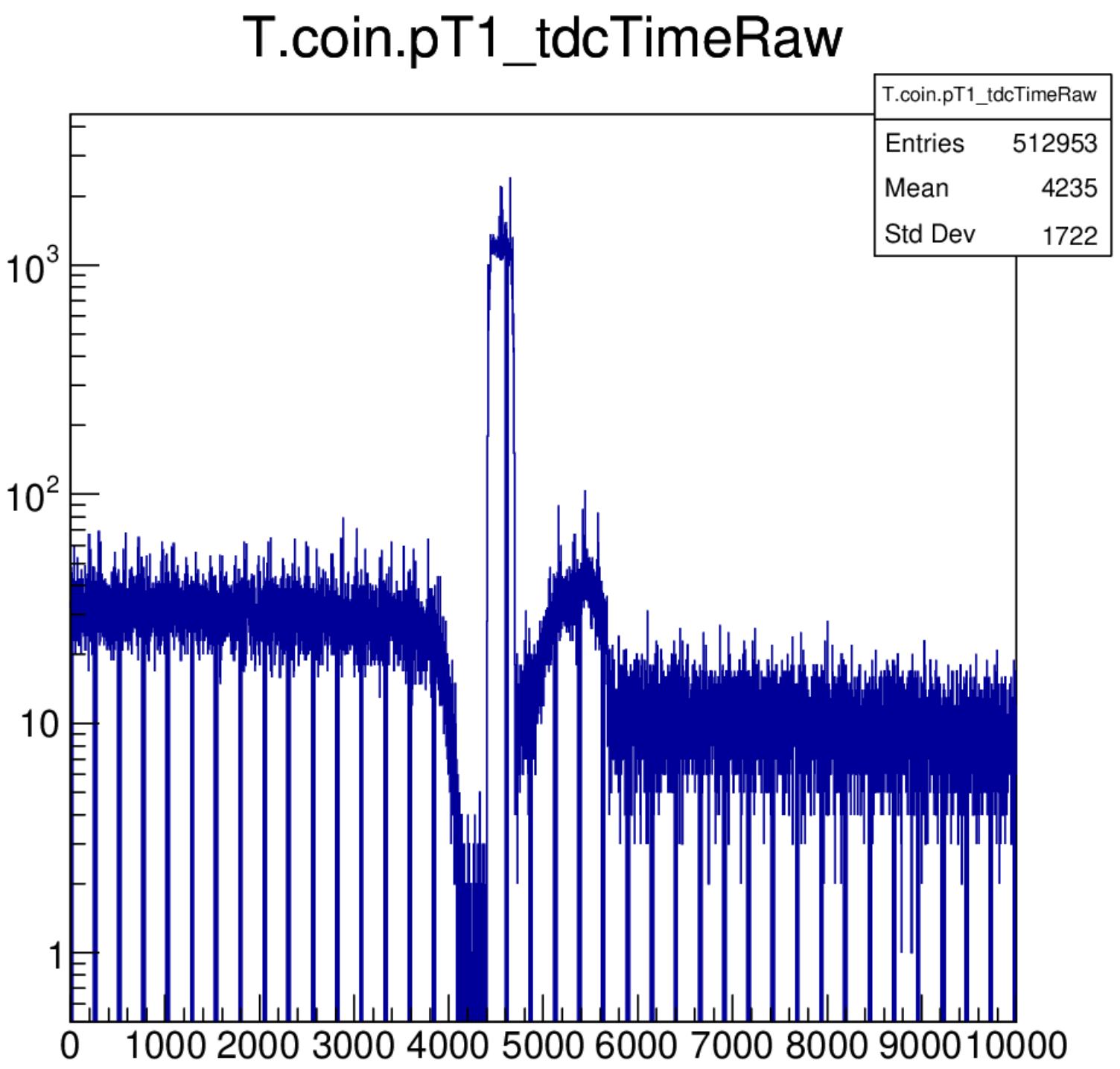
12493

- Production run
- 9.177 GeV



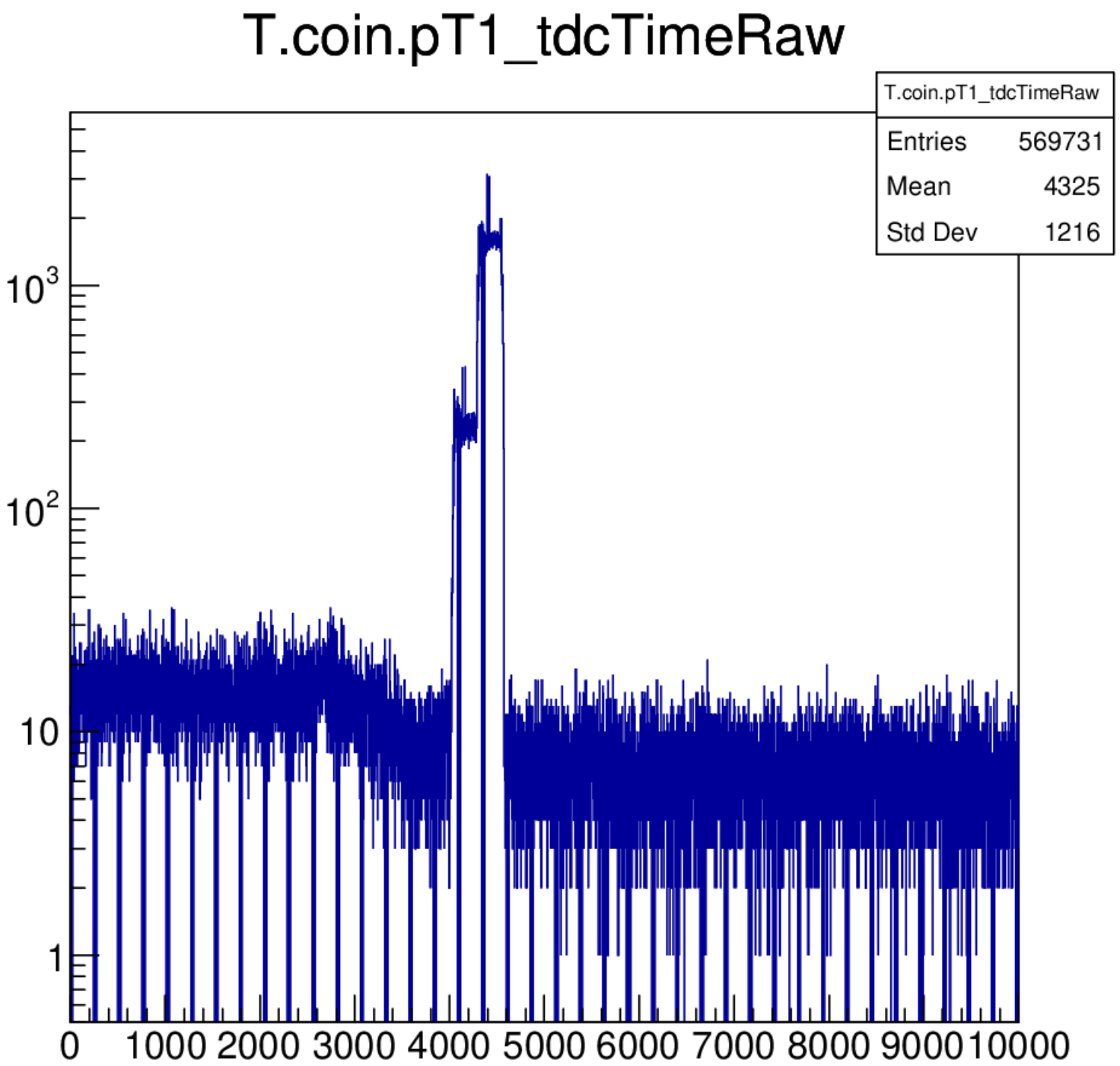
12998

- Prod
- 9.173 GeV



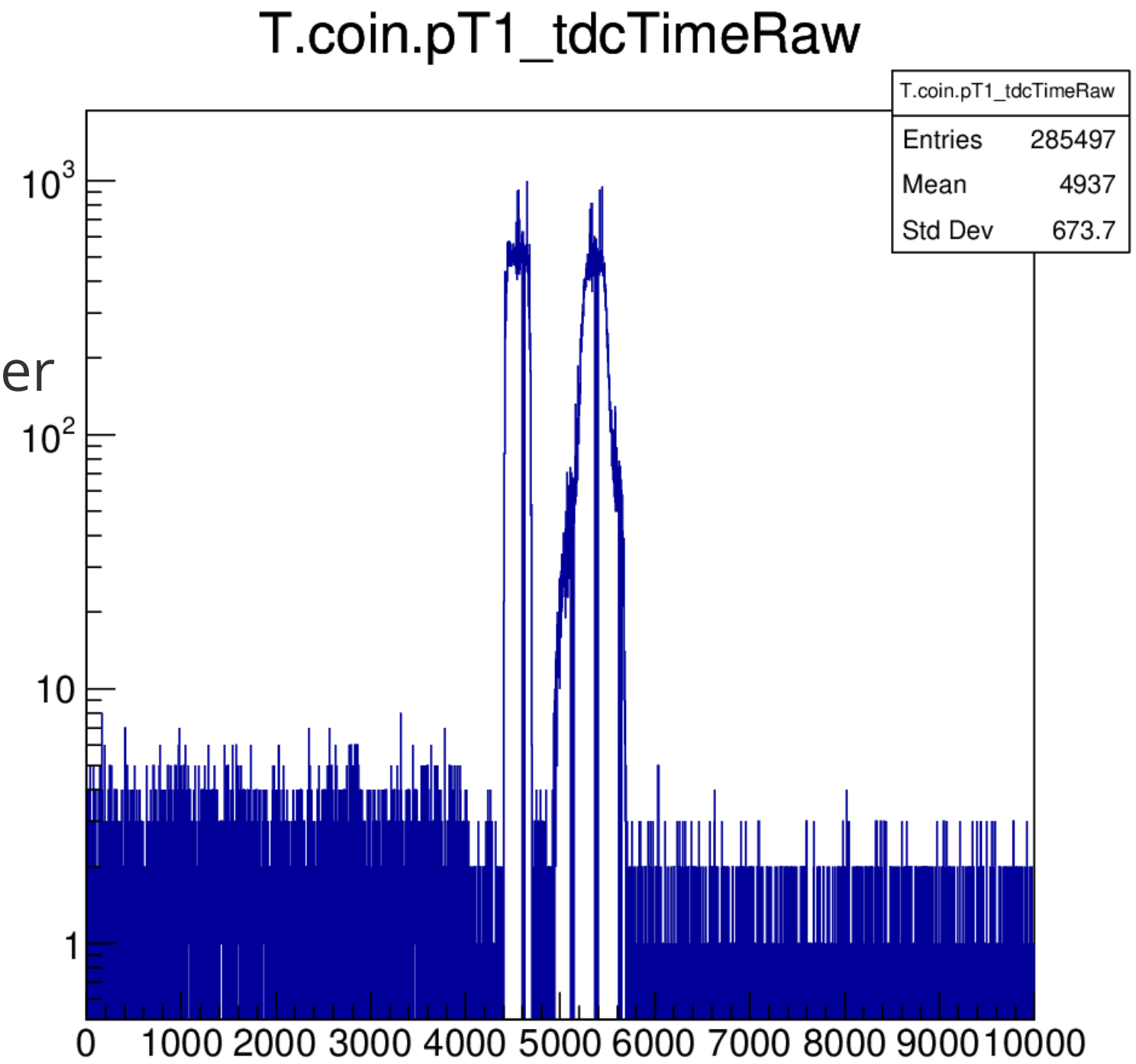
13905

- Carbon Lumi
- 7.937 GeV



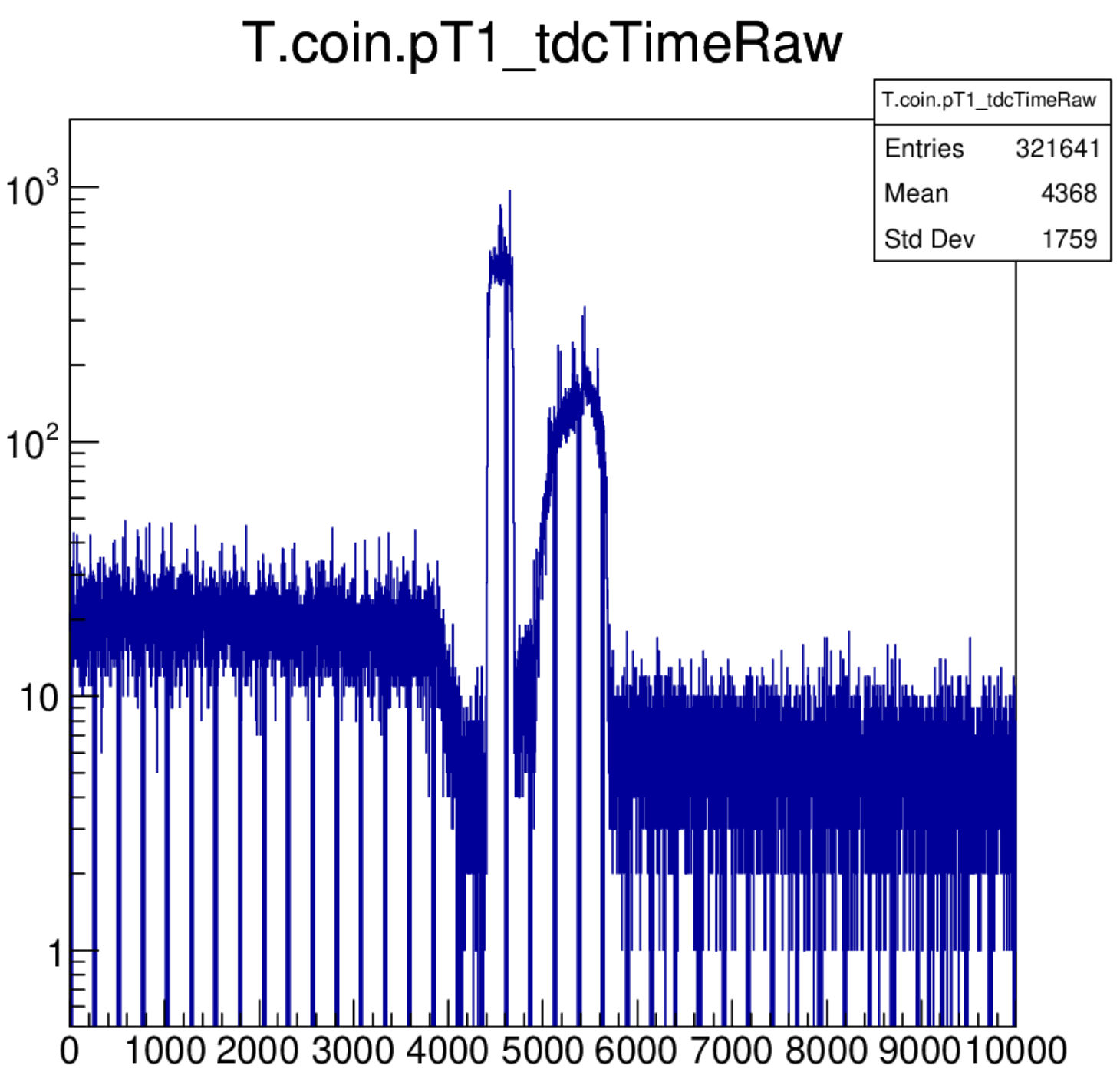
14997

- HeeP Coin
- Start of summer 2022
- 10.549 GeV



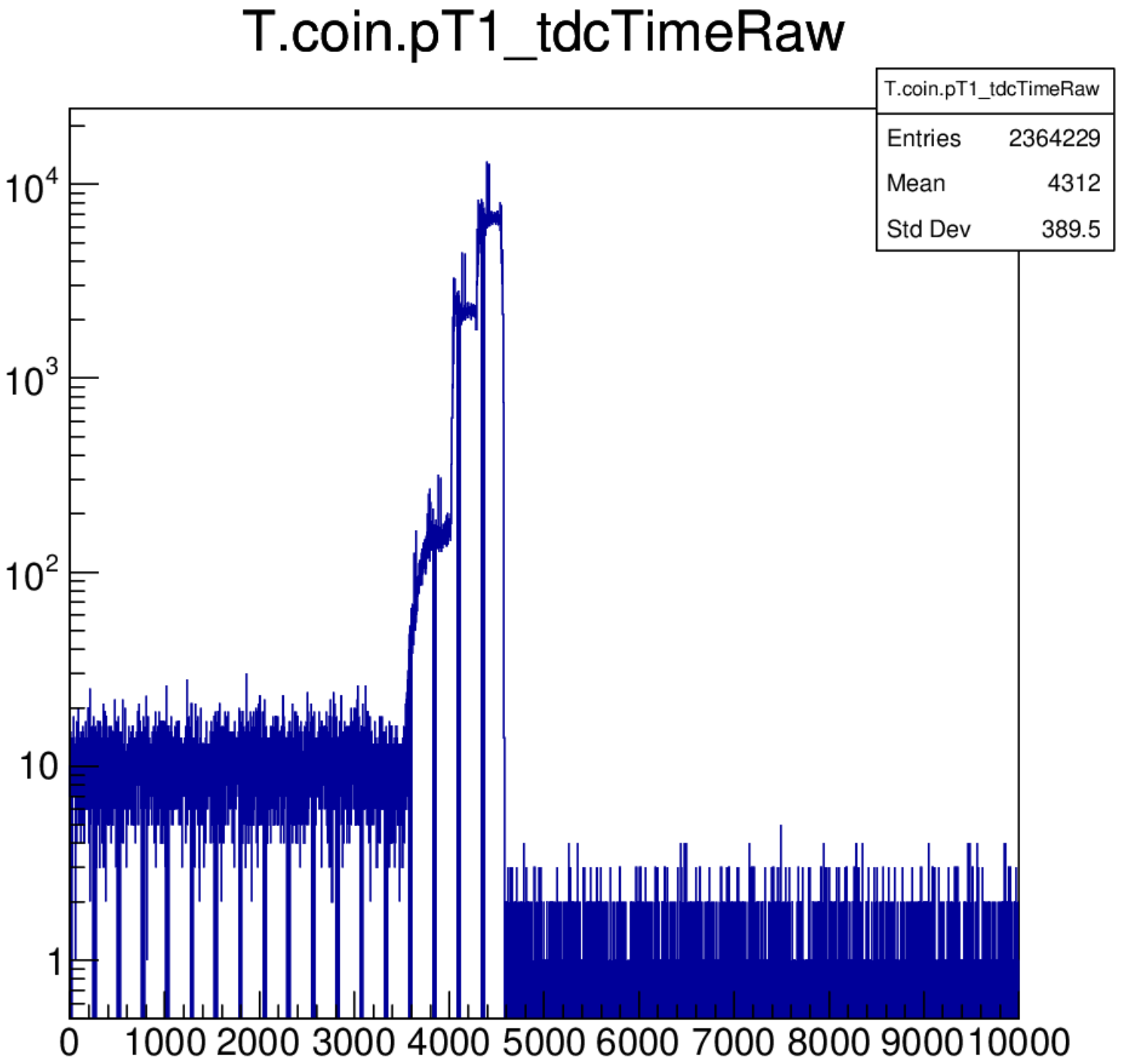
15515

- Prod
- 10.549 GeV



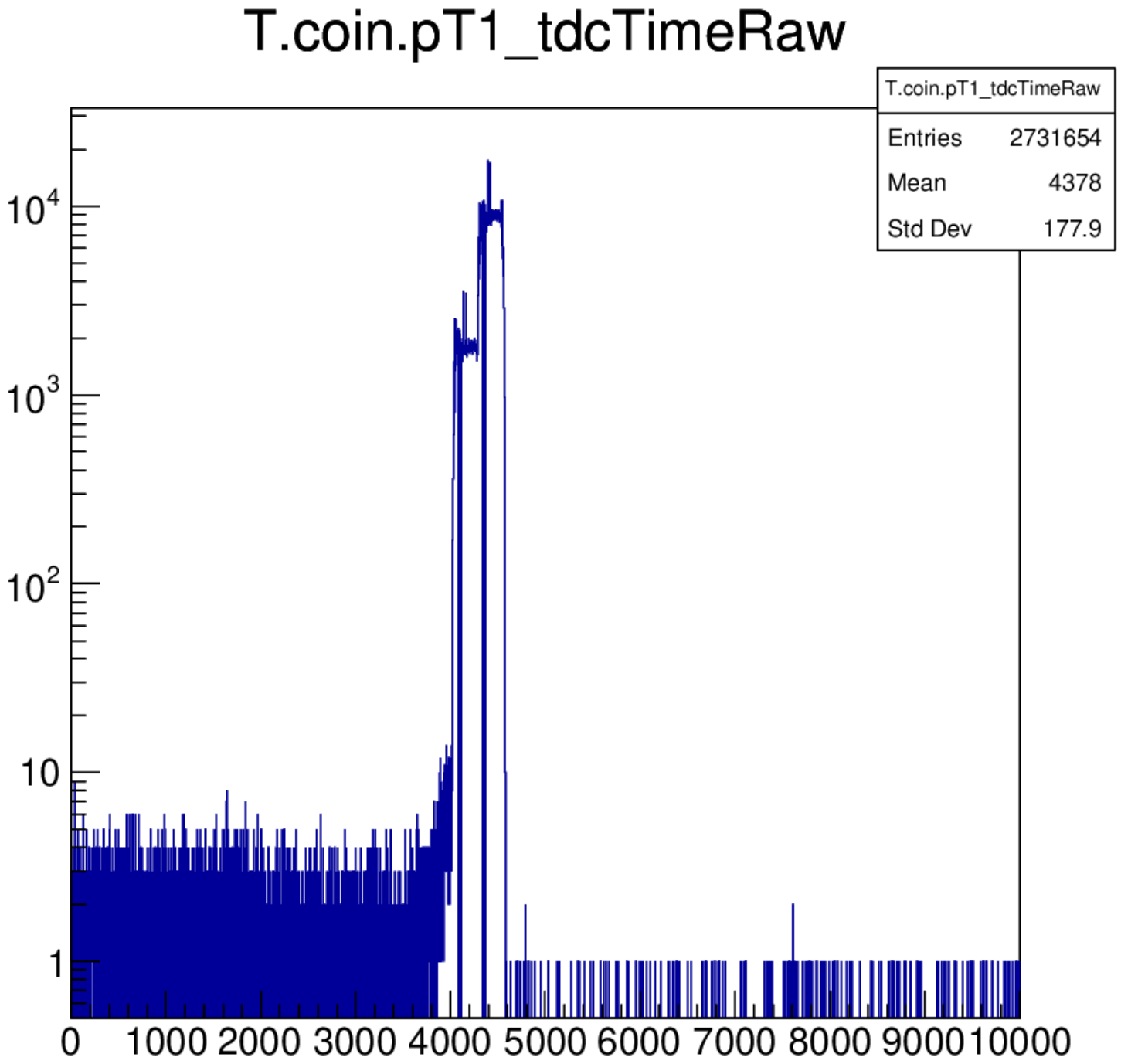
16060

- Heep Singles
- 10.549 GeV



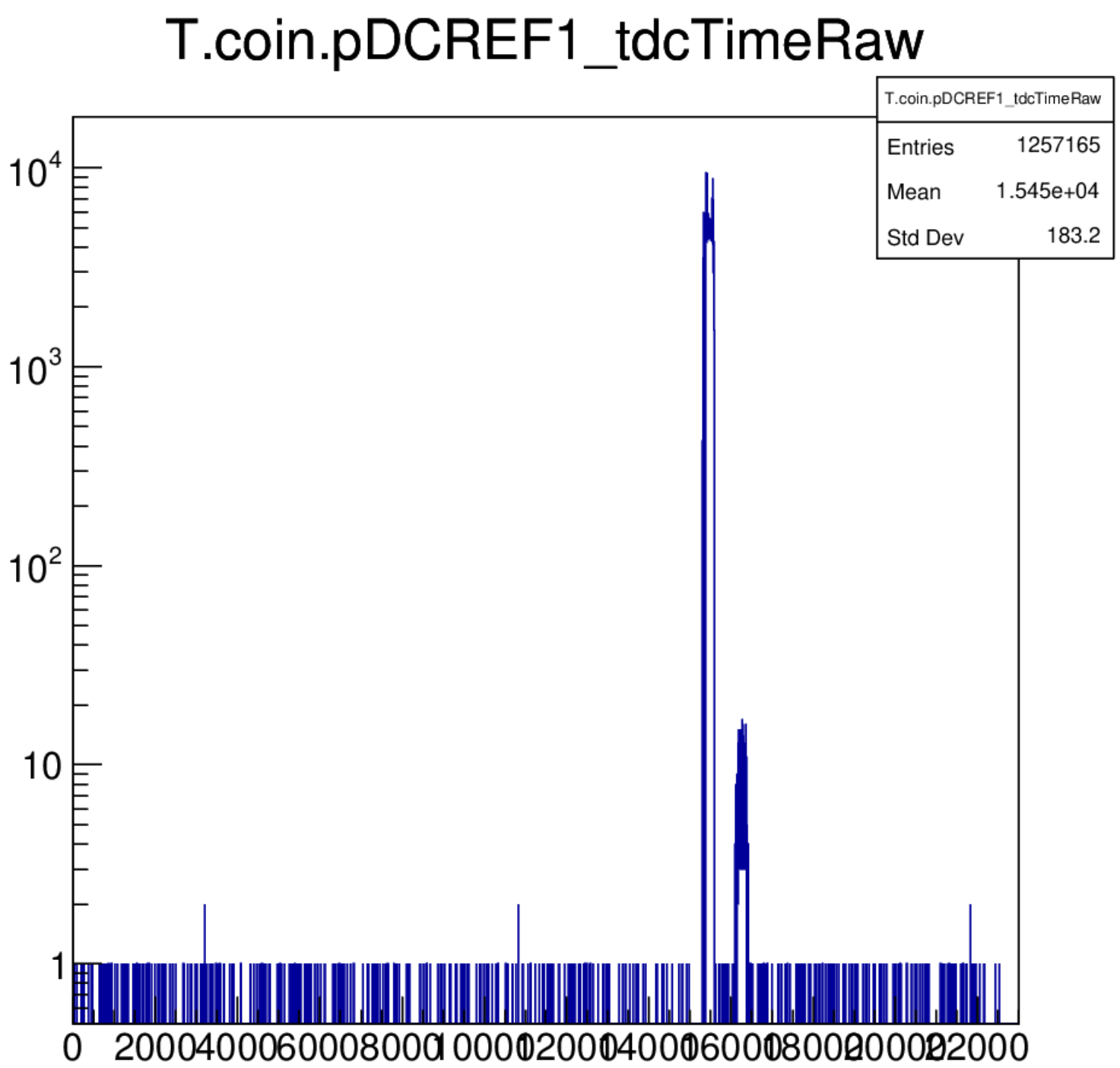
16701

- HeeP Singles
- 6.395 GeV



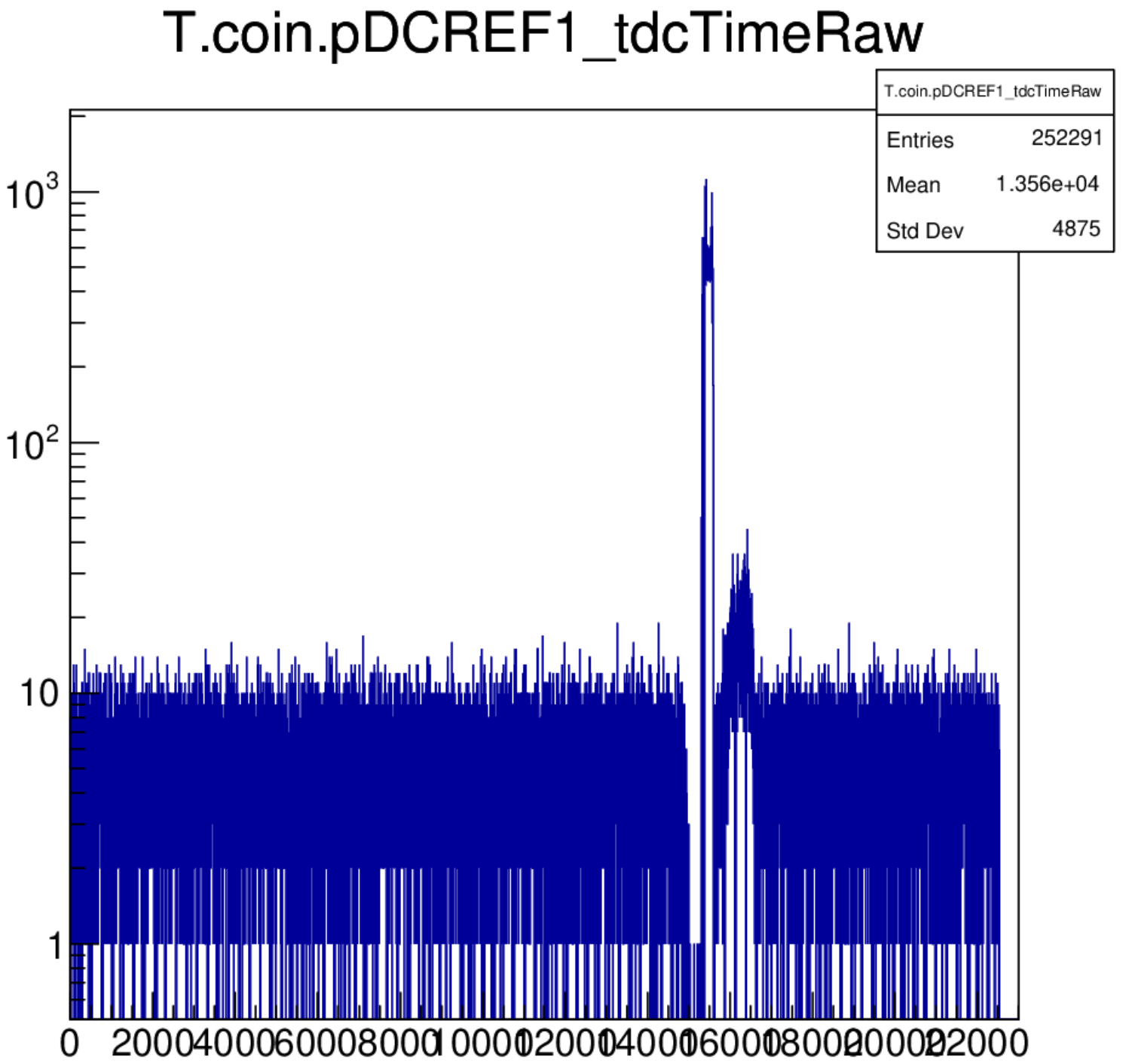
11829

- HeeP coin
- Fourth run of 2021 Fall



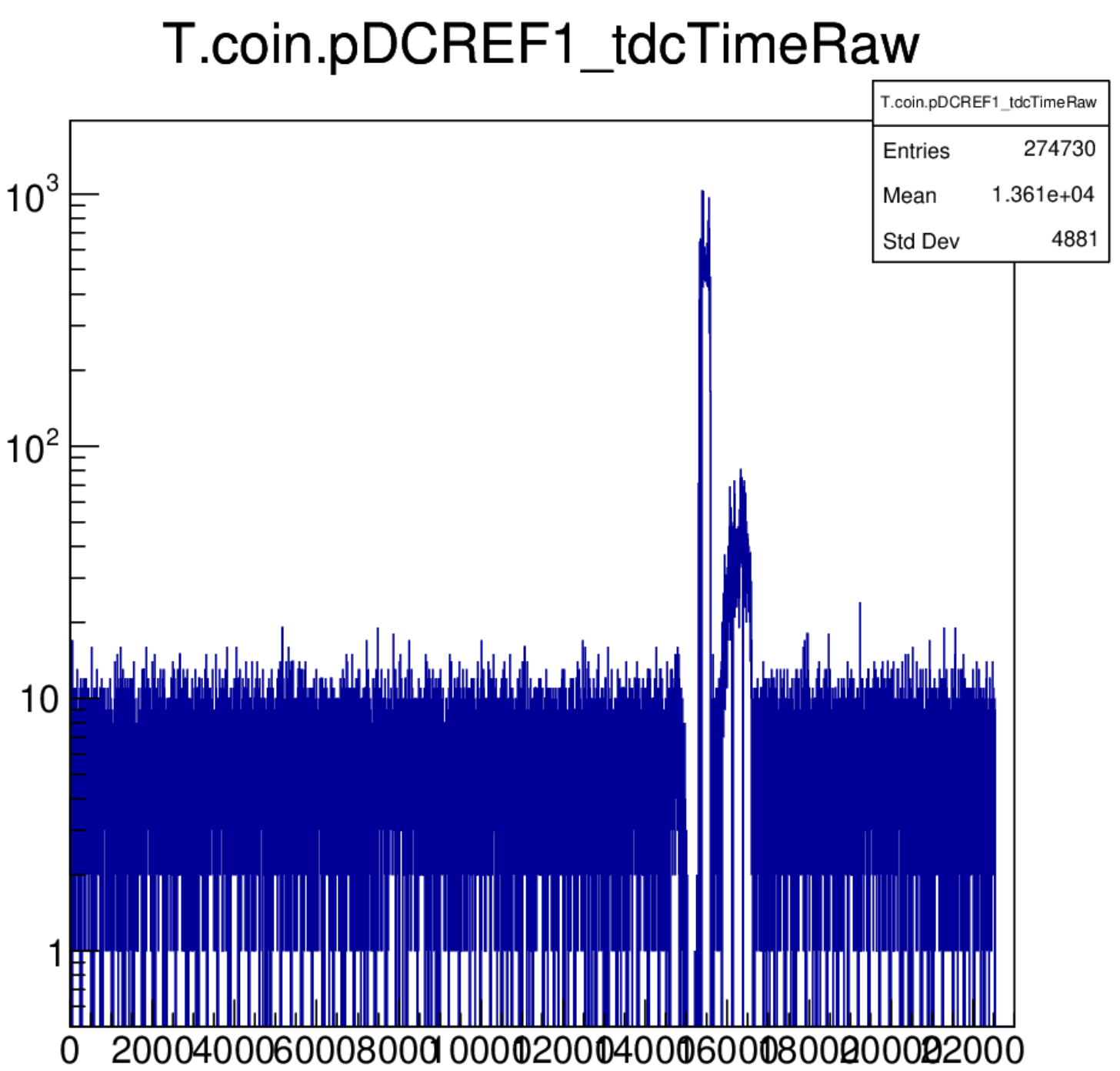
12998

- Prod
- 9.173 GeV



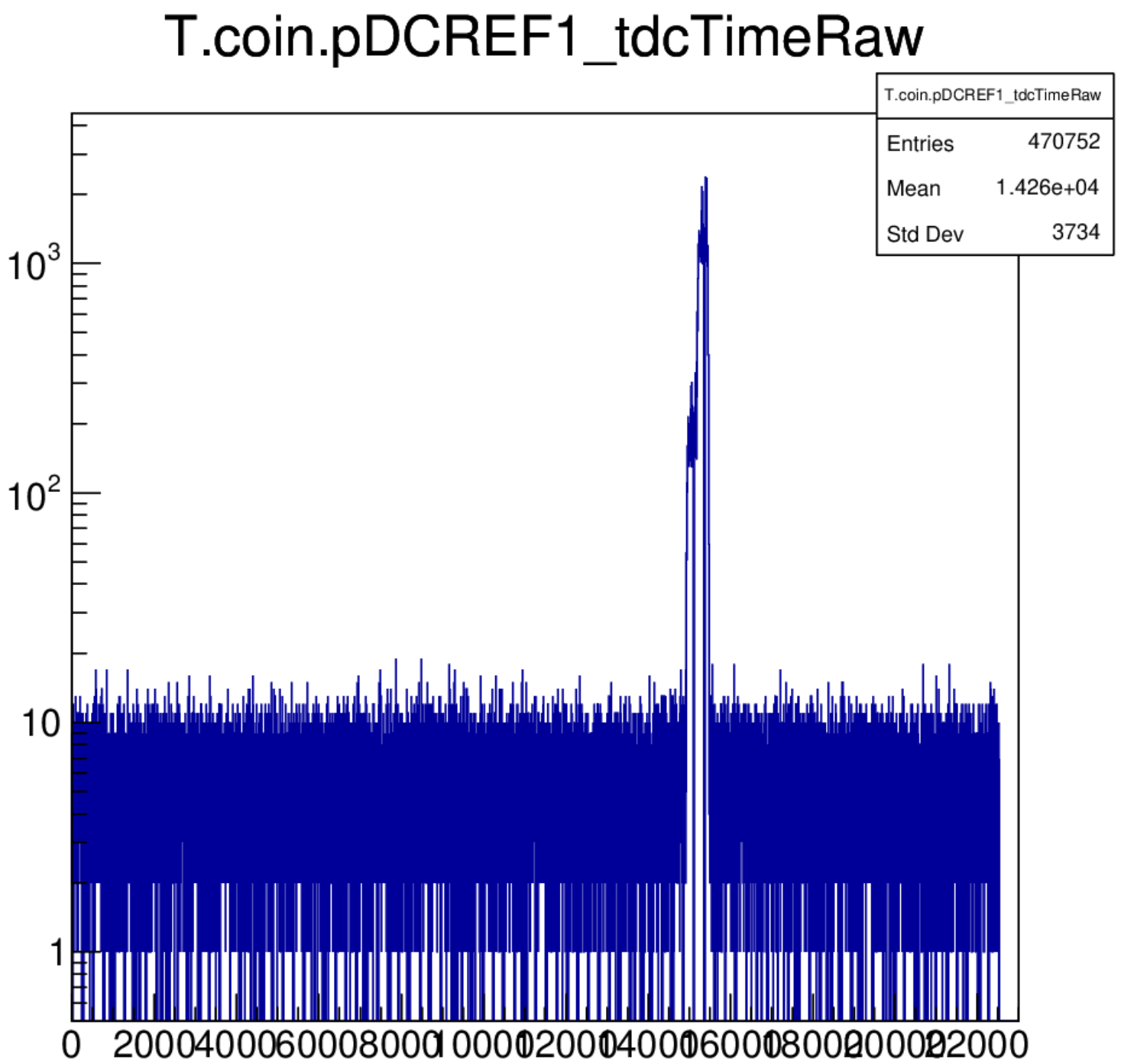
13467

- Prod
- 7.937 GeV



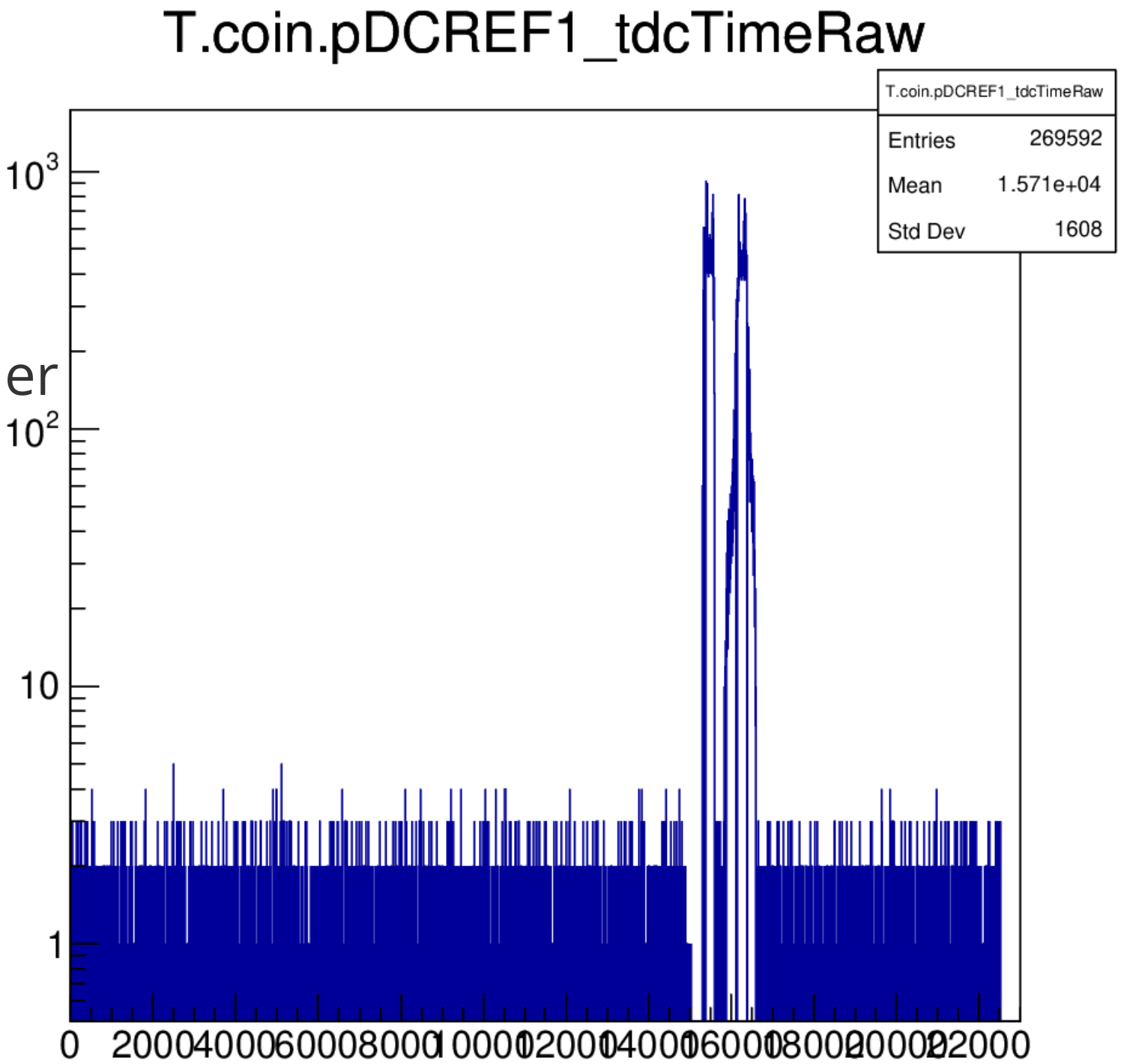
13905

- Carbon Lumi
- 7.937 GeV



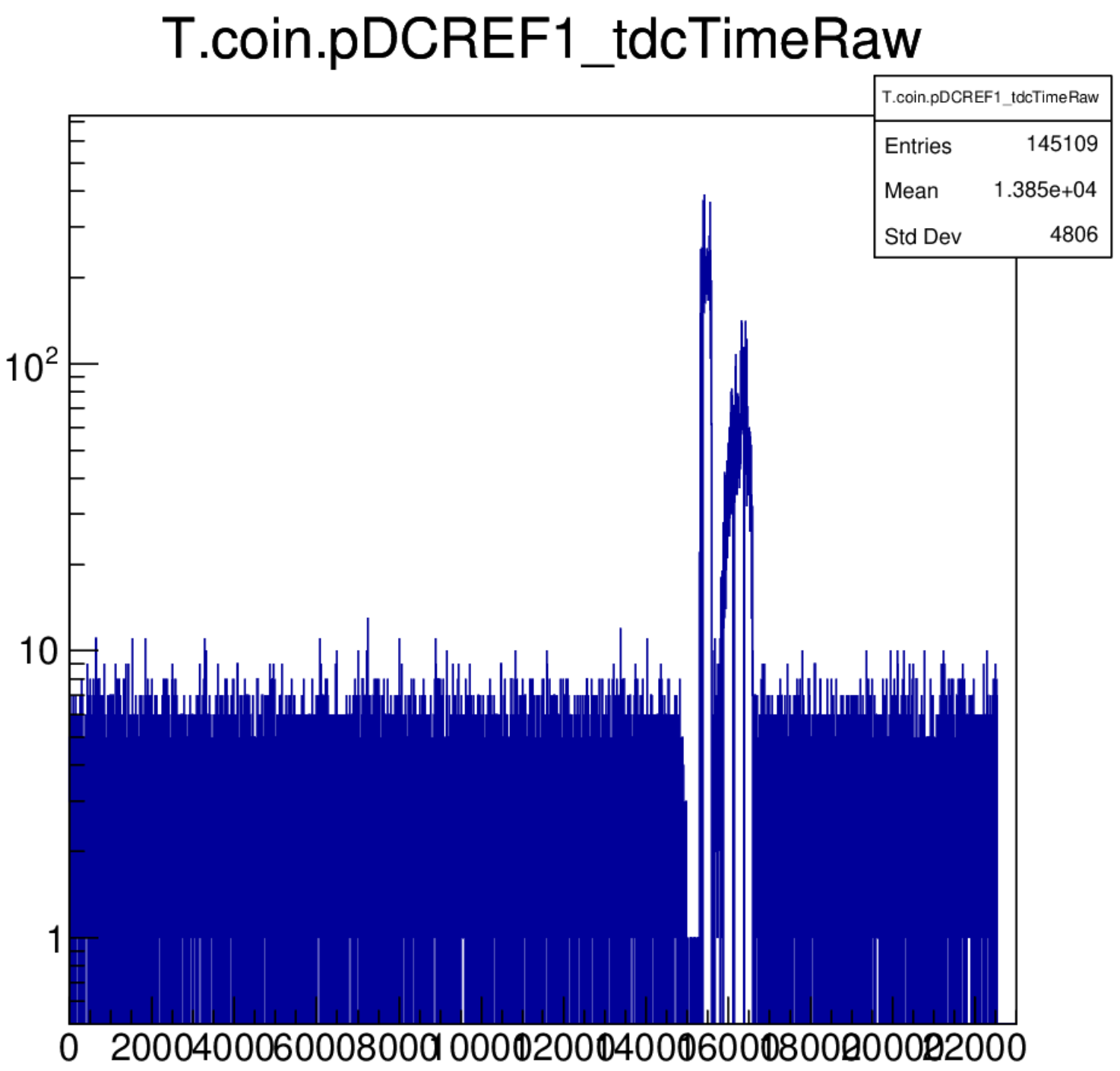
14997

- HeeP Coin
- Start of summer 2022
- 10.549 GeV



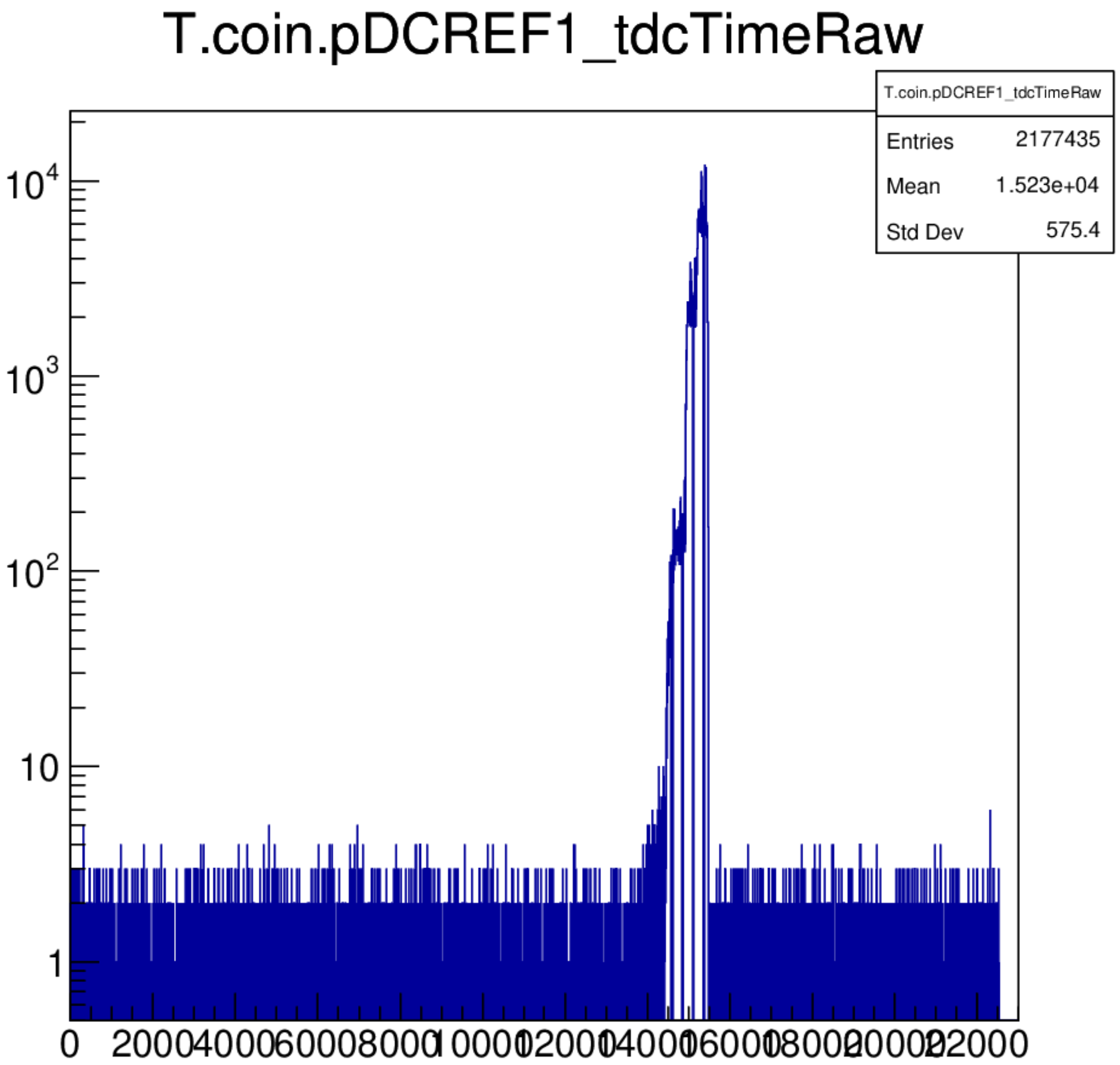
15515

- Prod
- 10.549 GeV



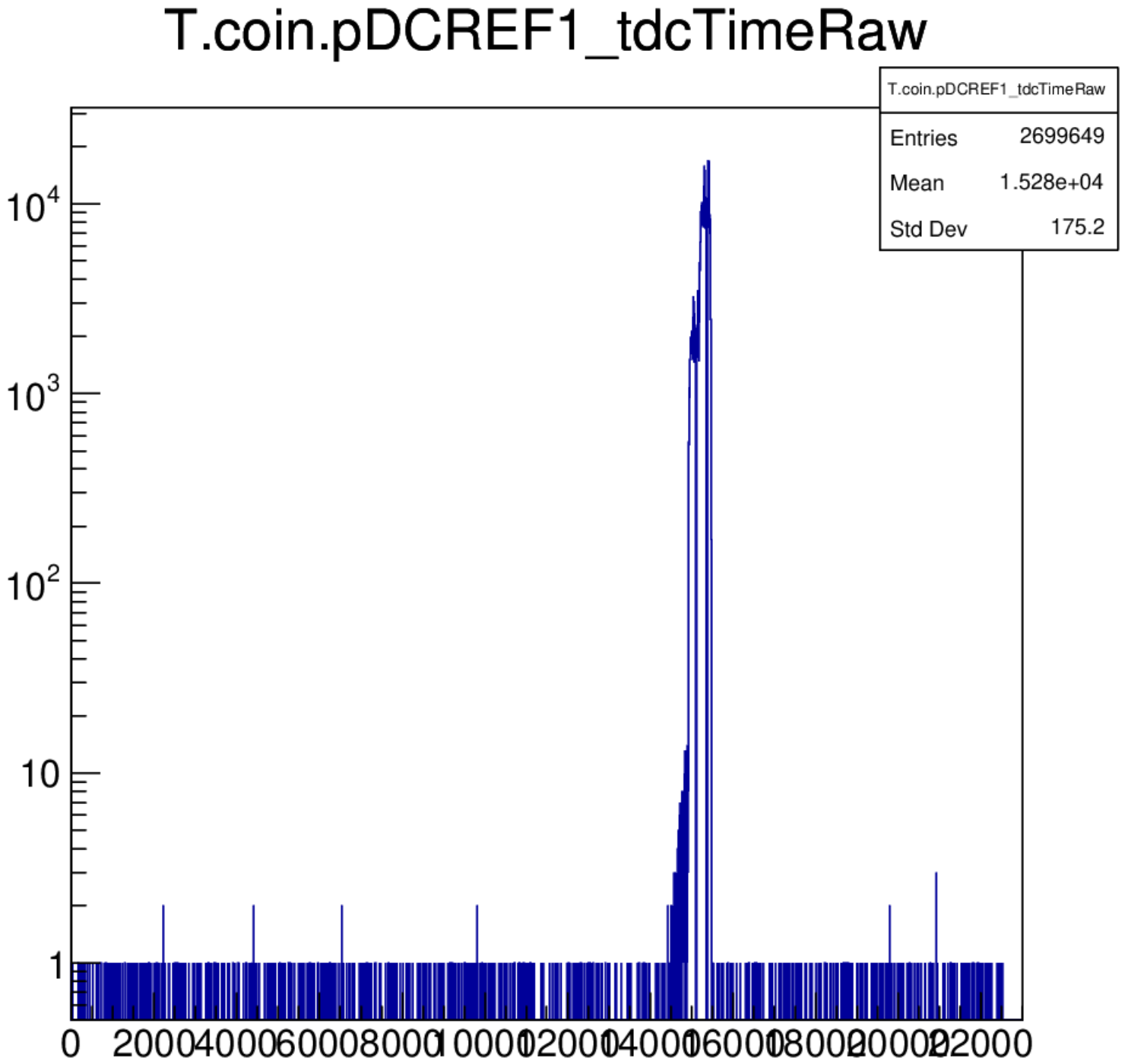
16060

- Heep Singles
- 10.549 GeV



16701

- HeeP Singles
- 6.395 GeV



SHMS Conclusions

- Suggested reftime cuts
  - ¾ trig
    - adcrefcut = 5100
    - tcdrefcut 1 and 2 = 4200
    - dc_adcrefcut = 14400
  - EIREAL trig
    - adcrefcut = 4400
    - tdcrefcut = 3800
    - dc_adcrefcut = 14200