

# Heavy Flavor Tools

**Updates**

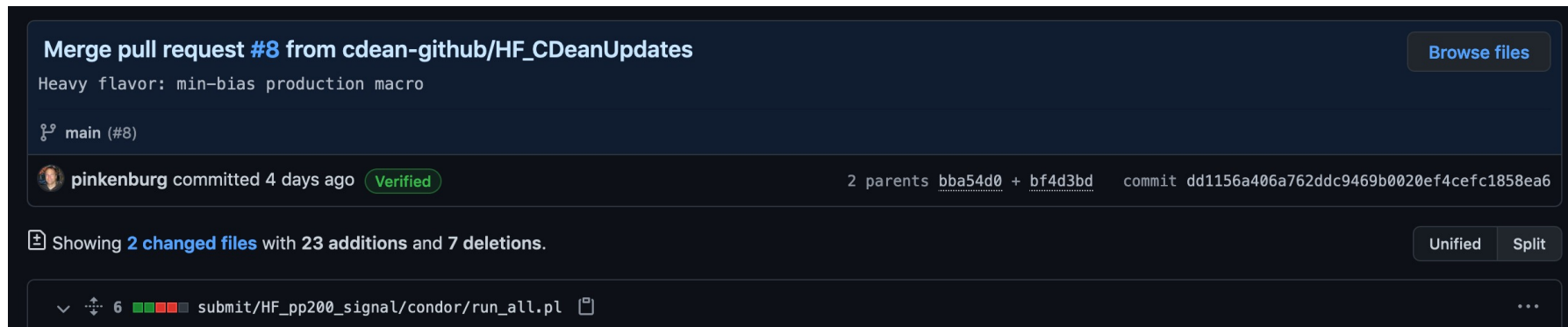
**Cameron Dean**

05/03/2021

HF TG Meeting

# Min-Bias Production

- New macro was merged late last week
- Everything should be in place for production request tomorrow
- How many events do we want? 10 million?



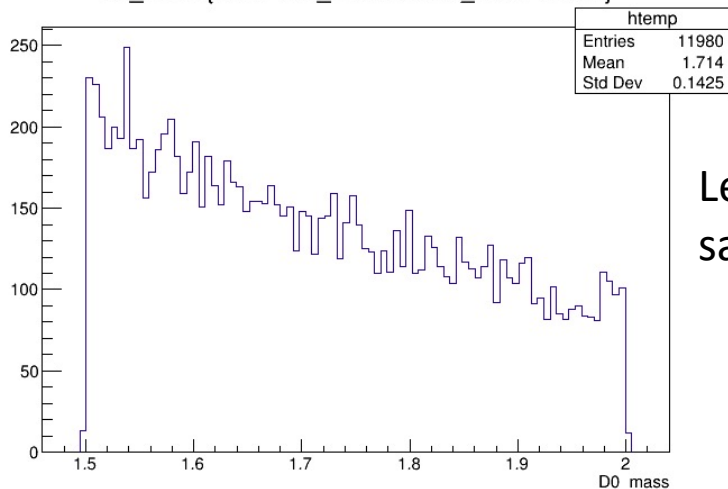
- Updates from last meeting were pushed **almost** pain free
- New clang updates do not like fixed-length arrays in function declaration with lengths declared outside the function
- Needed to rewrite parts of the package to use vectors instead
  - **Lots of arrays were declared, especially for intermediate states**
  - **This is still in testing stage to ensure all user variables are passed correctly**
- Good news: The decay parser is implemented and passing variables properly, this is a significant simplification for users
- Bad news: With vectors, example scripts will no longer be backwards compatible

# Next steps

- After confirming event reconstruction is behaving, DecayFinder and AntiTrigger will be merged into KFParticle as separate tools
- These two packages will allow to make signal-rich or signal-deficient samples
- New parser simplifies like-sign background studies as well
  - E.g. all you need is

```
"kfparticle->setDecayDescriptor("B_s0 -> {J/psi -> mu^+ mu^+} pi^+ pi^+")
```

```
D0_mass {1.5 <= D0_mass && D0_mass <= 2.0}
```



Left – Example reconstruction of min-bias test sample with  $D^0 \rightarrow K^- \pi^+$  events rejected