Finalizing the switch to Ultra Legacy samples

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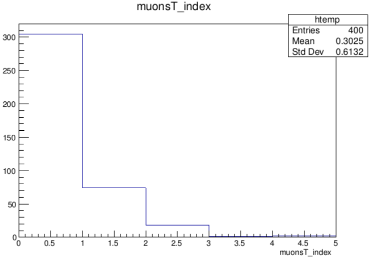
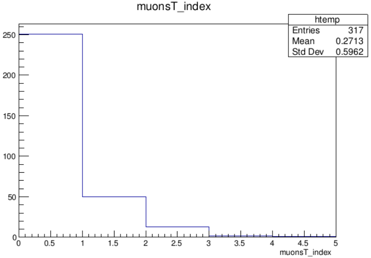
Current situation

- Need to finalize muon selection
- Need to apply Golden JSONs to data
- Need to download the datasets

Muon selection

- Need to decide which kind of isolation to use
- Two options:
  - relative mini Isolation, helps to recover muons in boosted/high-jet-multiplicity environments
  - relative Particle Flow isolation, comes with centrally-provided SF
- Relative miniISO gives us +20% muons in signal events
- **We need to make a choice**





How to deal with NanoAOD

- We realized we can run on NanoAOD in plain ROOT with no need to pass through CMSSW (i.e., no need for global tags)
- We have to apply Golden JSONs to data to only keep the good lumi sections
- This is done in Duncan's framework, we can learn from that

Download of NanoAOD samples

- I am able to run Duncan's script, edited by ZhangYu with the samples we need
- I am currently downloading 2018 samples
- I get errors from time to time, trying to understand them
- There is no 2018 D era sample! See my post on CMSTalk
  - They recommend to use Data.allowNonValidInputDataset = True
  - This is done in CMSSW but we don't want to do so
  - Not sure how to deal with this, should probably iterate on CMSTalk

Conclusions

- I really want to move forward and repeat previous studies/perform new studies
- Let's try to finalize the missing items today
- Discussion!