



Intermittency update

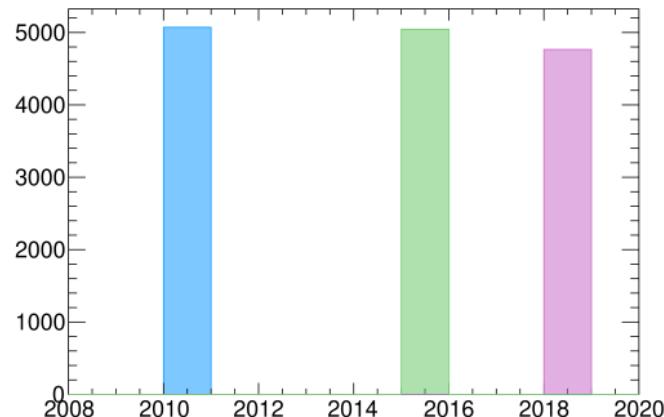
PAG-EbyE - 2025-10-25

Salman Khurshid Malik, Ramni Gupta
Department of Physics, University of Jammu

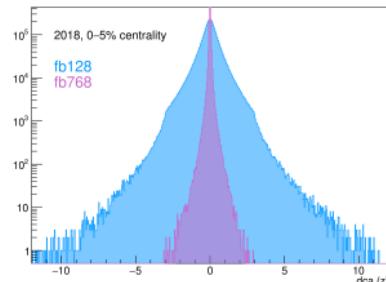
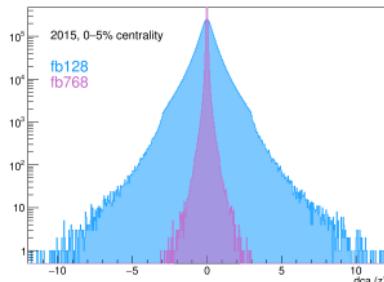
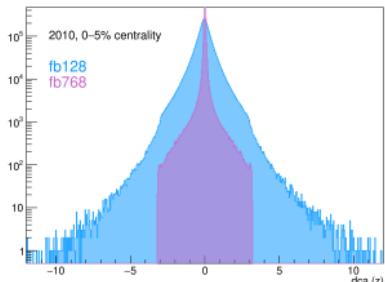
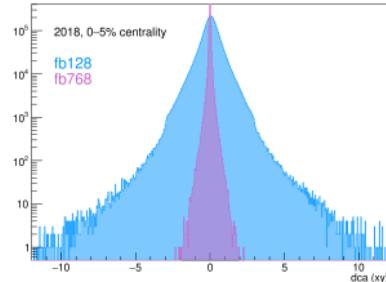
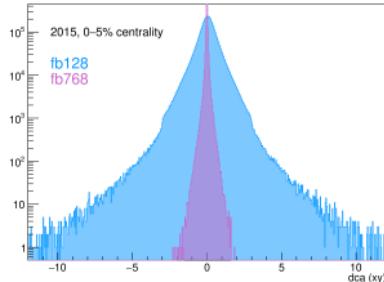
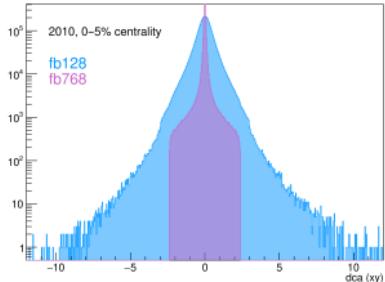
Filterbits QA

Dataset

- Comparison of filterbit QA results.
- HIJING three datasets: **2010 (2.76 TeV)**: LHC11a10a_bis, **2015 (5.02 TeV)**: LHC20j6a, **2018 (5.02 TeV)**: LHC20e3a.
- ~ 5000 events for each dataset.
- Centrality: 0–10%.
- $|v_z| < 10$, $|\eta| < 0.8$.



DCA_{*xy*, *z*} comparison



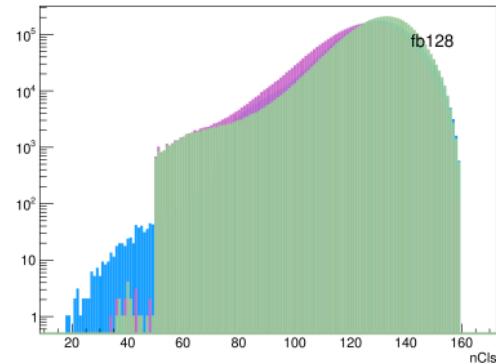
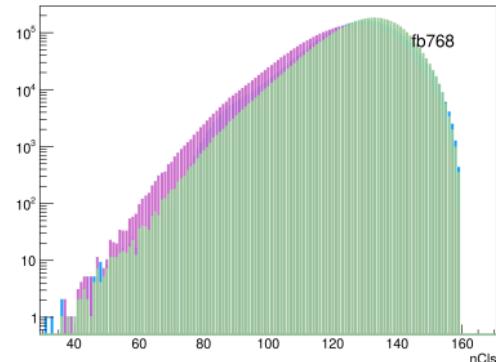
TPC #clusters comparison

Definition of fb128.

$|dca_{xy}| < 2.4, |dca_z| < 3.0,$
 $TPCNClusters > 50,$
 $\chi^2_{\text{per TPC cluster}} \leq 4.$

- The method used to check filterbits in AODs:

```
AliAODTrack *track =  
    static_cast<AliAODTrack  
*>(fAOD->GetTrack(i));  
track->TestFilterBit(128);
```

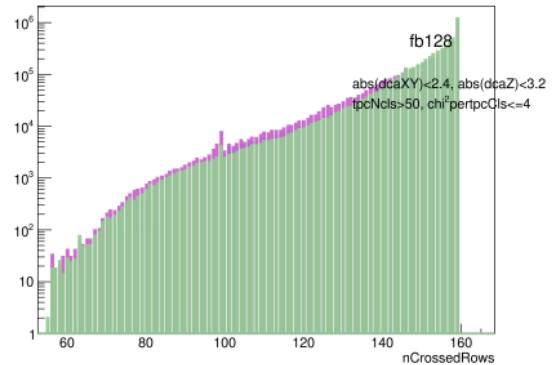
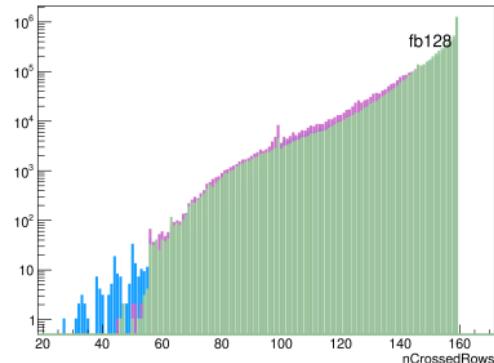


TPC #crossed rows comparison

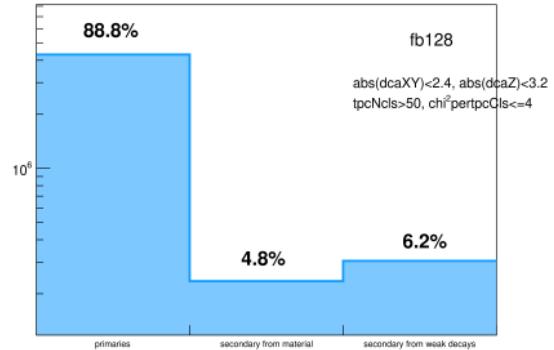
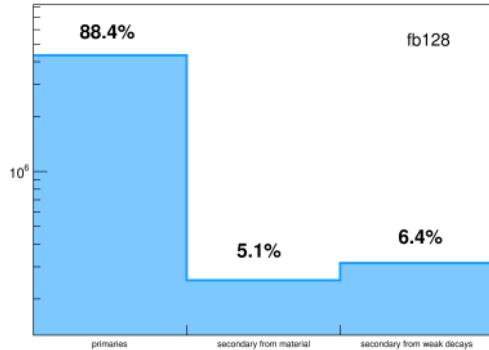
- The method used to check filterbits in AODs:

```
AliAODTrack *track =  
static_cast<AliAODTrack  
*>(fAOD->GetTrack(i));  
track->TestFilterBit(128);
```

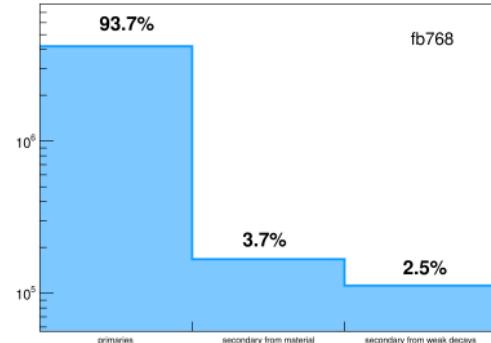
- does not work for 128.
- Applying cuts manually does work.



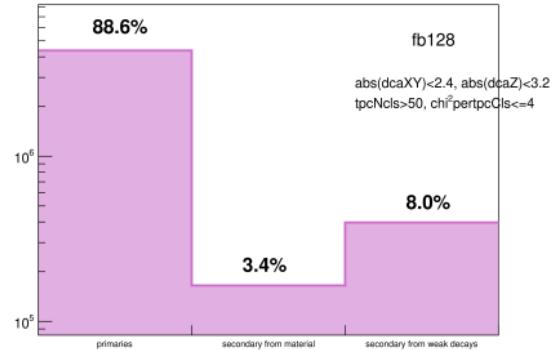
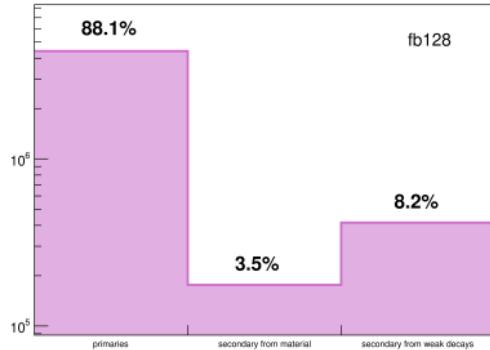
Contamination in filterbits



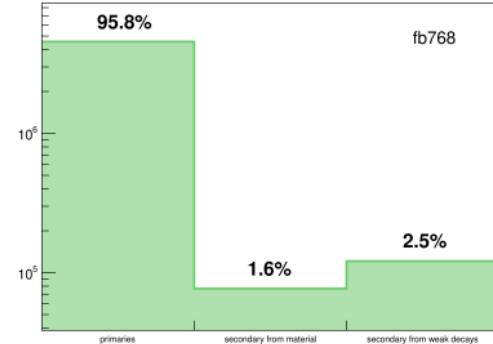
- for 2010 dataset.
- secondaries from material and weak decays both larger in fb128.



Contamination in filterbits



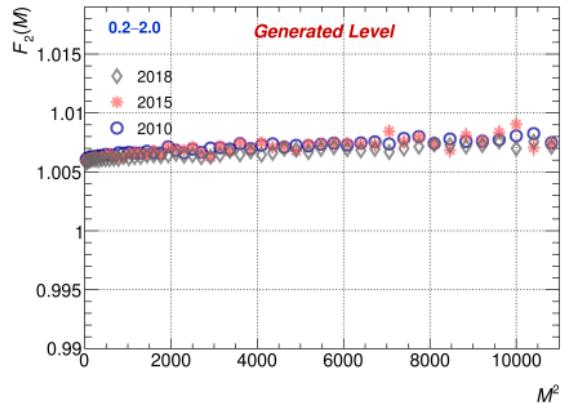
- for 2015/2018 dataset.
- secondaries from material and weak decays both larger in fb128.
- fb768 works fine with less contamination.



HIJING Closure

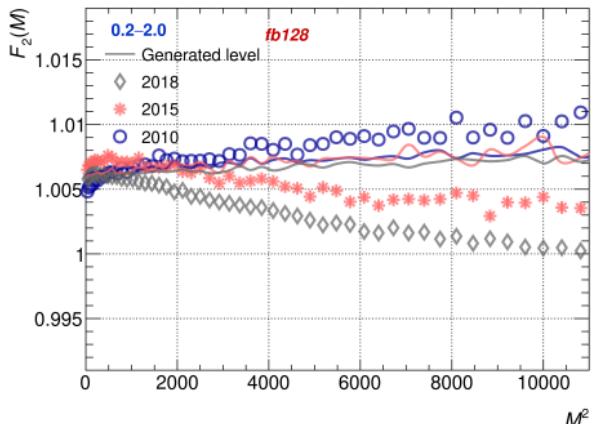
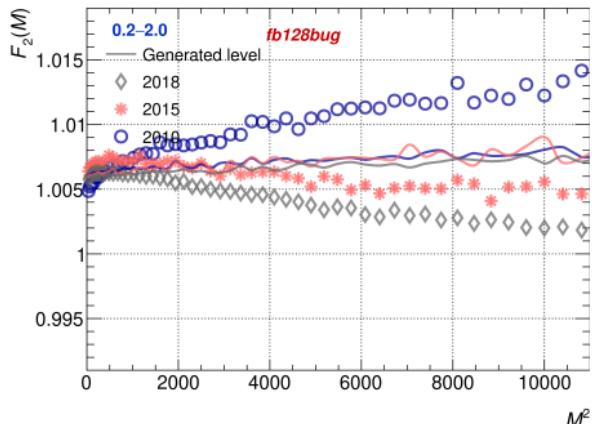
Dataset

- HIJING:
 - **2010 (2.76 TeV)**: LHC11a10a_bis,
 - **2015 (5.02 TeV)**: LHC20j6a,
 - **2018 (5.02 TeV)**: LHC20e3a.
- 0–5% centrality, $|v_z| < 10$, $|\eta| < 0.8$.



Generated Level ($0.2 \leq p_T \leq 2.0$)

fb128 ($0.2 \leq p_T \leq 2.0$)



- *fb128* (right) is the actual closure with cuts in *fb128* applied manually.