



**ALICE**

# ITS for Run 2

Massimo Masera

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# Preparation for Run 2

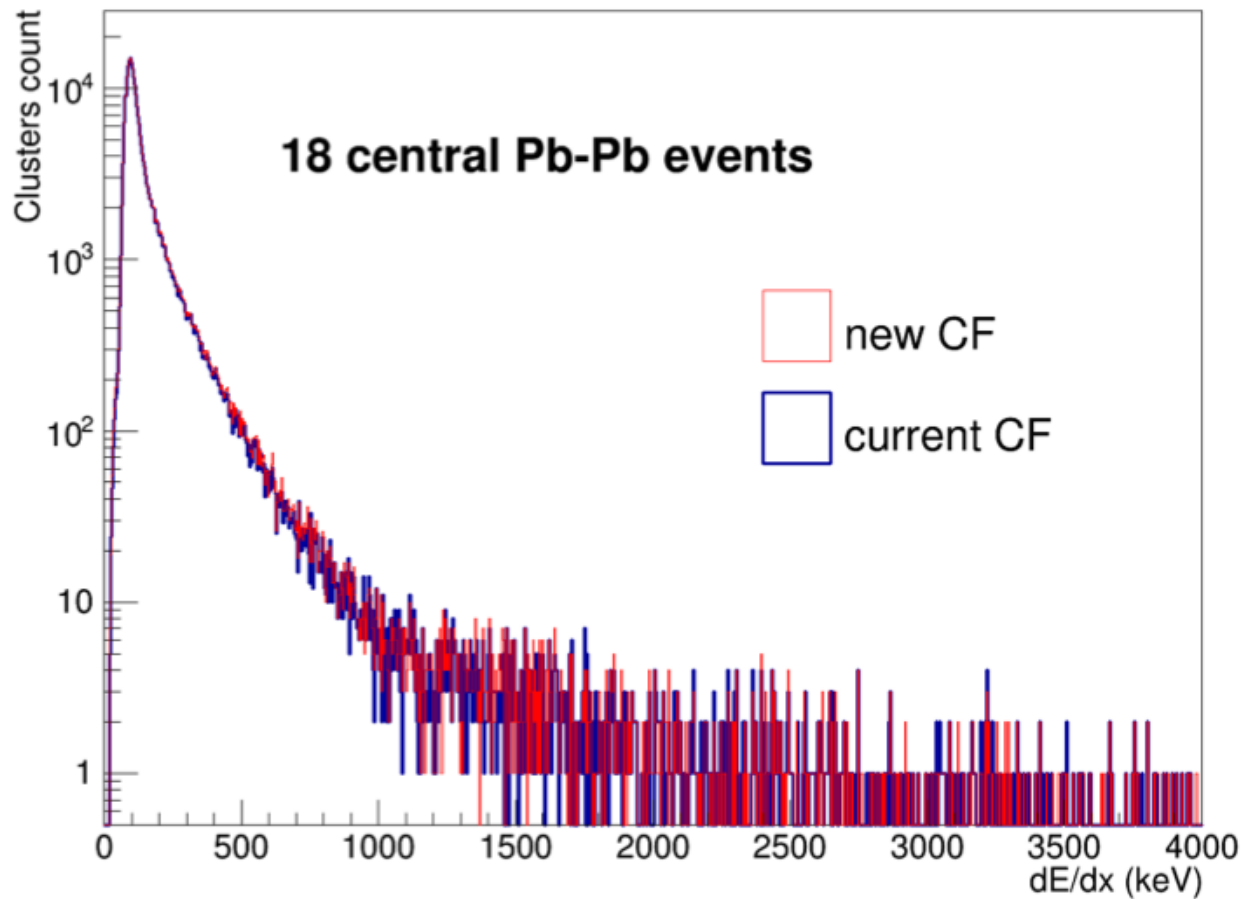
- ITS code is rather stable and in principle we do not expect changes for Run 2 ... With few exceptions:
- SPD Detector Algorithms need to be revised because
  - ✓ SPD-PHYS: 22.9 s at EOR to finish (goal 10 s)
  - ✓ SPD-VERTEX 13.9 s at EOR to finish
- Solutions:
  - ✓ SPD-VERTEX porting to HLT is under way (See C. Zampolli talk yesterday)
  - ✓ Present solution can be used as a backup, with minor modifications to comply with a reduced timeout
  - ✓ SPD-PHYS: current DA builds hitmaps during Physics runs and then looks for noisy channels → it will only build hitmaps. Search for noise deferred to preprocessor stage. Implementation will start shortly

# SDD



- A new SDD cluster finder has been developed (S. Capodicasa – Turin) and committed to the repository: new class `AliITSClusterFinderSDDfast`
- The goal is to have the same cluster identification capability with a sizeable reduction of the CPU consumption in order to be used also in the HLT
- Speed up achieved by:
  - ✓ trying to operate on the cache
  - ✓ eliminating recursive algorithms, widely used in the cluster finder currently in production

# SDD C.F. : impact on reconstruction

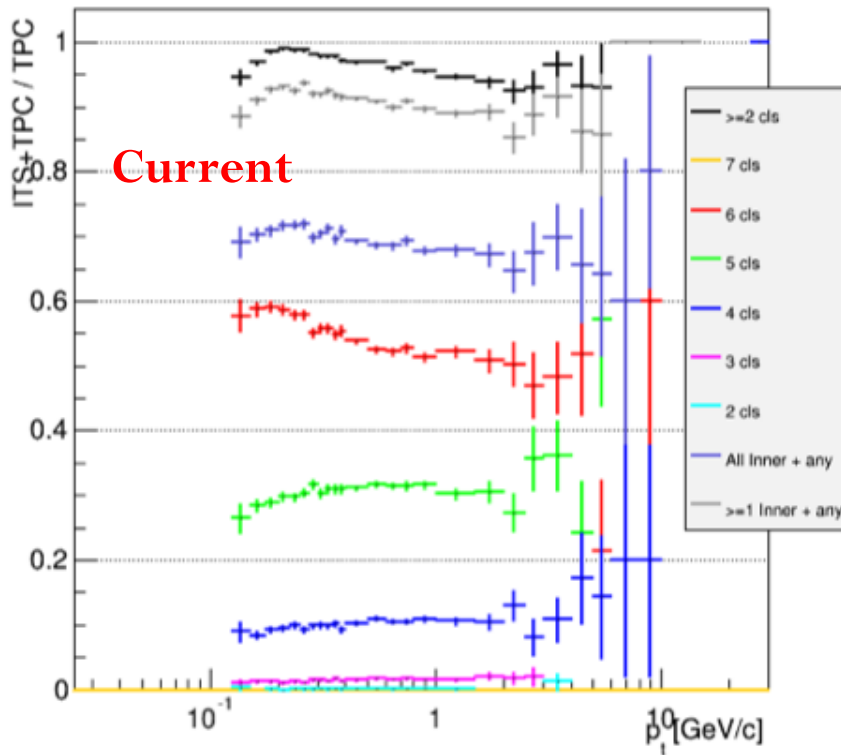


No relevant difference in terms of the  $dE/dx$  measurement between the two CF implementations

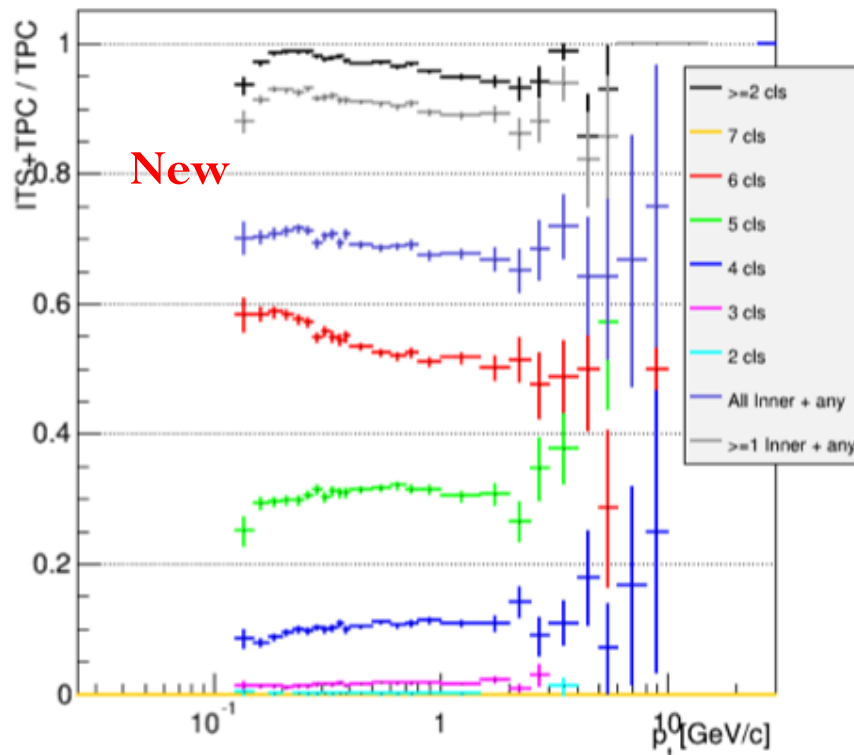
# SDD C.F. : impact on reconstruction



Fraction of prolonged tracks with N ITS points



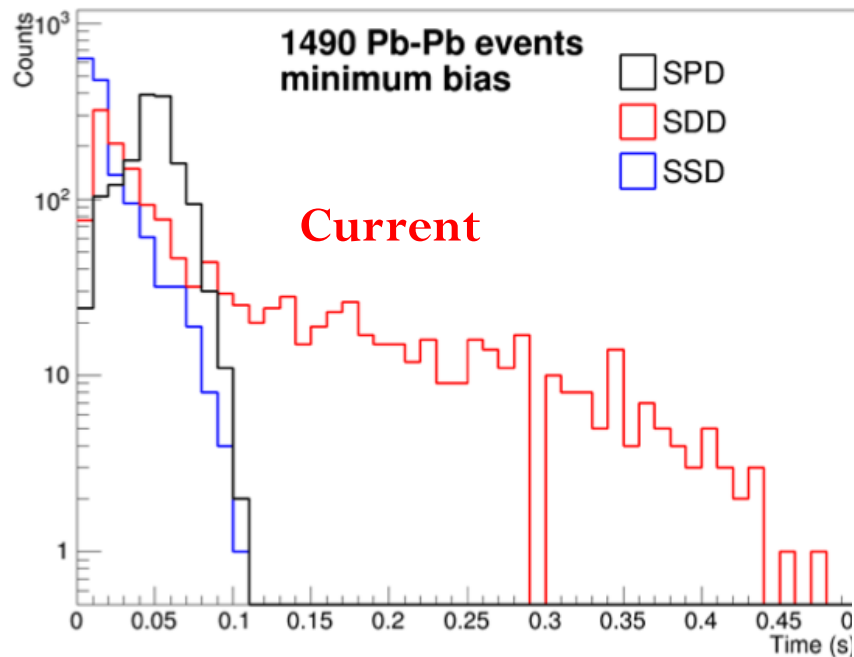
Fraction of prolonged tracks with N ITS points



No effects on TPC to ITS track prolongation

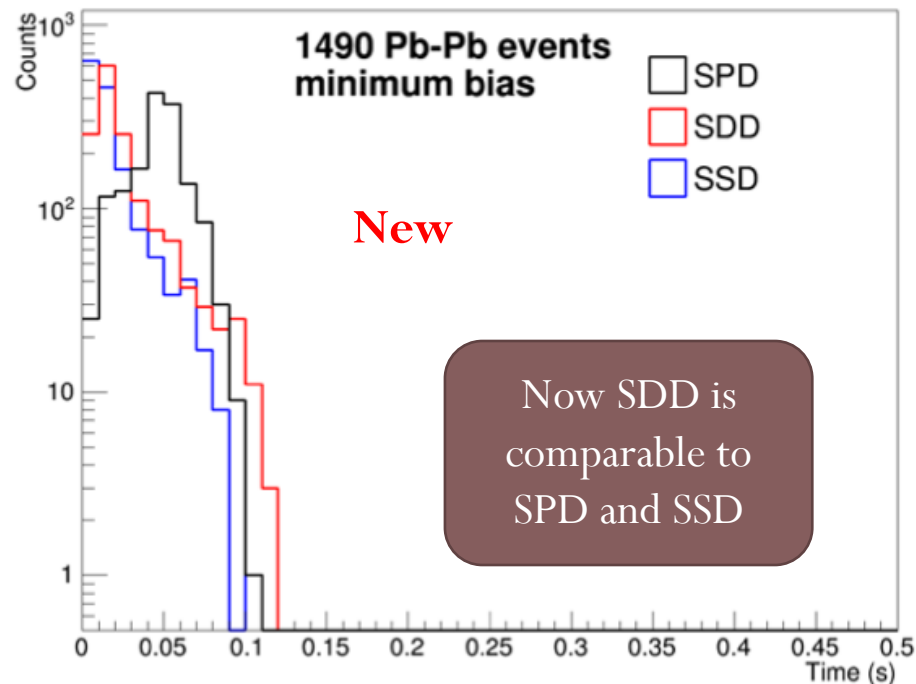
# SDD C.F. : CPU performance

ITS Cluster Finder Time



- ✓ Average speed-up: 3.89x
- ✓ speed-up almost flat with detector illumination

ITS Cluster Finder Time



In progress:  
further comparisons on real data  
and MonteCarlo