

# Efficiency gap forward



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# Tracking defaults in PndMasterRecoTask

dec17p2, master (dec18) & dev

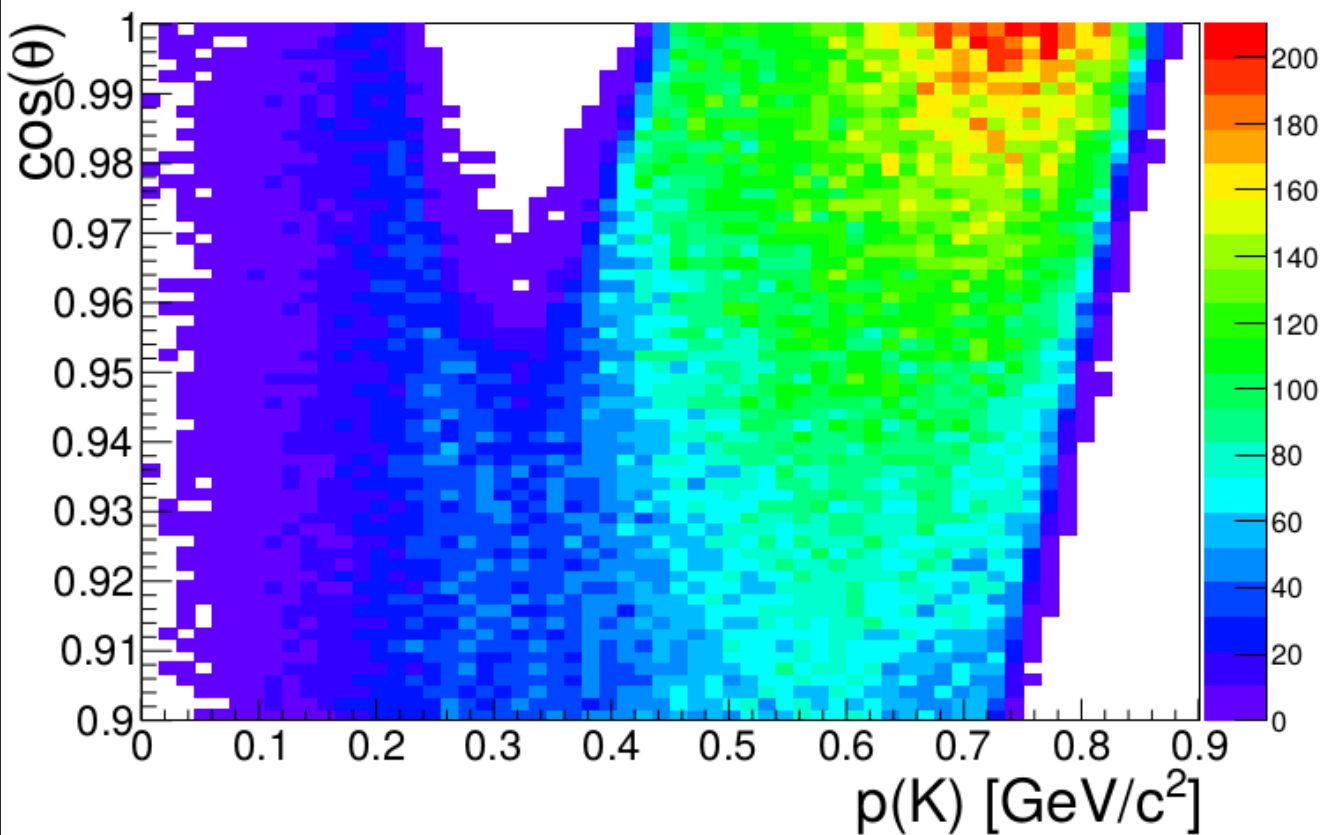
- PndTrkTracking2 + PndSttMvdGemTracking (Gianluigi)
- PndIdealTrackFinder (FtsTrackFunctor)
- PndRecoKalmanTask (genfit1)
- "multikalman" option since master (dec18), however with a bug in FTS tracking part
- "genfit2" option never tested properly
- "filtered" option for PndMissingPzCleanerTask
- "fakeonline" since master (dec18) for extra smearing

# Reported by Iman:

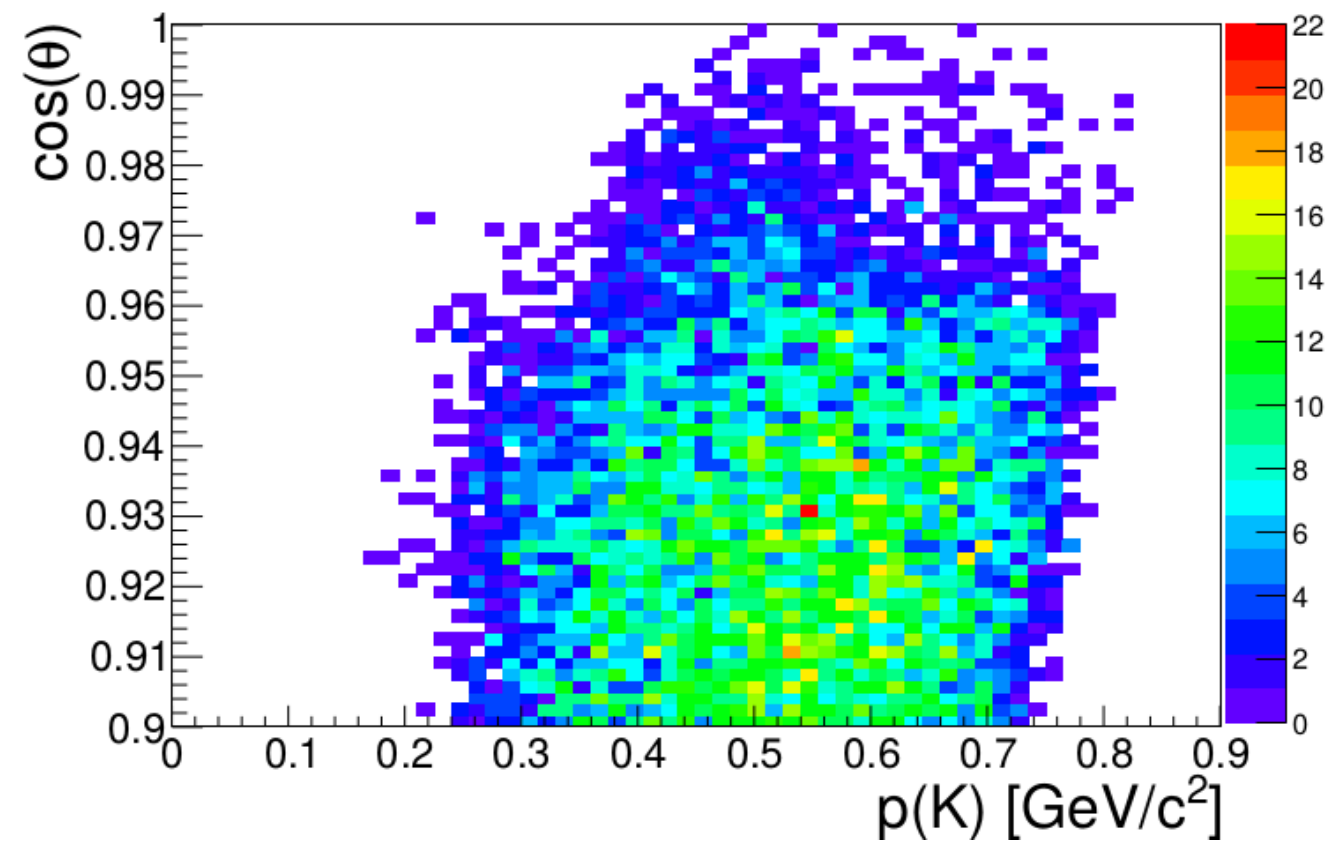
## -- > Ideal Tracking has efficiency gap

release of dec17p2

### Input Events

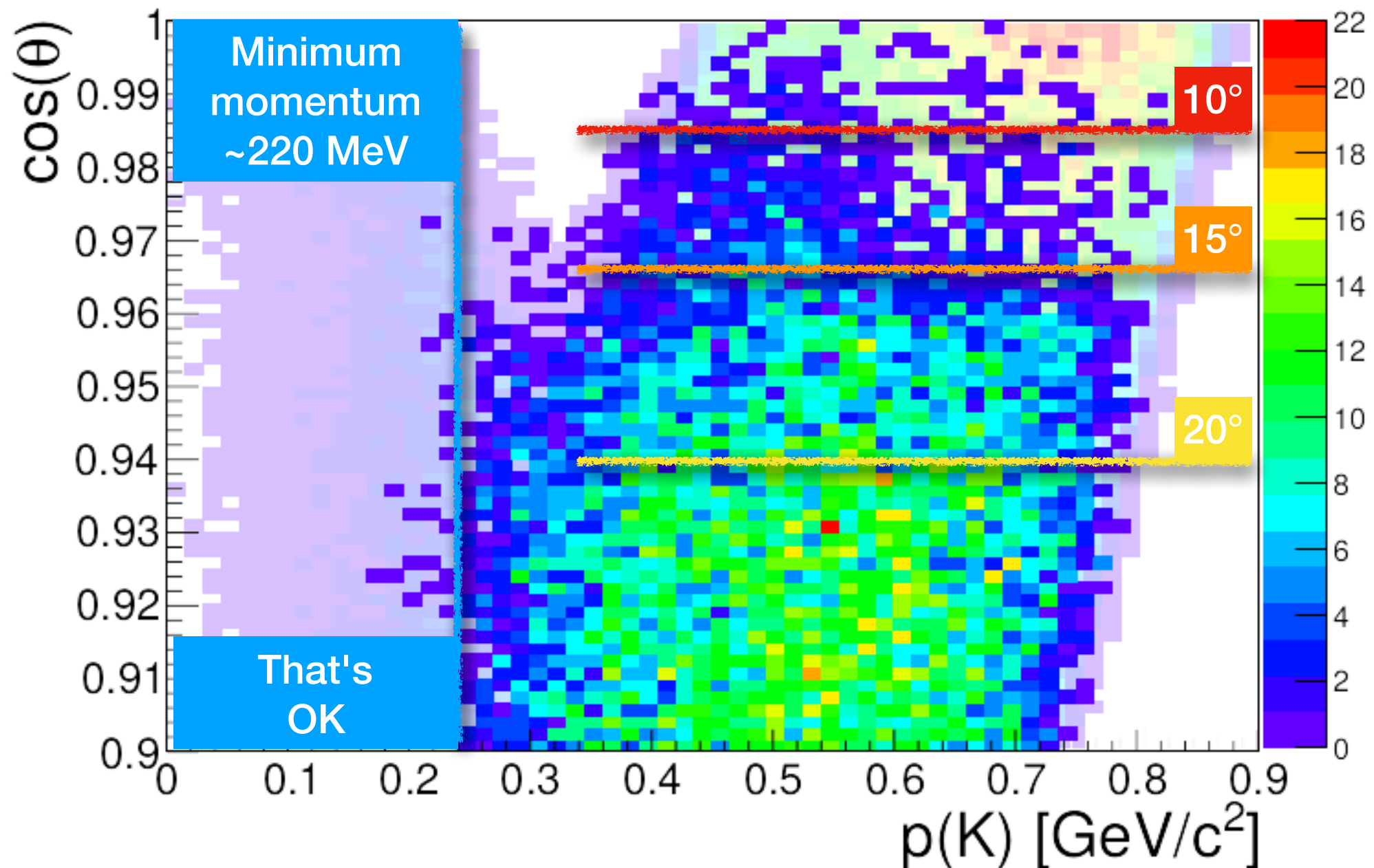


### Reco'd Events



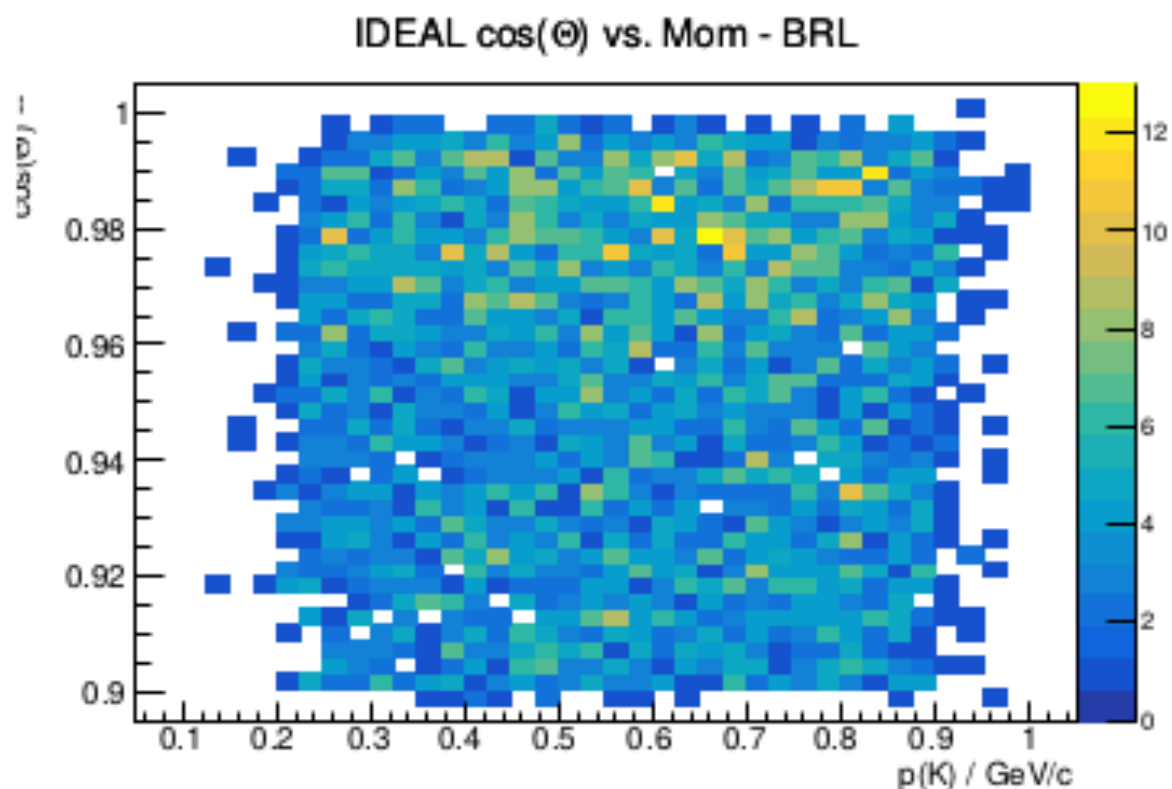
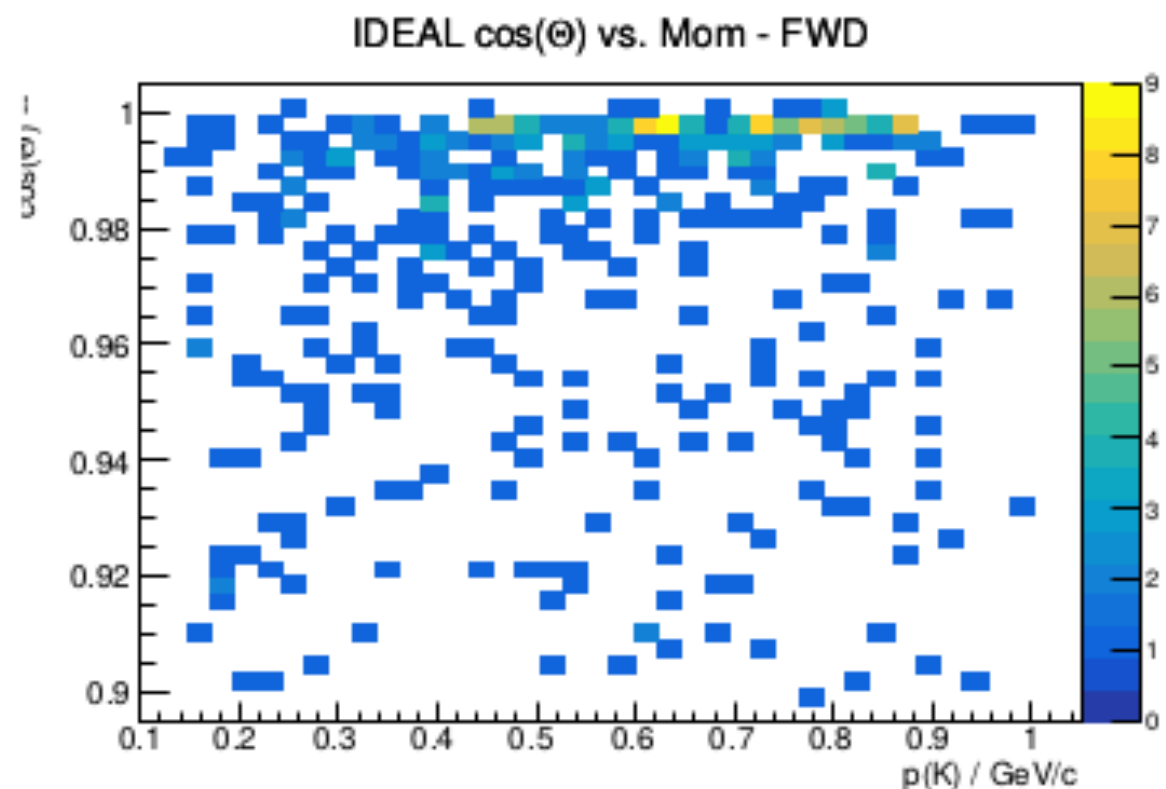
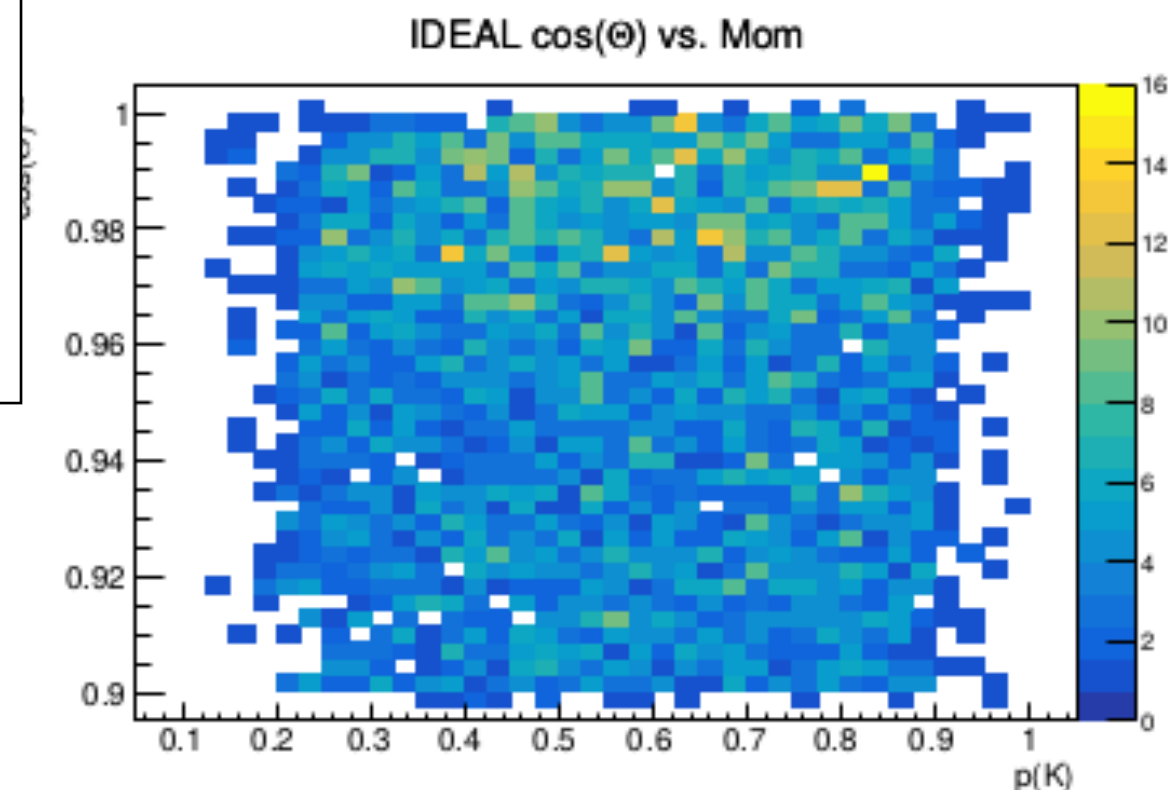
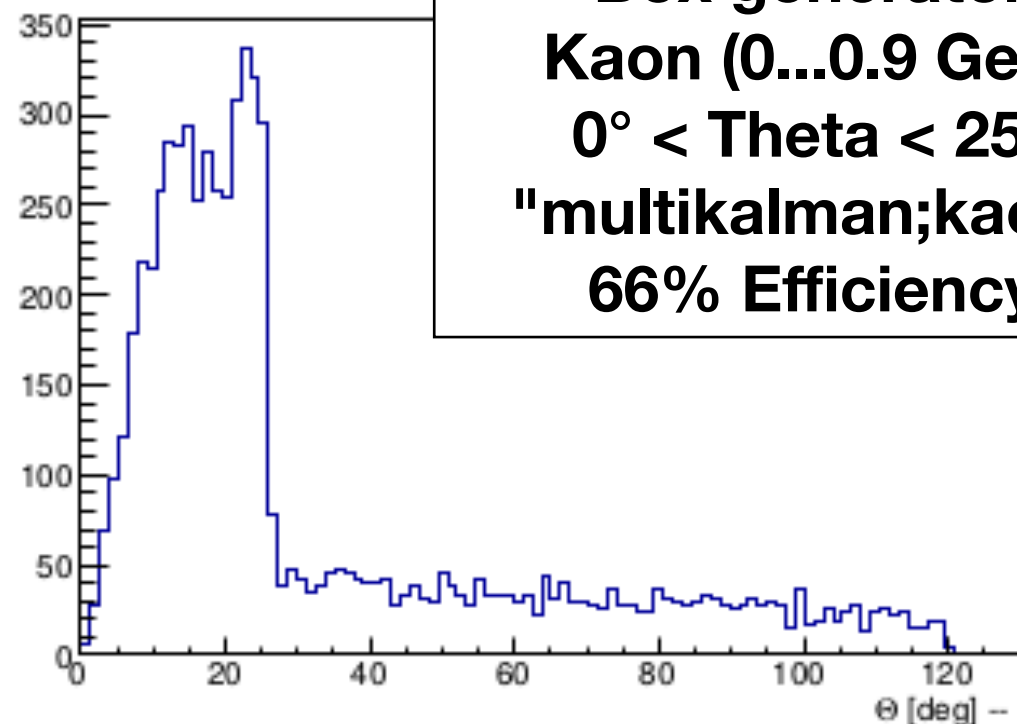
# What is missing?

Shallow angles  
missing



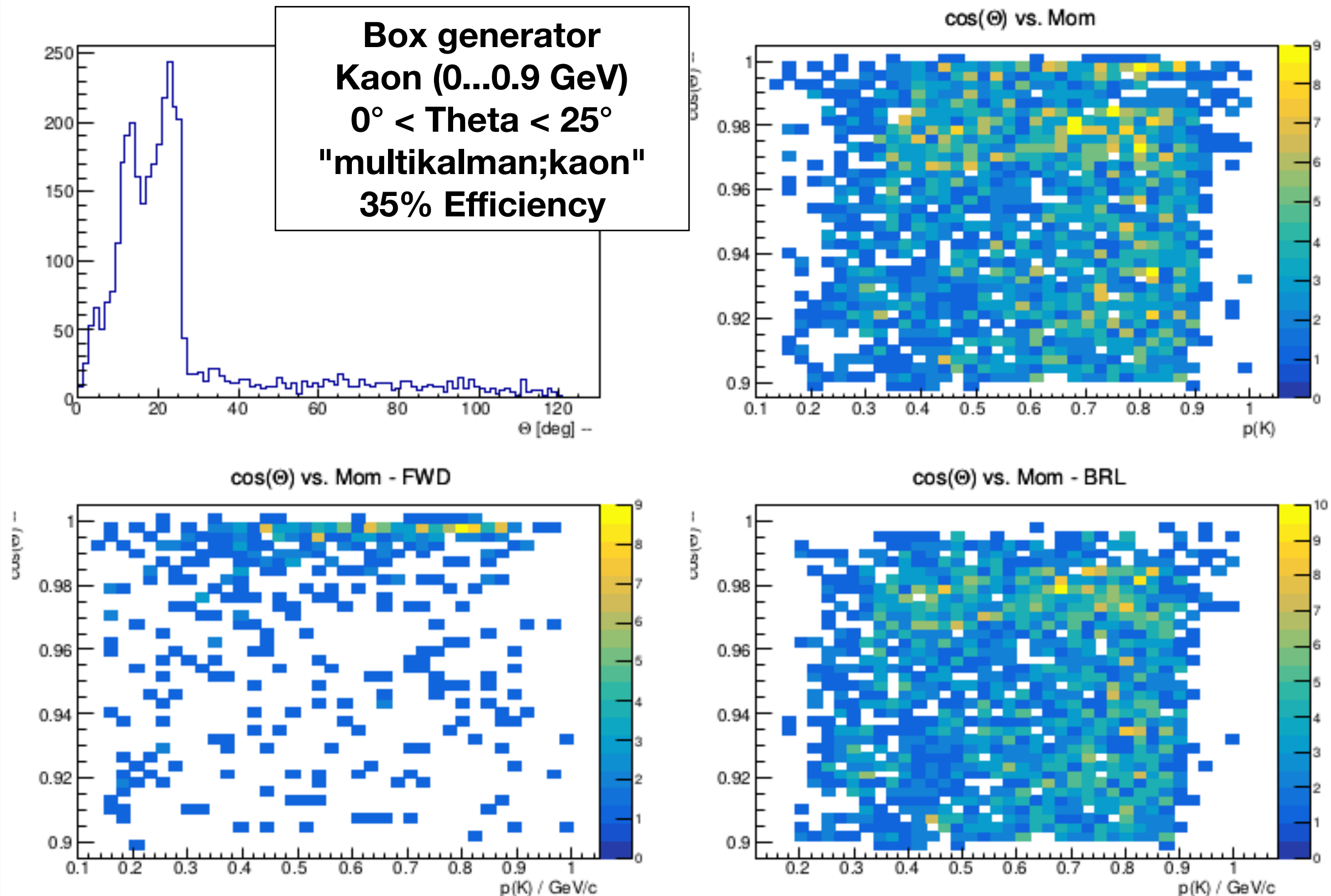
# Some fixes in Multikalman setup later:

Box generator  
Kaon (0...0.9 GeV)  
 $0^\circ < \text{Theta} < 25^\circ$   
"multikalman;kaon"  
66% Efficiency



Barrel & FTS separated by Track first hit.z > 250

# Try without IDEAL pattern recognition\*

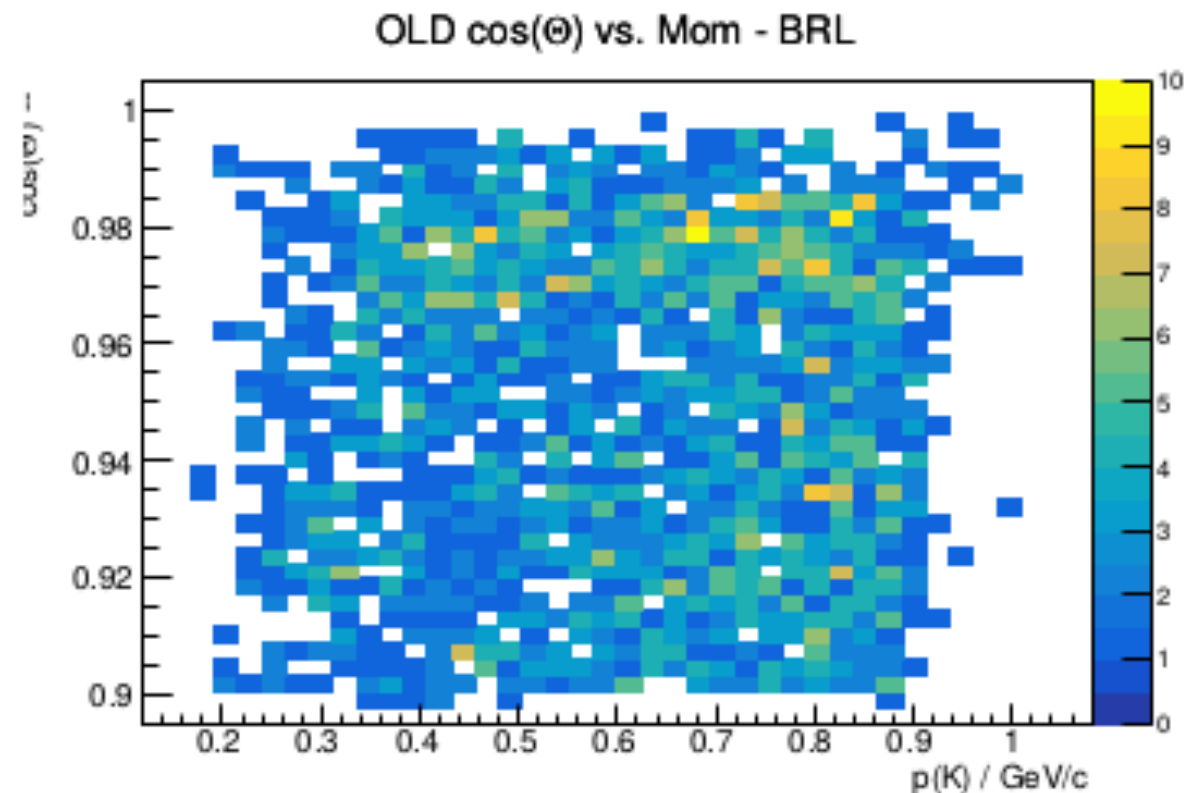
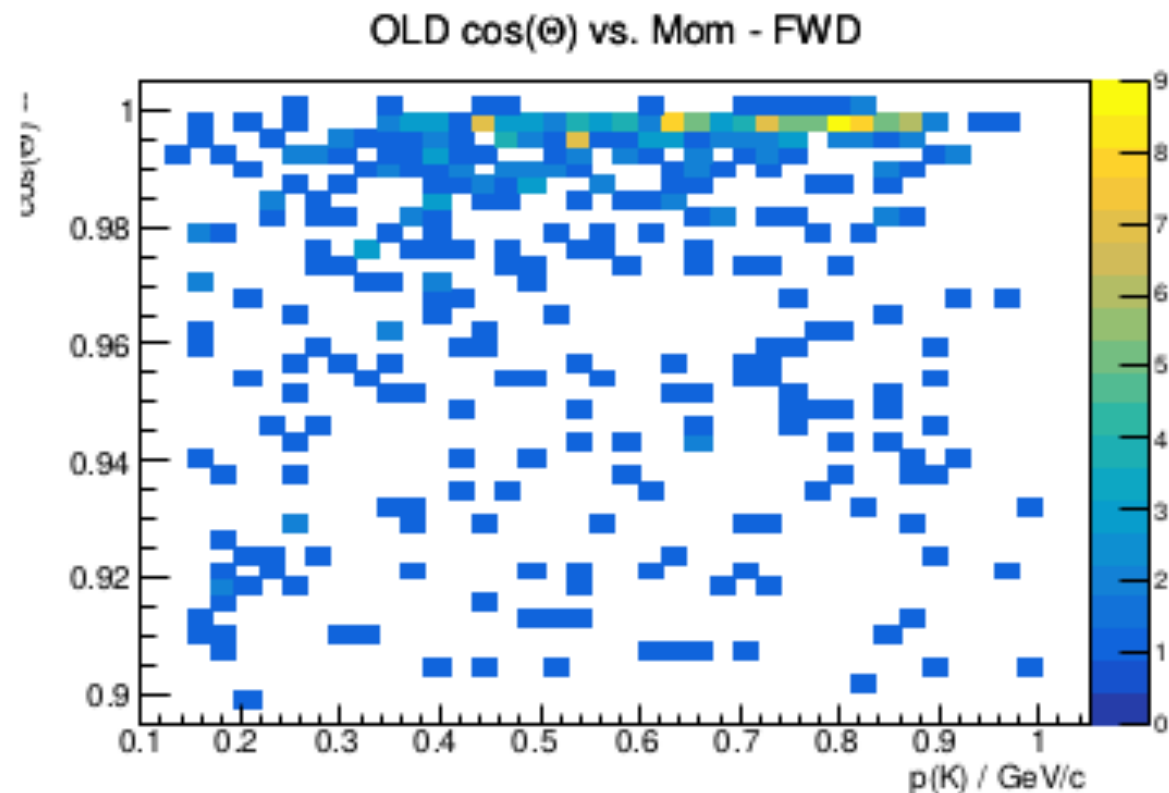
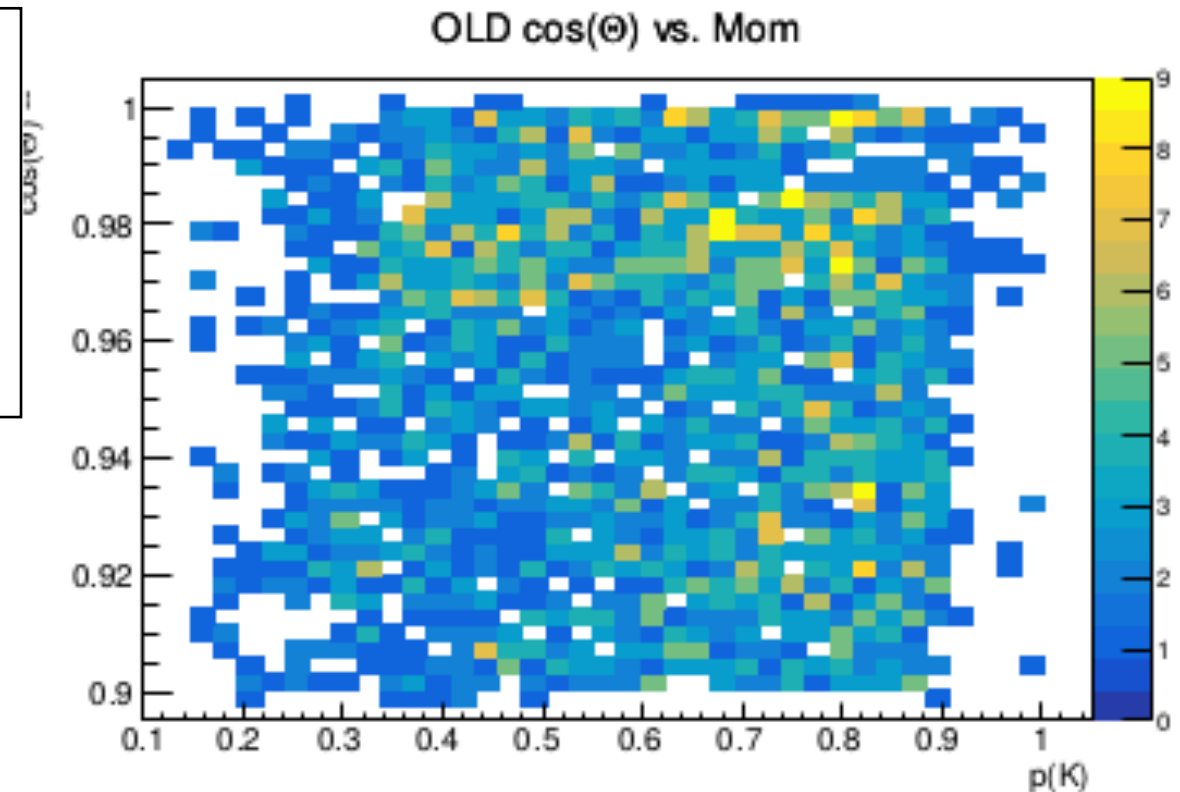
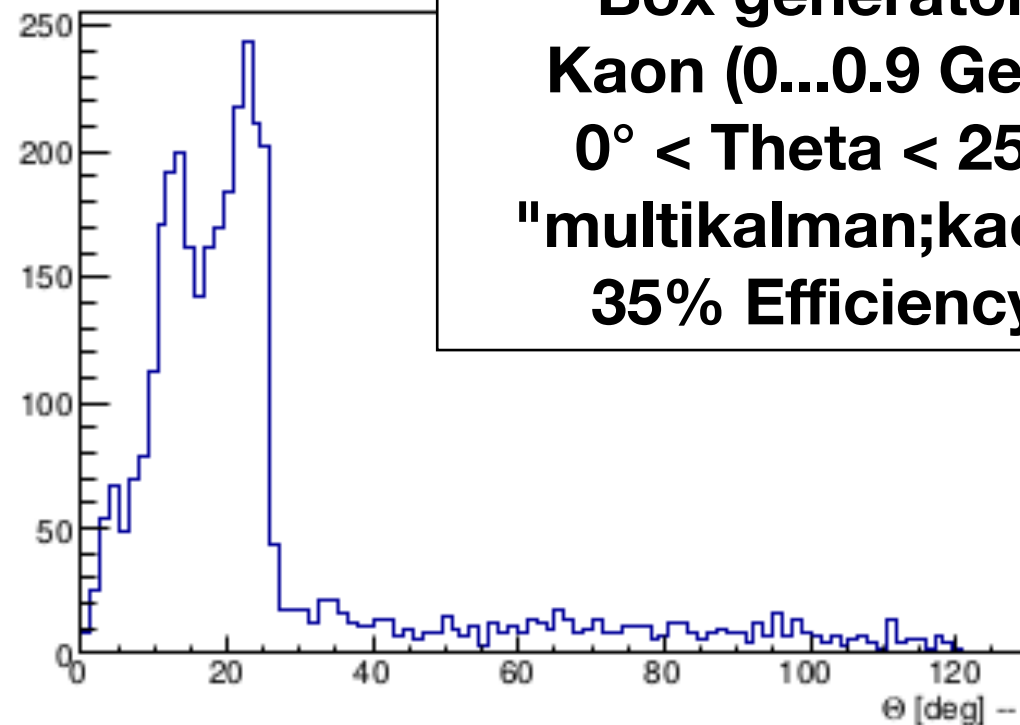


Barrel & FTS separated by Track first hit.z > 250

\*) FTS with IDEAL PR

# Let's see how it was in dec17p2 release:

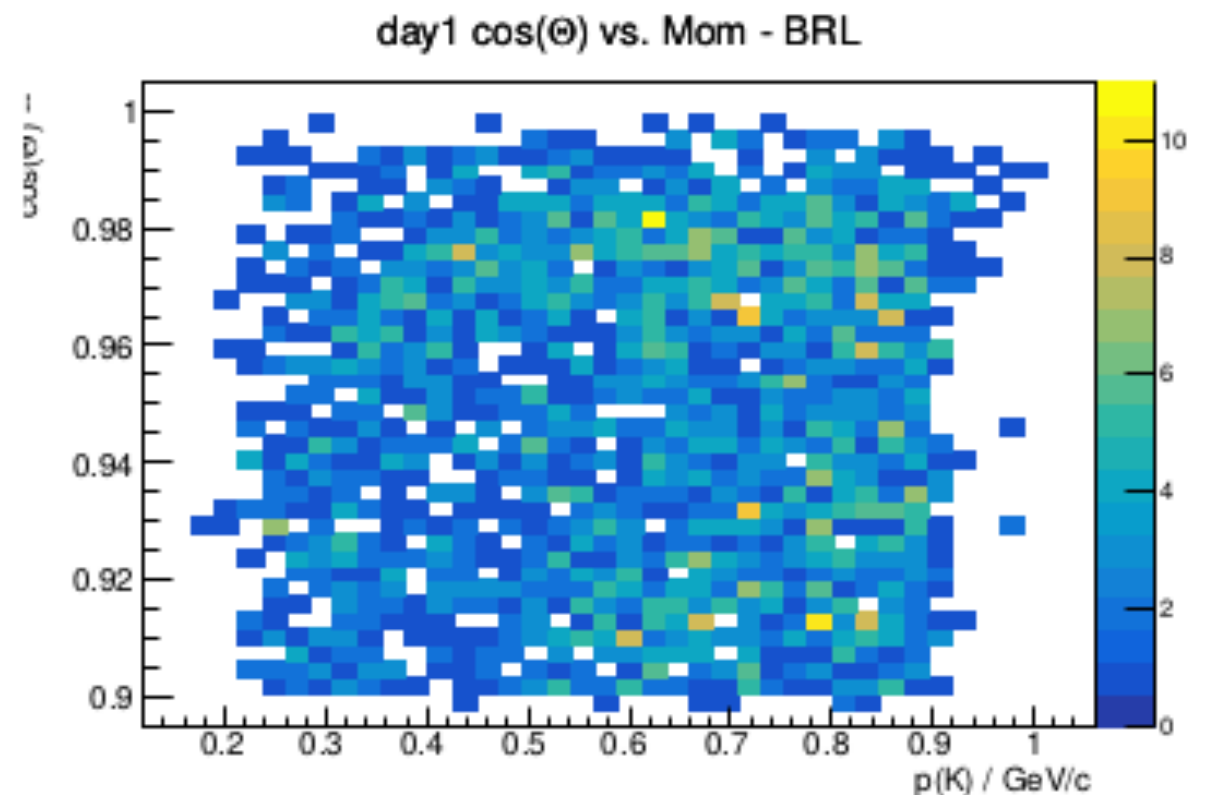
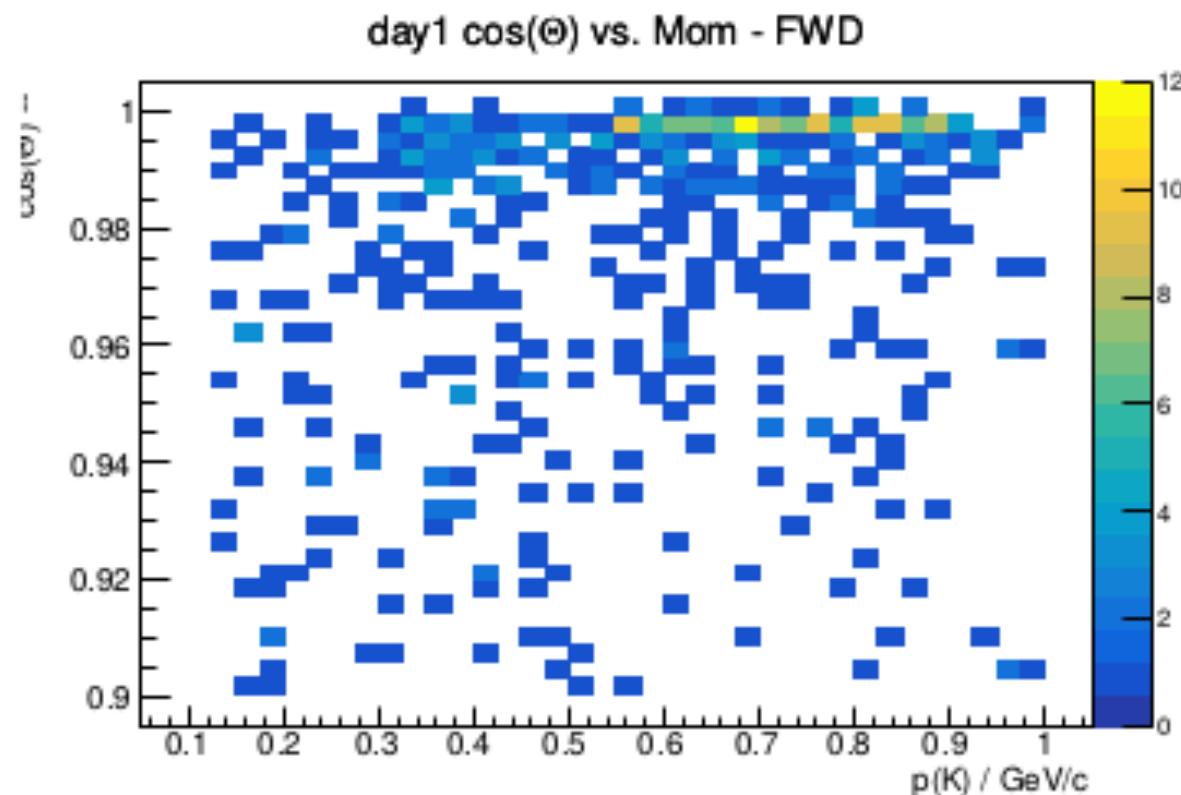
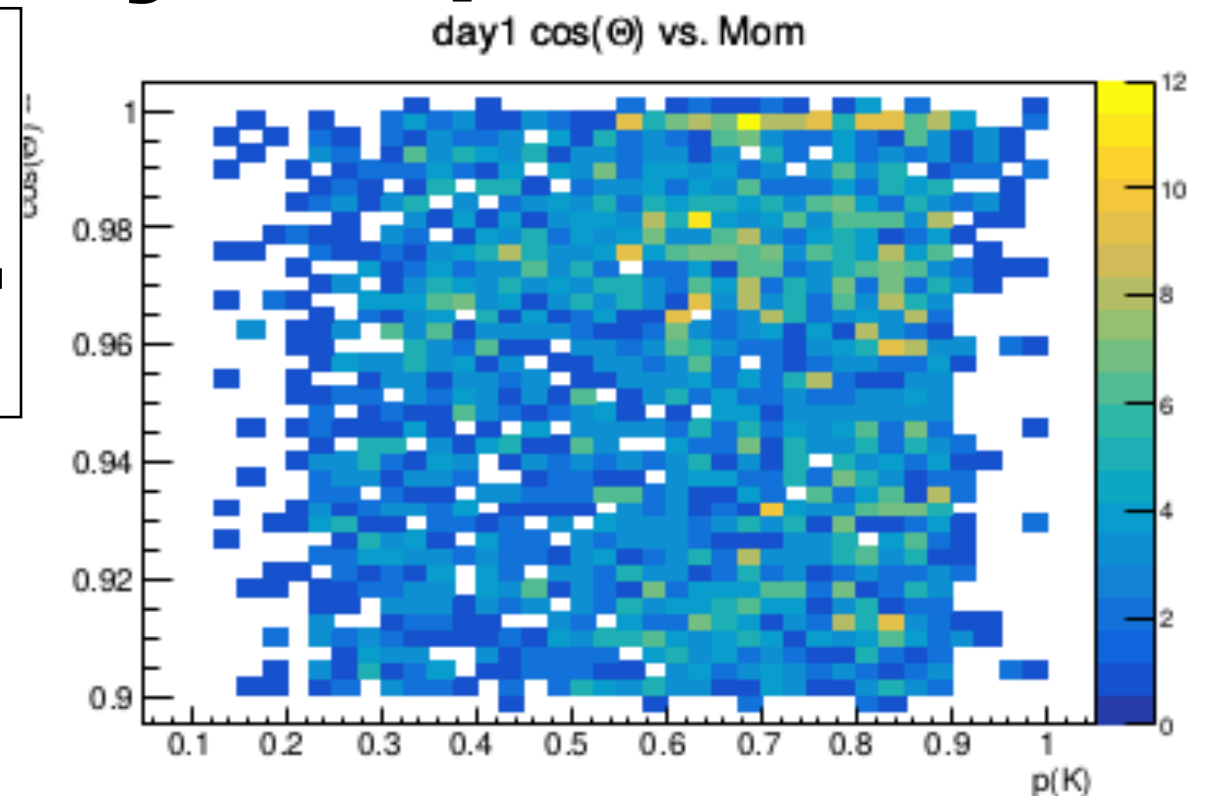
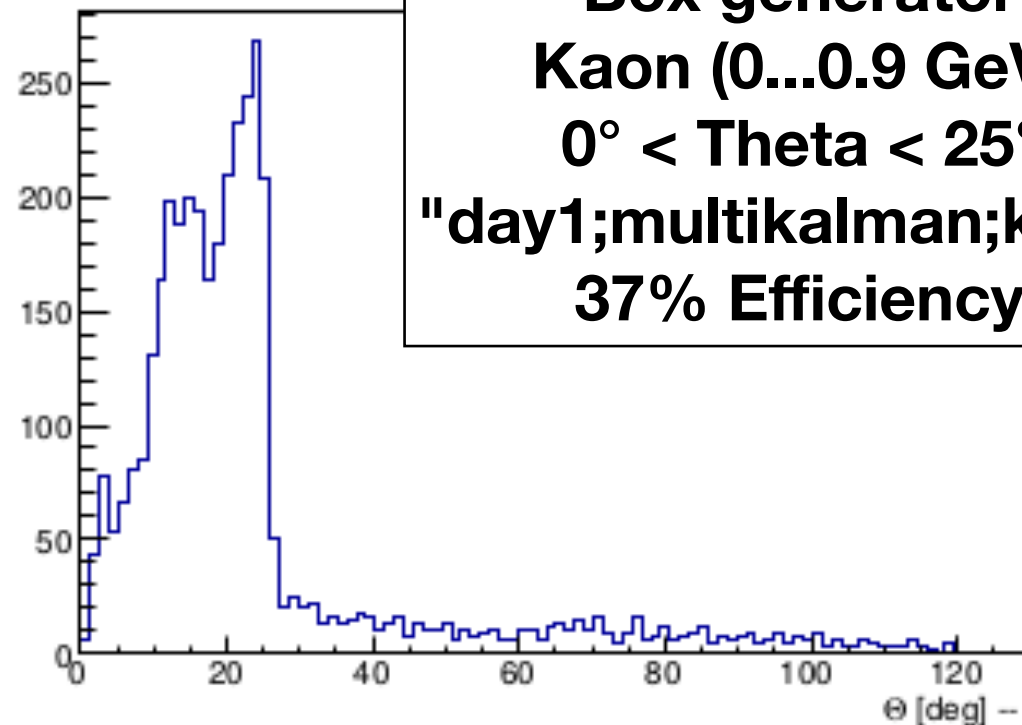
Box generator  
Kaon (0...0.9 GeV)  
 $0^\circ < \text{Theta} < 25^\circ$   
"multikalman;kaon"  
35% Efficiency



Barrel & FTS separated by Track first hit.z > 250

# Now with day1 option

Box generator  
Kaon (0...0.9 GeV)  
 $0^\circ < \text{Theta} < 25^\circ$   
"day1;multikalman;kaon"  
37% Efficiency



Barrel & FTS separated by Track first hit.z > 250



# Remarks:

- No difference between current development branch and old release?
- No Observation of the severe Track loss in forward angles
- FTS still has no active pattern recognition (work in progress)
- Current location of the fixes:

<https://git.panda.gsi.de/ralfk/PandaRoot/tree/ftsmultikalmanfix>