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# Common Particles

## Discussion

Please discuss the changes at Task 21560 [↗](#).

## Proposed changes wrt DaVinci v28r4p1

We propose a series of changes that should have little effect on physics (or for the better), align the stripping more with the HLT, and improve the stripping timing and rate.

All the changes proposed in this page are open for discussion. We would like to introduce as many as possible in Stripping16, to allow testing on August data. Things can still change for September data. See Patrick's presentation at 19/7/2001 PPMTS [↗](#). In short we suggest the following changes, committed to svn revision 126155:

- New Default Tracking cut removing clones on **all** Tracks.
- New default  $PT > 250\text{MeV}$  and  $IPCHI2 > 4$  cut for all charged basic
- Added new StdAllLooseXxx and StdAllNoPIDsXxx (Xxx=Pions,Muons,Kaons,Protons,Electrons) and StdAllVeryLooseMuons that do not implement  $PT > 250\text{MeV}$  and  $IPCHI2 > 4$  cut
- Changed StdLooseXxx, StdNoPIDsXxx and StdVeryLooseMuons to use the new particles and implement the new default cuts. **WARNING : Now all StdLooseXxx and StdNoPIDsXxx have  $PT > 250\text{MeV}$  and  $IPCHI2 > 4$**
- The following intermediate states have been changed to use the new StdAll particles, Hence they are still behaving like before:
  - ◆ StdLooseDiElectron
  - ◆ StdLooseDiMuon
  - ◆ StdLooseDiMuonSameSign
  - ◆ StdLooseDstarWithD2HH (only slow pion)
  - ◆ StdLooseJpsi2ee
  - ◆ StdLooseJpsi2MuMu
  - ◆ StdMassConstrainedJpsi2MuMu
  - ◆ StdVeryLooseDiMuon
- Remove all ADOCACHI2 cuts now useless because of LoKi::VertexFitter use.

## Effect on Reco09 data

Running Stripping15 with all streams except the MB stream on 100k events of \$STRIPPINGSELECTIONSROOT/tests/data/Reco09-Stripping13\_SDSTs.py, with DaVinci v28r4p1 with Phys/CommonParticles r126155:

- The timing is reduced from 250 to 188 ms/event. The reduction is across the board. For instance  $D^+ \rightarrow K\pi\pi$  goes from 3.2 to 2.5 ms/event, etc...
- Rate per stream

Stream	v28r4p1	r126155
Dimuon	1543	1215
Dielectron	175	103
Semileptonic	515	448
Bhadron	1620	1052

EW	1054	639
Radiative	119	55
Calibration	2680	1925
CharmCompleteEvent	1995	1382
Charm	4577	4008
Leptonic	2815	2530
PID	1624	1062

In average the rate is 1/4 lower.

## Effect on Reco11 data

To be filled in

## How to test

DaVinci v25r4p1 and Phys/CommonParticles r126097.

The reco11 test sample is now broken. Hopefully it will come back soon.

-- PatrickSKoppenburg - 19-Jul-2011

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This topic: LHCb > CommonParticles

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