TPC preparation for Run 2

Priorities

Full automation of the QA

Automation of the calibration processes

Online calibration within HLT

- Using existing components ported to HLT
- Adapting to flat structure would require substantial man power.
  Improvement in the CPU usage still to be demonstrated … (run2 is approaching)

DB access - combined Calibration/QA/run information

- Offline and at list partially also Online

Run 1 reprocessing

Including TRD into track fit

- Use LHC11 filtered data, then validation of improvement in pT resolution with K0S

TPC MC tail- and cross talk maker and cross talk correction in TPC data.

- Required to prevent decrease in dE/dx by up to 20% at highest multiplicities

dE/dx transfer functions for dE/dx calibration.

- if available at reconstruction to improve mass hypothesis

Improve TPC-ITS matching efficiency and systematic error

- matching TPC/ITS standalone tracks, resp, tagging

Improve double-track resolution

- Using external tracking information

Run2 calibration

After cpass1 finished, implement automated procedure to fill runs with failed calibration due to insufficient statistics, update OCDB

Space point distortion calibration - per fill calibration

- to follow space charge effect and charging effect - estimated distortion ~ 2mm

dEdx PID calibration using enhanced sample of calibrated data

- Goal to calibrated dEdx BB up to fermi plateau using identified particles
- High pt /Jet triggered data
- Cosmic trigger interleaved during data taking

Combined calibration/alignment of barrel detectors (ITS, TPC,TRD,TOF, HMPID)

Run2 reconstruction

Convergence - HLT tracking/OFFLINE tracking

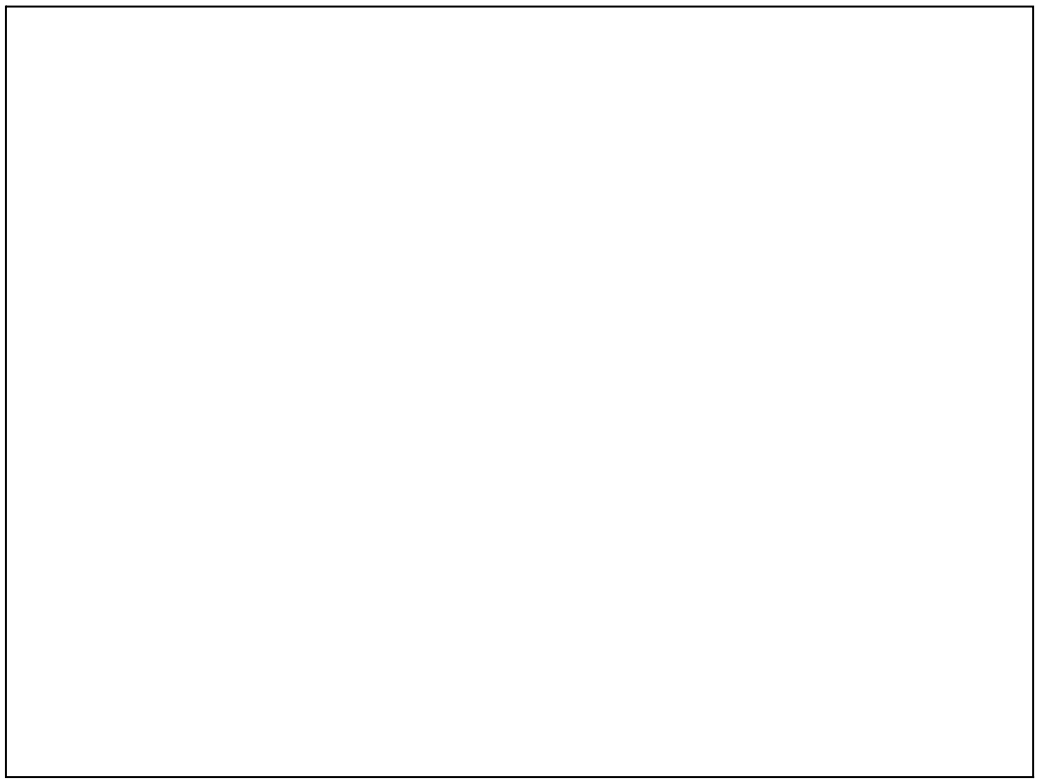
- HLT seed for the OFFLINE tracking
- common algorithm

Compromise physics/CPU performance. R&D needed

- HLT tagging of secondary and pile-up tracks
  - main CPU factor - N pileup event factor speed-up
- B field queries
- Material budget queries
- dEdx calculation
- Kink finder
- V0 finder
- Combinatorial tracking (for ITS)
- CPU for other detectors

Zero bias sample

- Pileup events usage for physics studies



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