Status of L3 Muon Trigger

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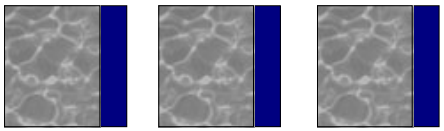
- Working L3 Muon Filter exists.
- Functionality has been tested with MC and data samples
- **BUT:** Still major problems *beyond my scope*
  - Unstable / not working parts of ScriptRunner
  - Bug in muon unpacker (?)
- Certification is in progress



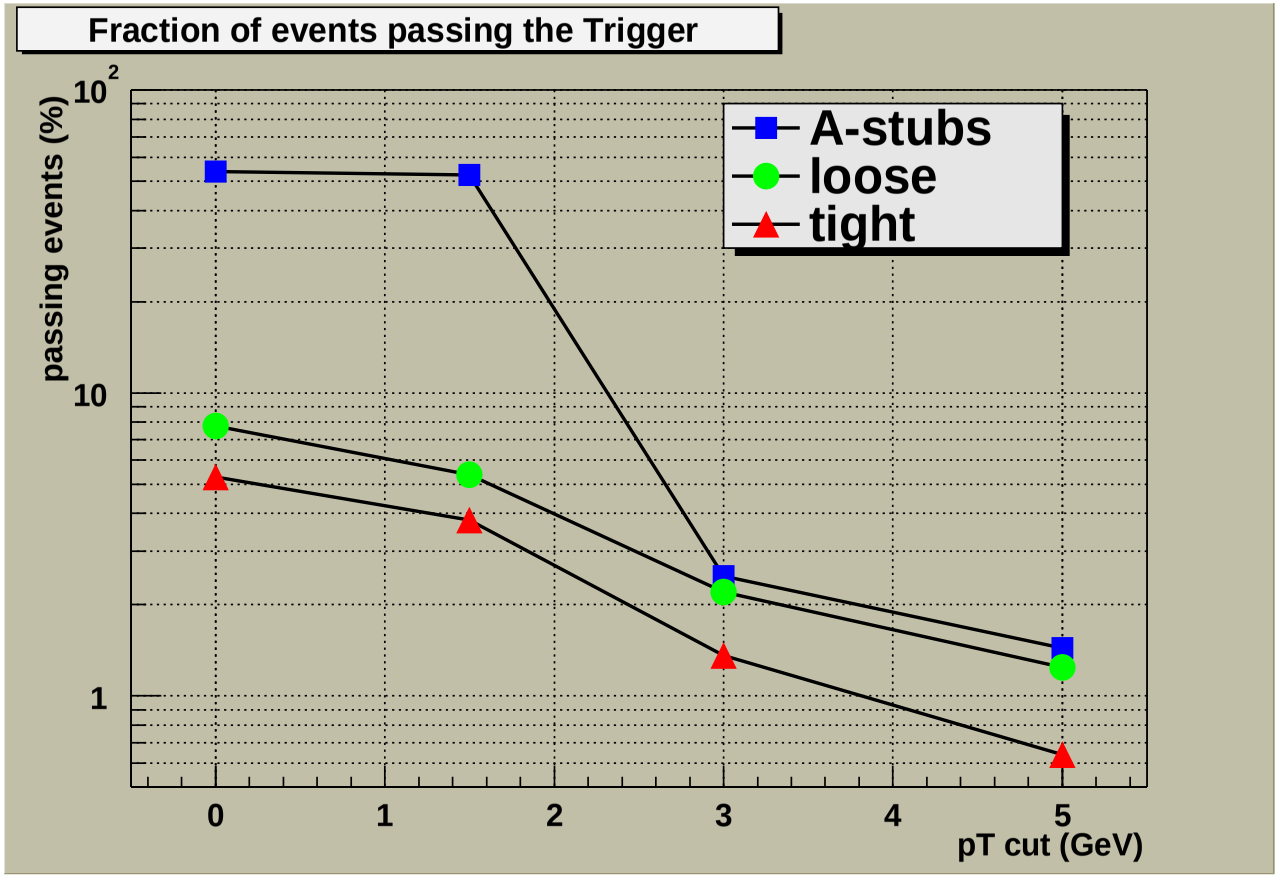
Input parameters for L3FMuon

- Parameters provided in trigger list:
  - η range
  - φ range
  - Region (forward / central)
  - Minimum pT for local muon tracks
  - Minimum pT for central tracks
  - Quality (tight, loose, a−stub)
  - Requirement of matched central track
  - Number of required tracks

Definition of track quality (update)

- **Tight**
  - # scint hits in A > 0
  - # wire hits in A > 1
  - # scint hits in BC > 0
  - # wire hits in BC > 2
  - χ^2 of track > 0
- **Loose:**
  - drop χ^2 condition
  - ignore A−layer in sectors 5 & 6 (bottom)
  - allow one other "tight" condition to fail
- **A−stub**
  - # wire hits in A > 1

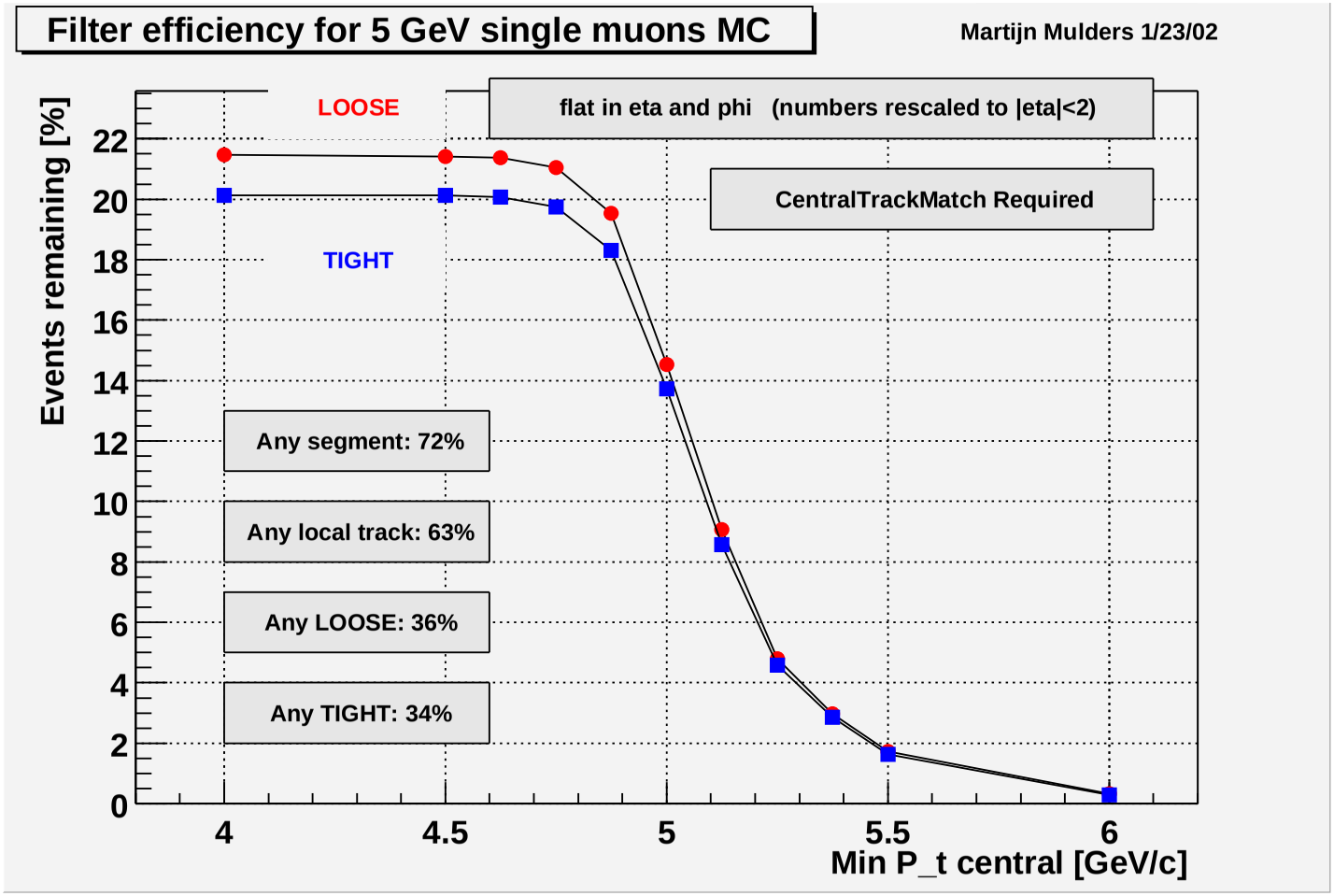
"Pass factors" for L3 Muon filter



- Bug in unpacker (
  spoils track reconstruction in north FAMUS
- Real factors shoul
  be ≈25% higher.

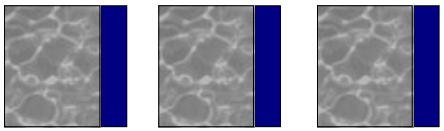
run 139930 (Dec 01, standard CalMuo trigger)

Monte Carlo studies for filter efficiency



The next steps

- Compare results of L3 filter and offline reconstruction.
- Run code on more data and MC samples to confirm efficiencies and rejection factors.
- Test on large data sample
  - As soon as the memory leak is fixed...

Problems beyond my control

- Huge memory leak in release p11 of ScriptRunner (approx 1MB/event)
  - ⇒ No job can survive more than 4000 events
- CFT unpacker crashes immediately for post−shutdown data
  - ⇒ No tests of central matching possible
- Muon unpacker (?) bug in north FAMUS
  - ⇒ No reasonable track reconstruction in ¼ of the detector