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Joseph Touzet
Supervised by

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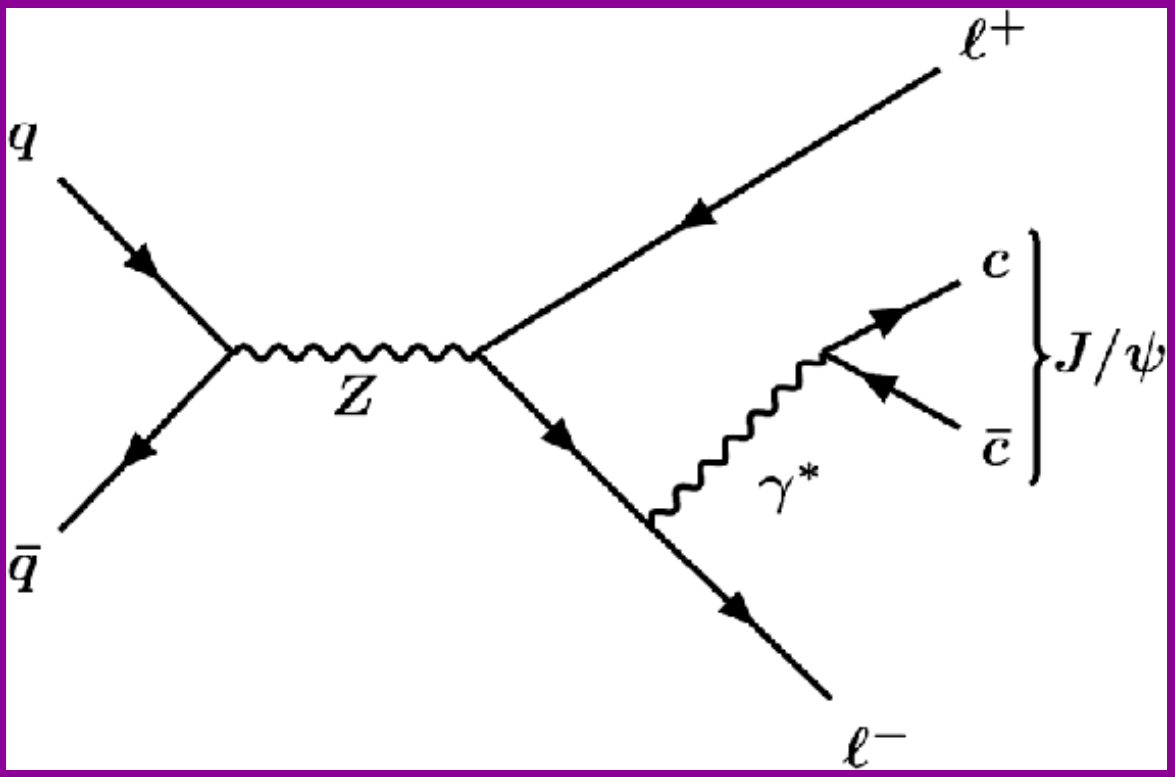
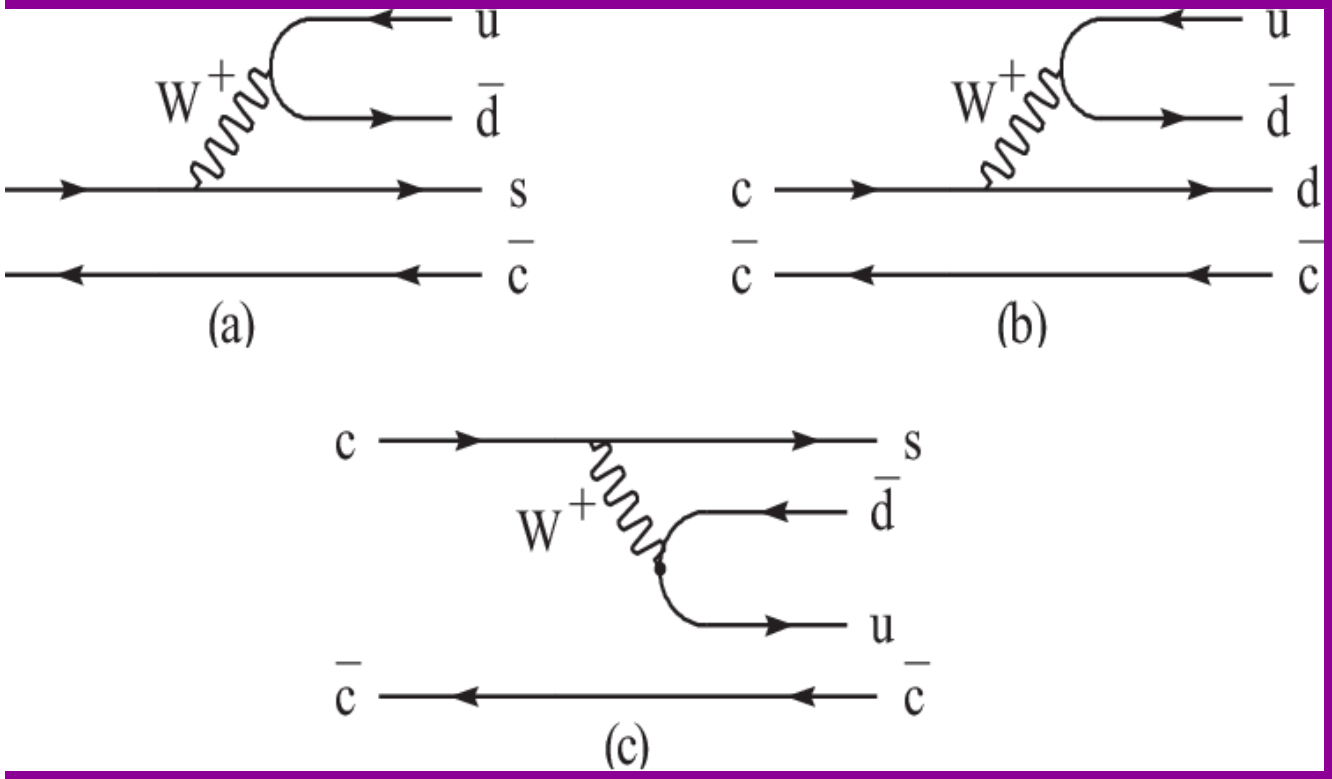
Florian Damas

1. Collisions



3. Phase 2 vs



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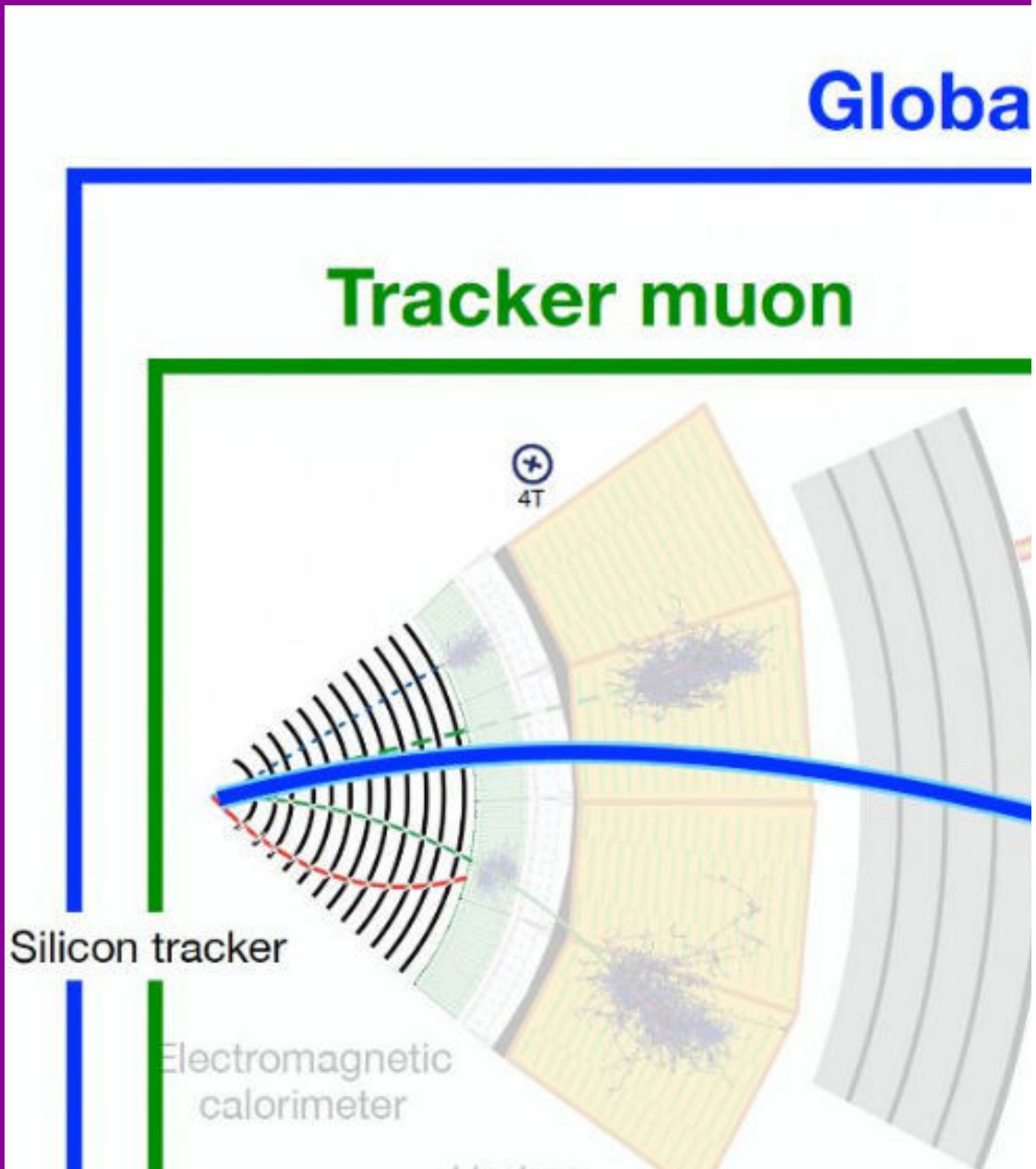
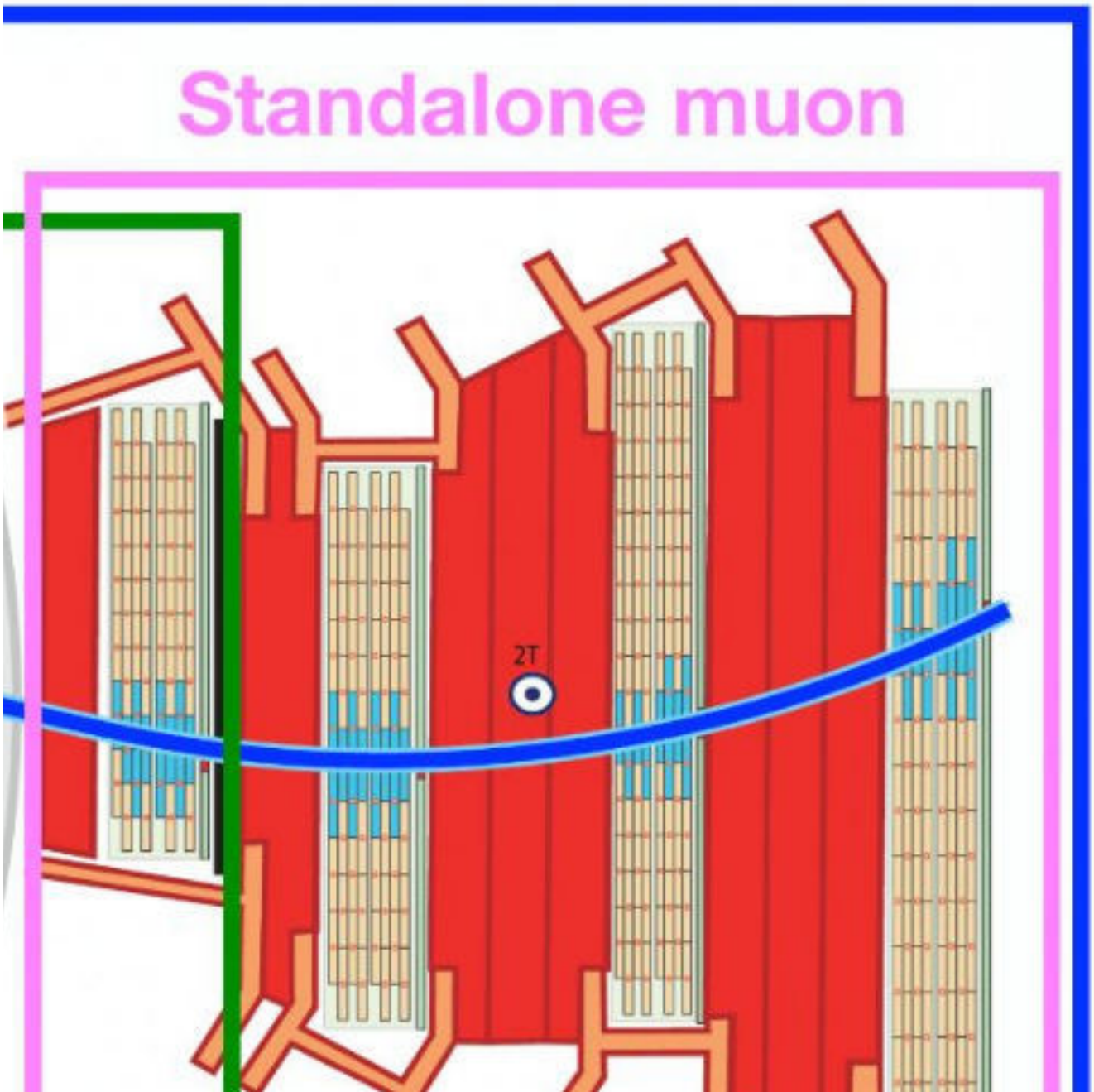
2. Detecting

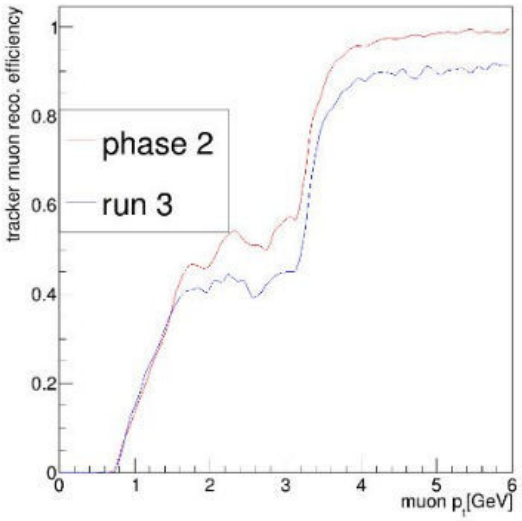

Globa
Tracker muon
4T
Silicon tracker
Electromagnetic
calorimeter

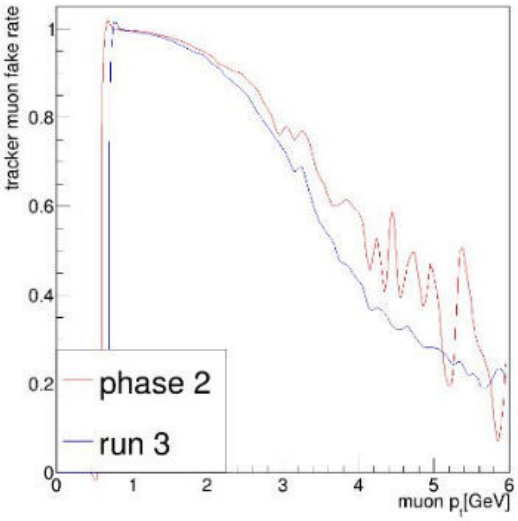
muons

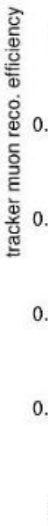
l muon



Phase 2 improveme
Pb-Pb collision: t

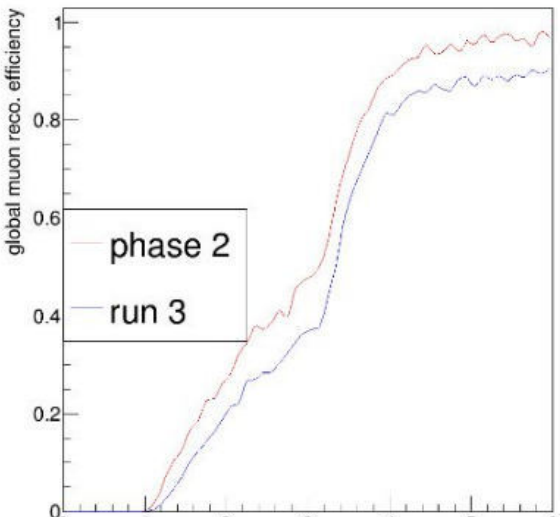


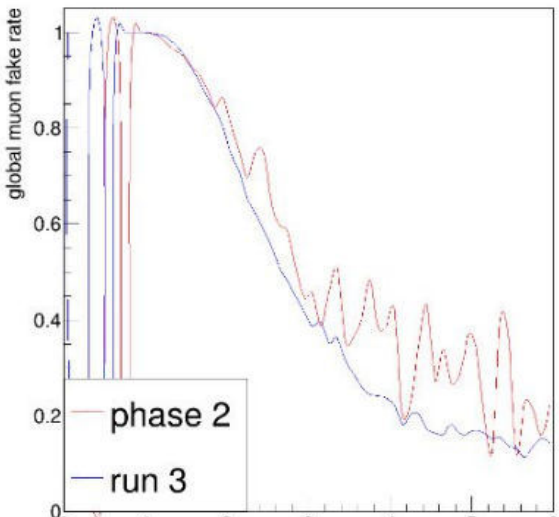


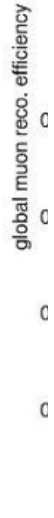


Phase 2 vs Run 3 embedded,
10% highest track count

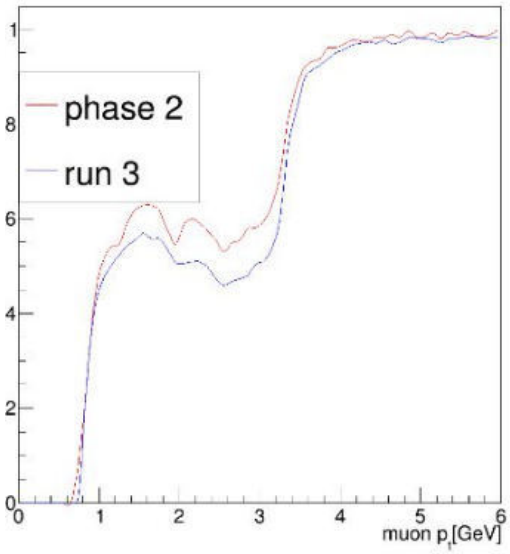
Phase 2 improveme
Pb-Pb collision:

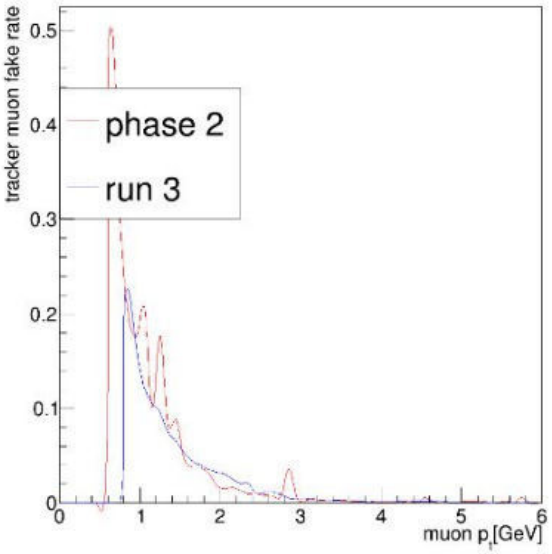






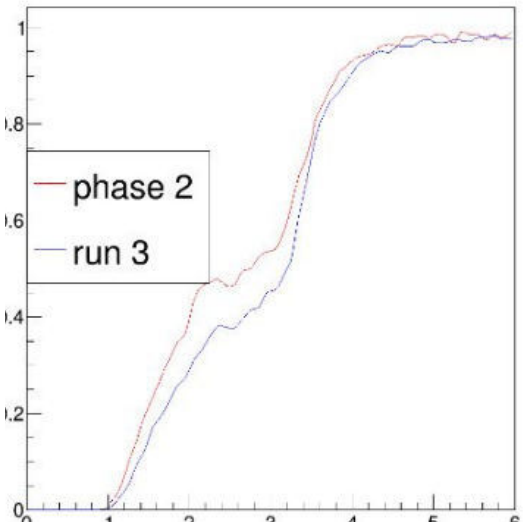
ent over Run 3 for tracker muons

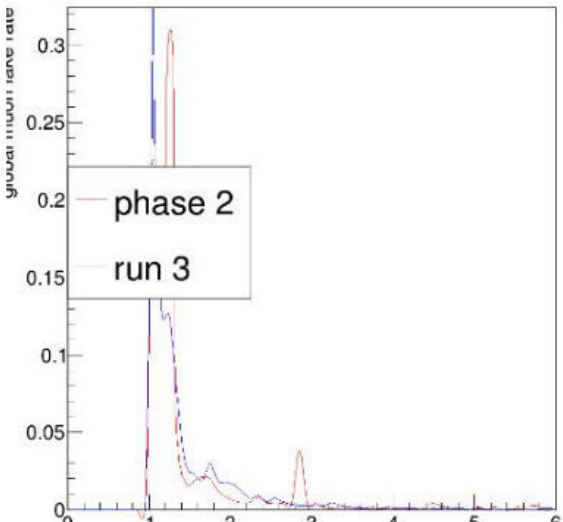




Phase 2 vs Run 3 embedded,
10% lowest track count

ent over Run 3 for global muons





Phase 2 vs Run 3 embedded,
10% highest track count

4. Optimizing

Improving the fake rat
TMVA Re

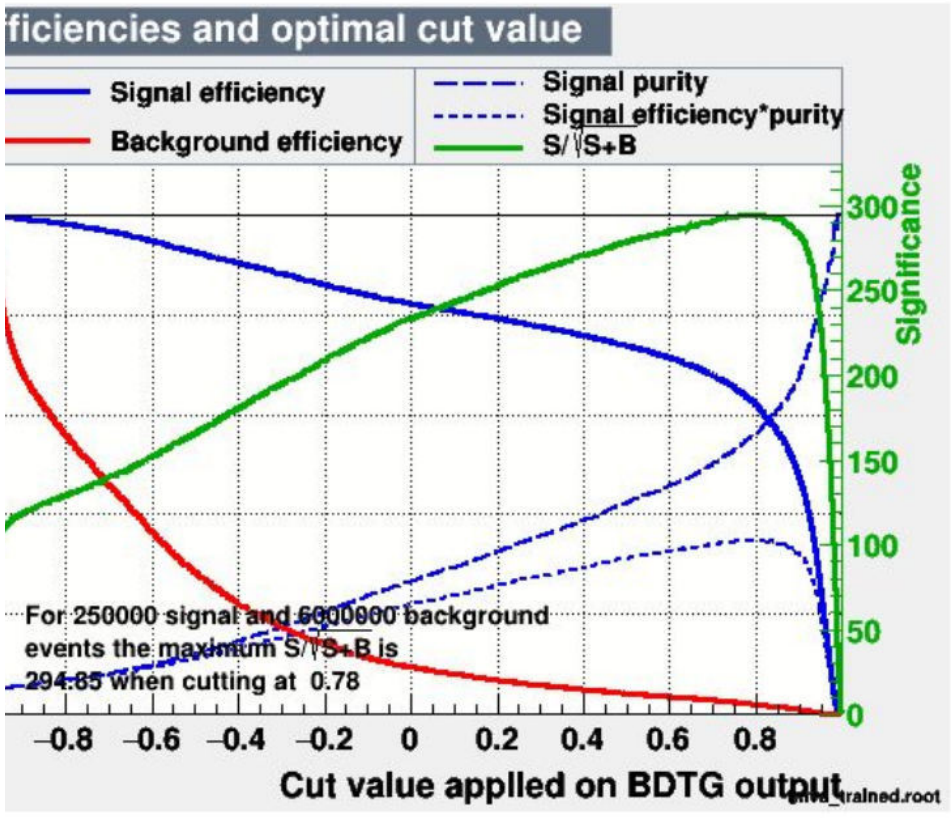
Variables used for classification:
- Reco_mu_nMuValHits*
- Reco_mu_nTrkHits
- Reco_mu_nPixValHits
- Reco_mu_localChi2
- Reco_mu_pt
- Reco_mu_eta
- Reco_mu_dxy
- Reco_mu_dz
- nPV
- Reco_mu_nMatches*

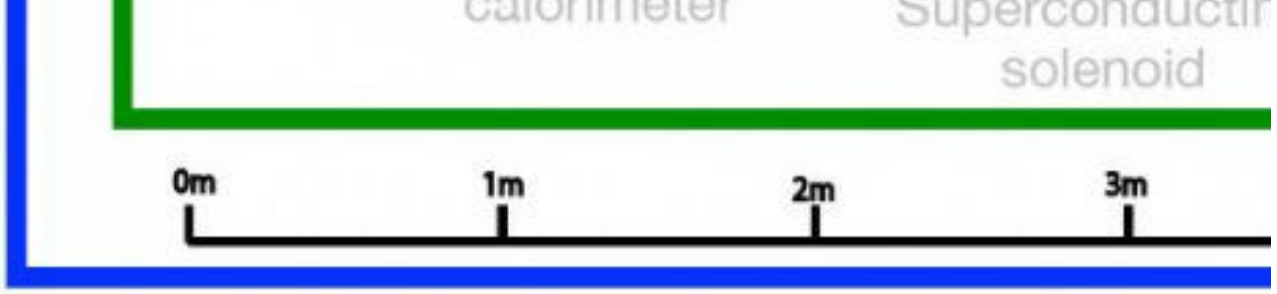
*not well defined as they don't included data from GEM for now

Phase 2 vs Run 3 embedded,
10% lowest track count

g selection

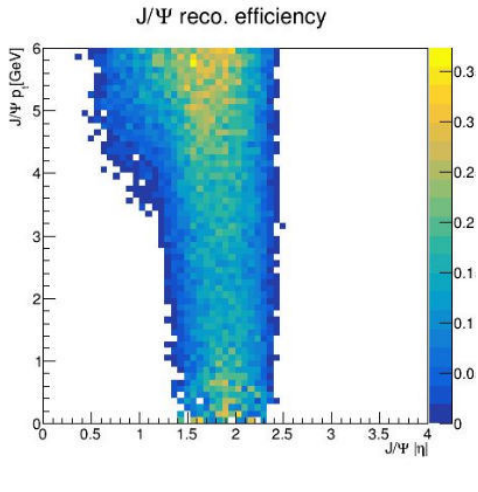
te of GEM muons:
esults

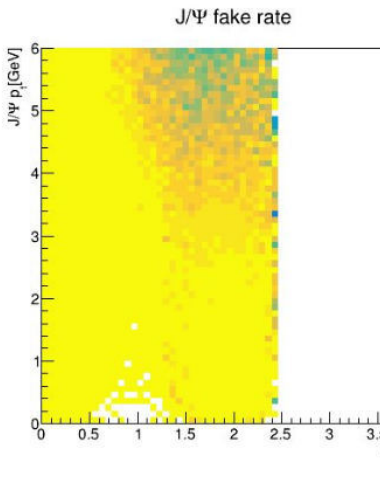




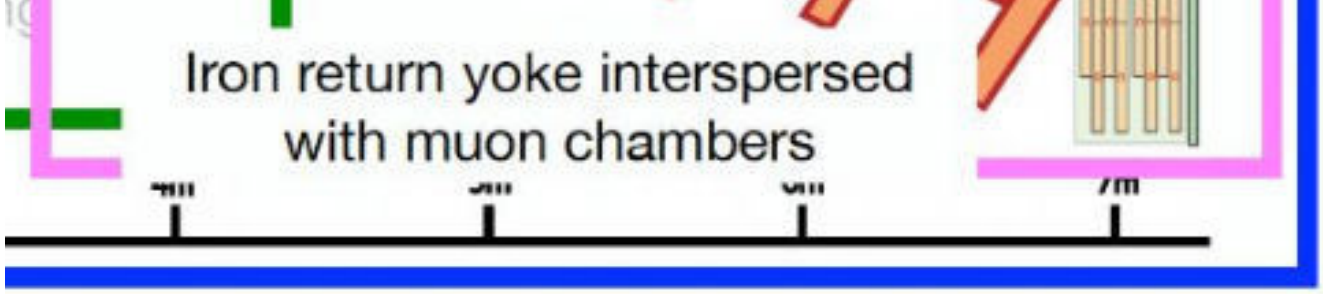
5. Improvm

Improving the fak
J/Ψ reconstru





J/Ψ reconstruction for phase 2
Without ID*



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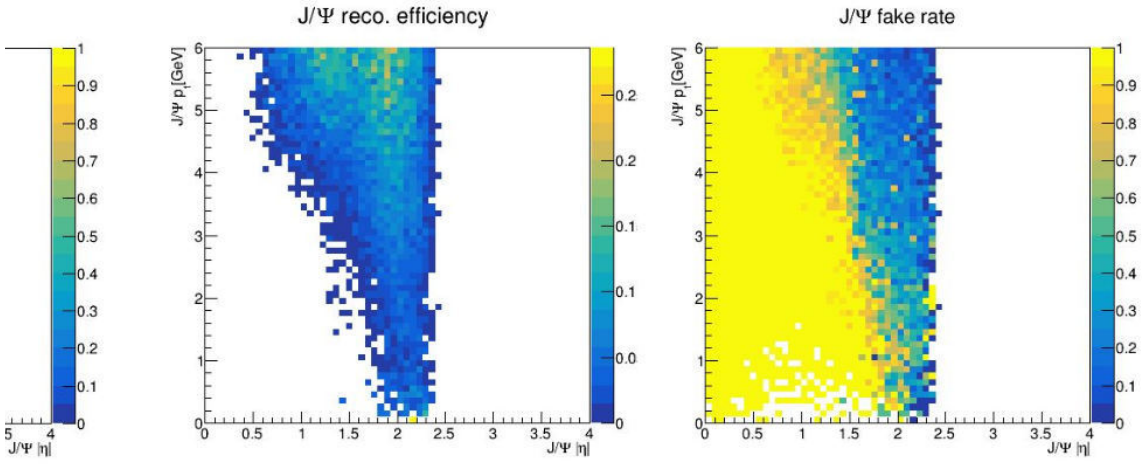
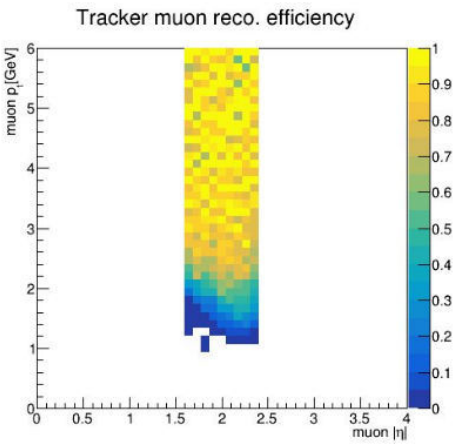
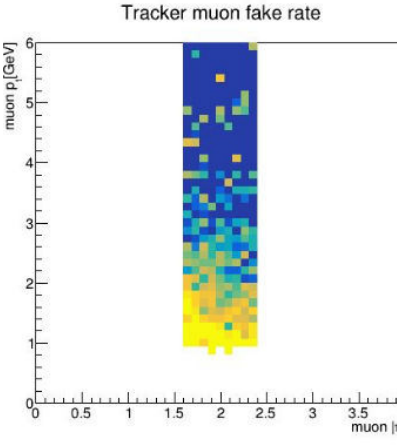
ke rate of GEM muons:
ction improvements



J/Ψ reconstruction for phase 2
With ID*

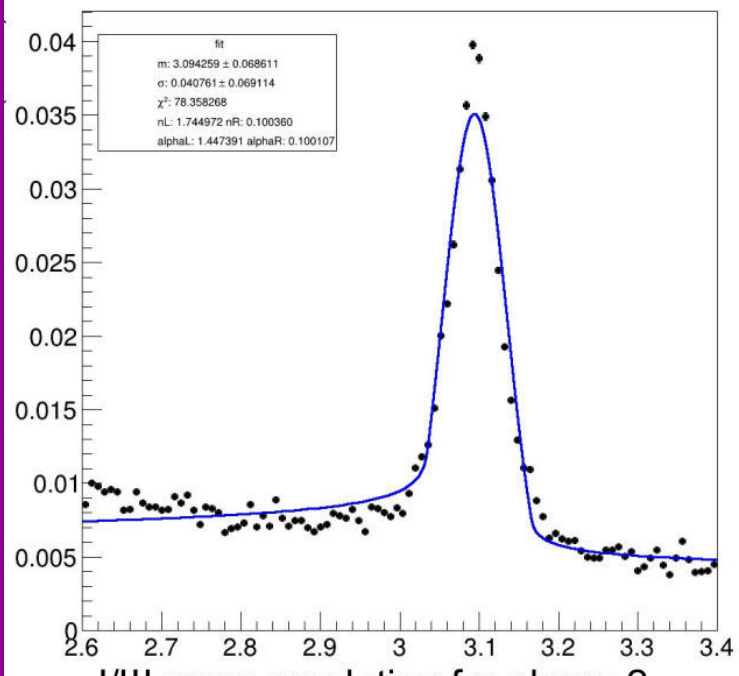
Improving the fak
Muon reconstru





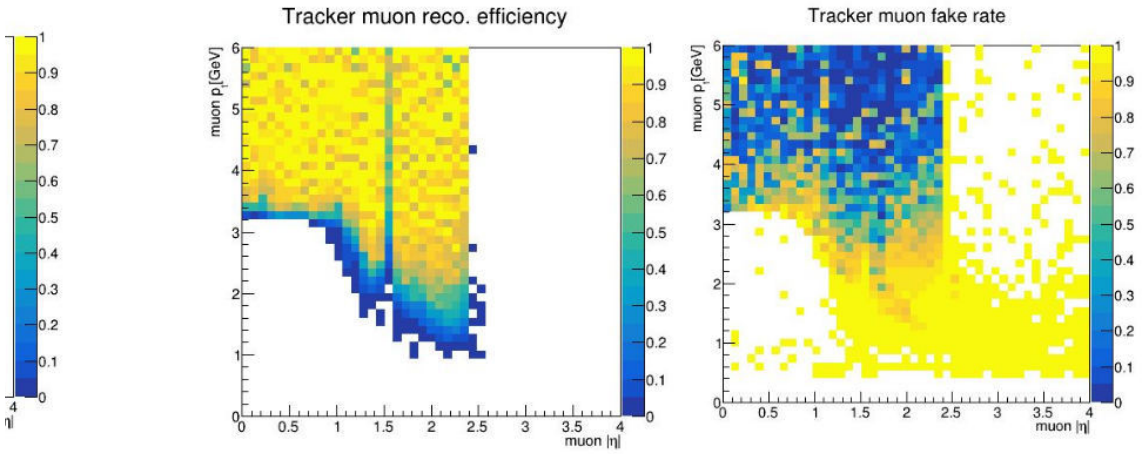
GEM reconstruction efficiency and fake rate after ID

Improving the fak
J/Ψ reconstru



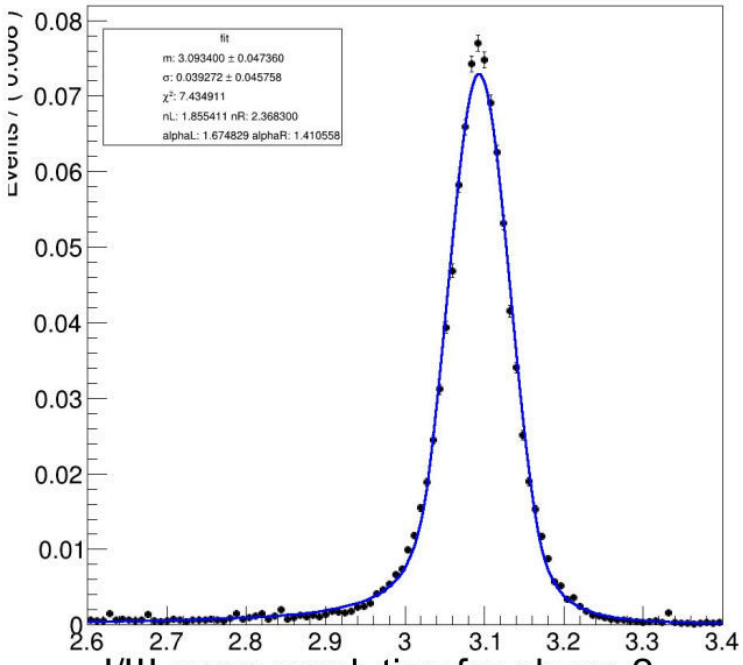
J/Ψ mass resolution for phase 2
Without ID

ke rate of GEM muons: uction improvements



Reconstruction efficiency and fake rate after ID for all muons

ke rate of GEM muons: ction improvements



J/Ψ mass resolution for phase 2 With ID