

Status Report

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Trigger Study

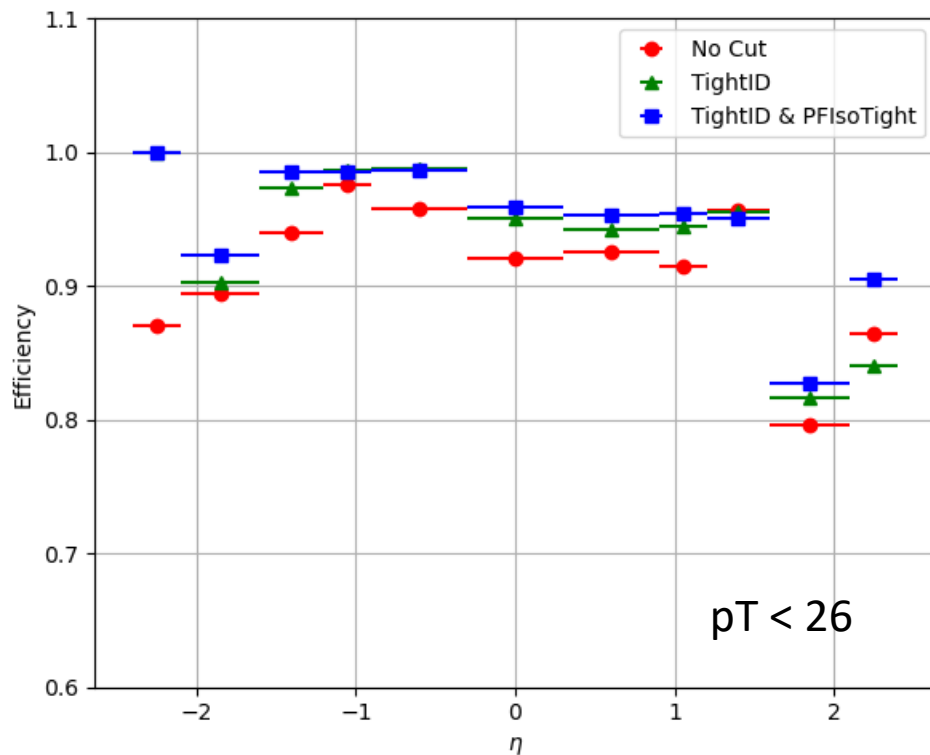
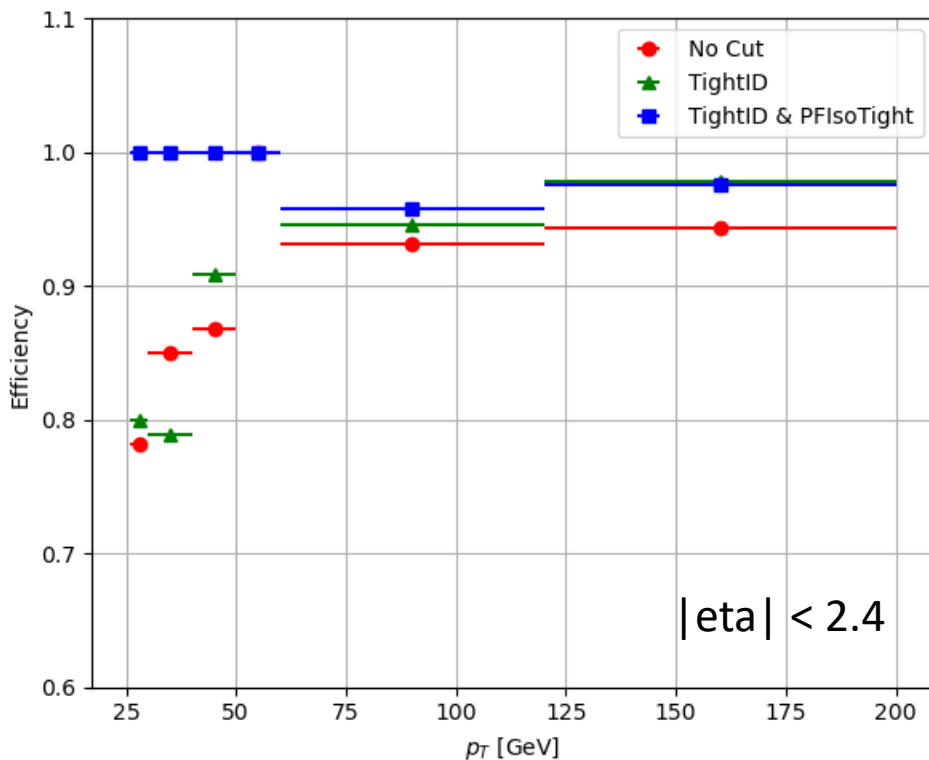
- Recommended single muon triggers for 2023 data ([twiki](#)):
 - Single muon, intermediate pT: HLT_IsoMu24
 - Single muon, high pT: HLT_Mu50 | HLT_CascadeMu100 | HLT_HighPtTkMu100
- Trigger efficiency
 - Goal: Correct the simulation if the trigger performance behaves differently
 - Trigger efficiency is defined as the fraction of events the trigger was supposed to collect vs the fraction of events it really collected

$$\text{Efficiency} = \frac{\text{\# events passing muon trigger \& offline selection \& base trigger}}{\text{\# events passing offline selection \& base trigger}}$$

- base trigger: HLT_PFJet40

Trigger Study - signal

- Datasets: 1,000 simulated LFV signal samples
- efficiencies
 - without ID & Iso : 91.5 %
 - with TightID : 93.5 %
 - with TightID & TightIso : 94.6 %



Trigger Study - DY

- Datasets: 150k DY samples
- efficiencies
 - without ID & Iso : 89.5 %
 - with TightID : 93.7 %
 - with TightID & TightIso : 94.7 %

