

OMTF performance study using L1 Ntuple

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Motivations

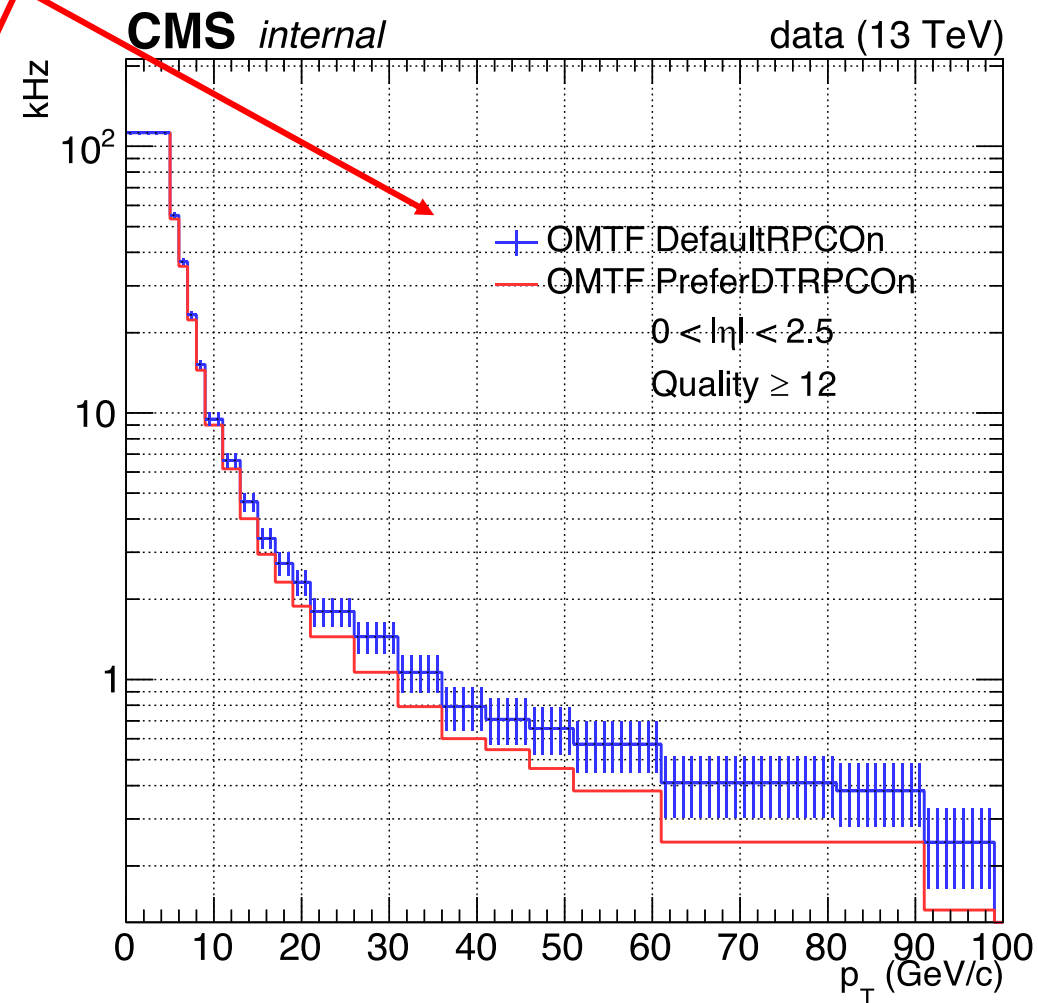
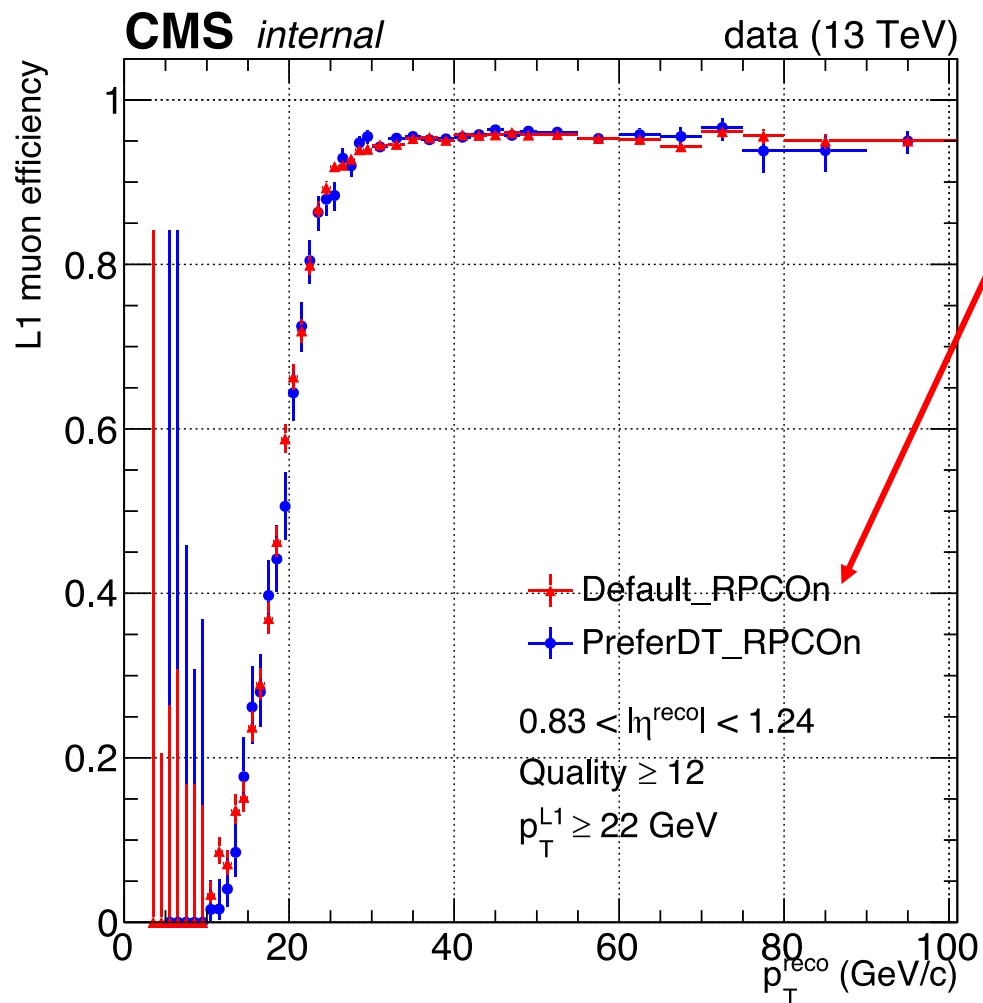
- Compare efficiency and rate performance for several OMTF algorithm options [\[1\]](#)
 - Default
 - Prefer DT: Prefer muon candidate with the DT reference hit
 - [FW V5](#): Mitigate degraded performance when RPC not available
 - Allow the coincidence of two DT segments or one DT + one CSC to produce a muon
 - Allow the “uncorrelated” DT segments (quality 2 and 3, i.e. based on only one superlayer) to be used by the algorithm
 - Enabled prefer DT reference hit option
 - For each option above, compare with & w/o RPC TPs

Tools

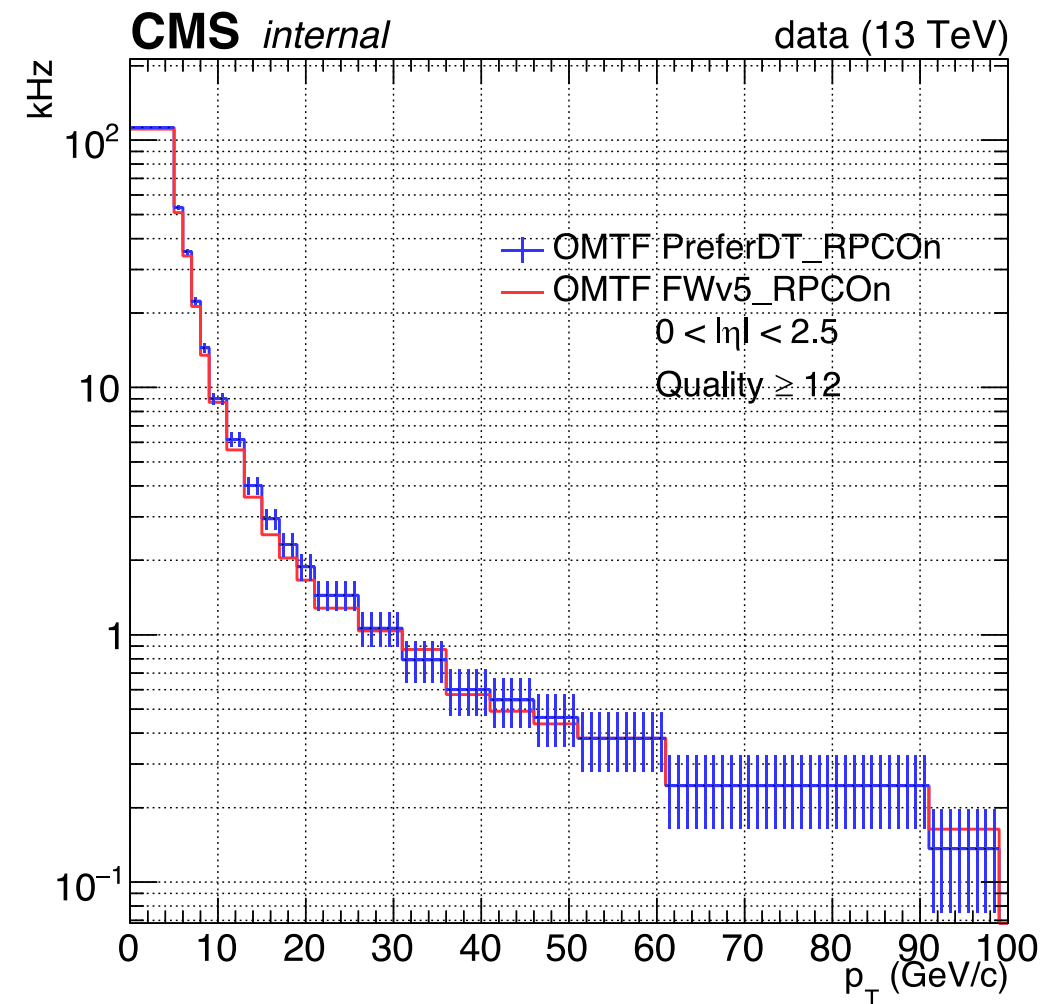
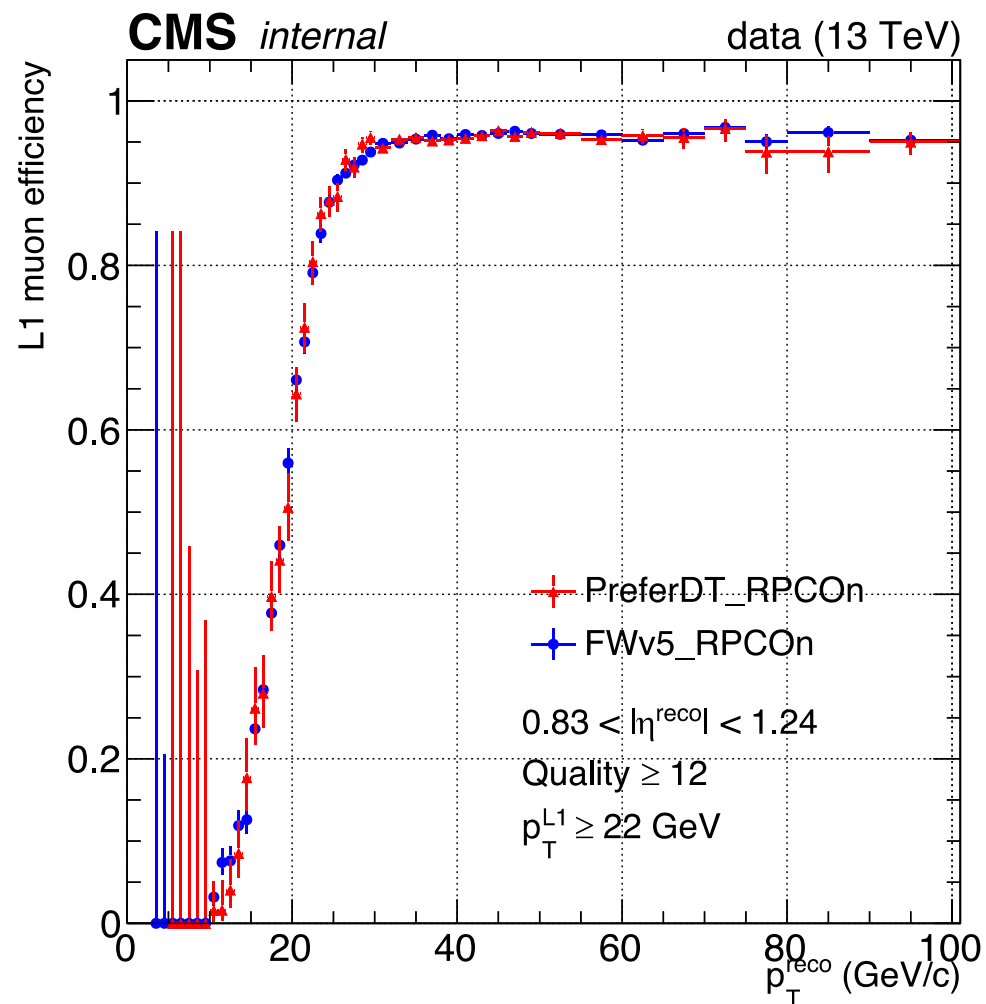
- L1T muon [tool](#) from Thomas Reis
- L1 [Ntuples](#) for various OMTF algo options
- Samples
 - /SingleMuon/Run2018A-ZMu-PromptReco-v1/RAW-RECO
 - /afs/cern.ch/cms/CAF/CMSCOMM/COMM_DQM/certification/Collisions18/13TeV/DCSONly/json_DCSONLY.txt
 - /ZeroBias/Run2018B-v1/RAW, run 317640
 - /afs/cern.ch/cms/CAF/CMSCOMM/COMM_DQM/certification/Collisions18/13TeV/PromptReco/Cert_314472-317696_13TeV_PromptReco_Collisions18_JSON.txt

Default vs Prefer DT (both with RPC)

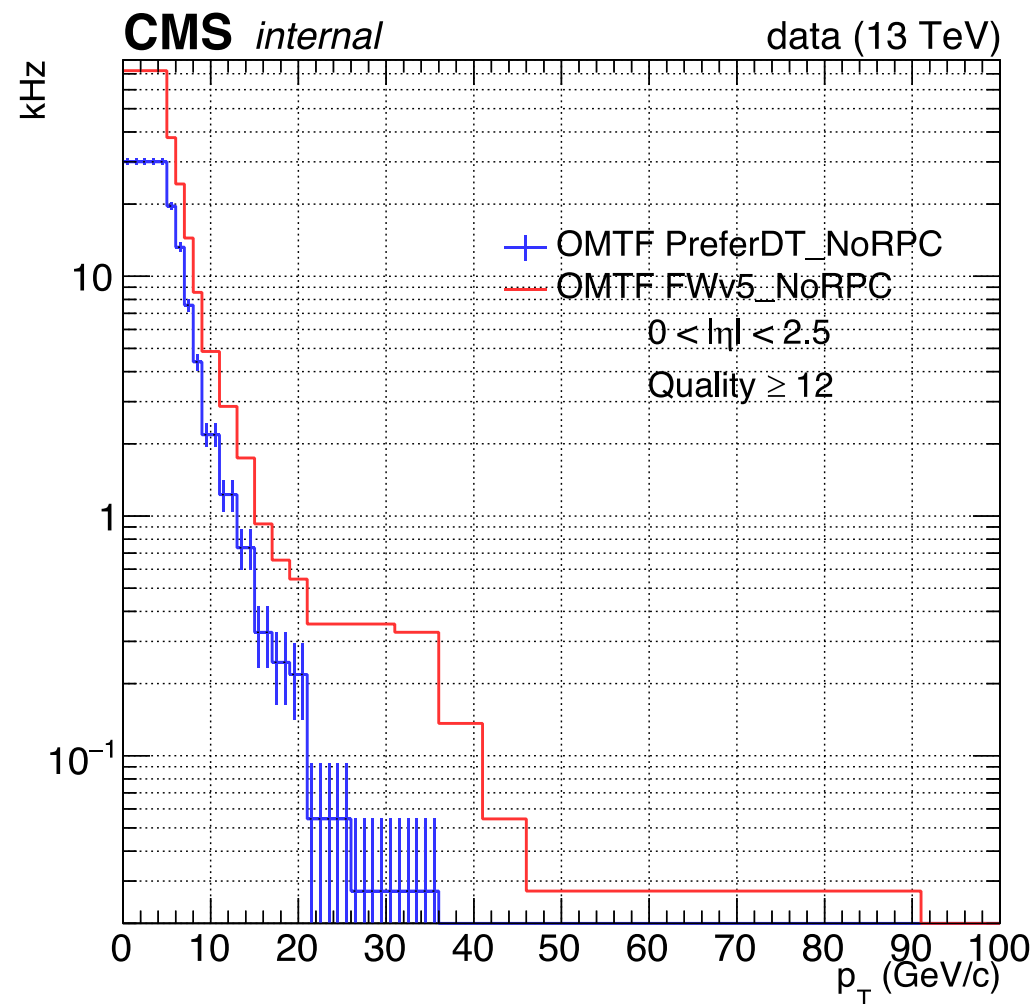
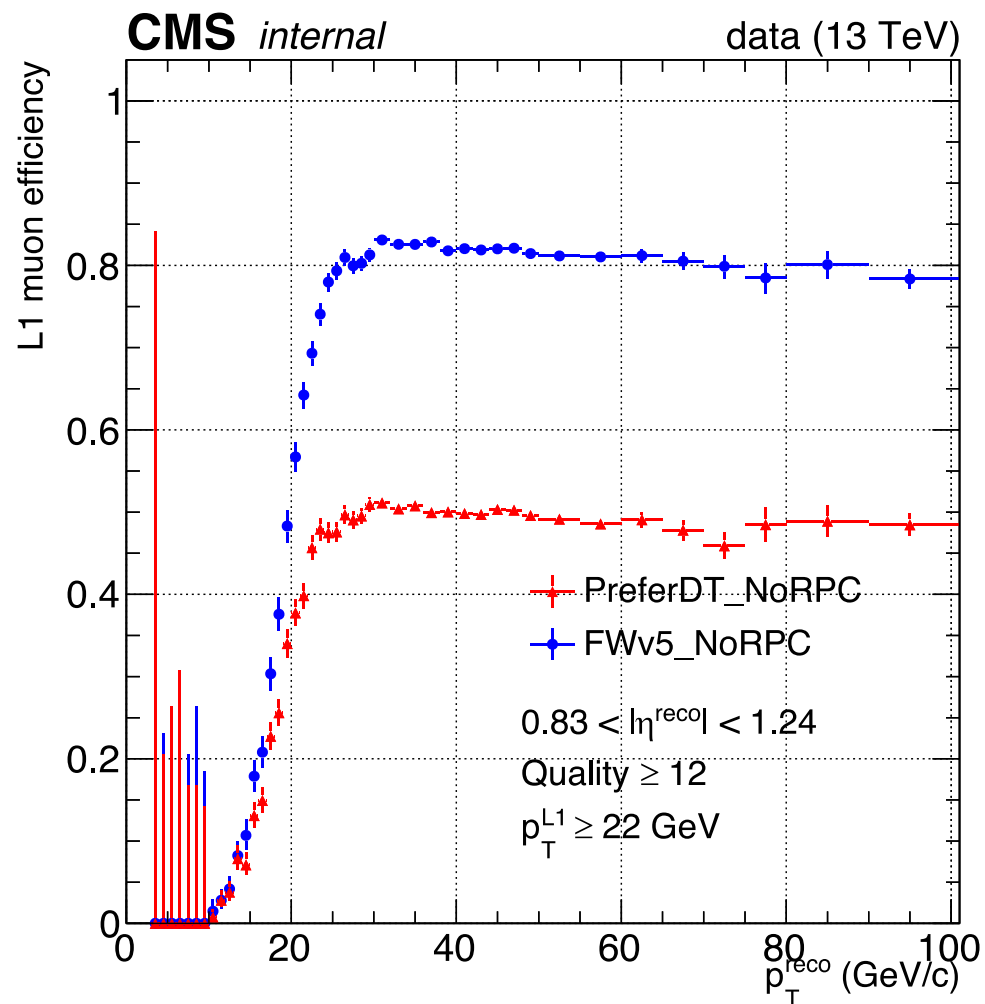
Note: Legend swapped!



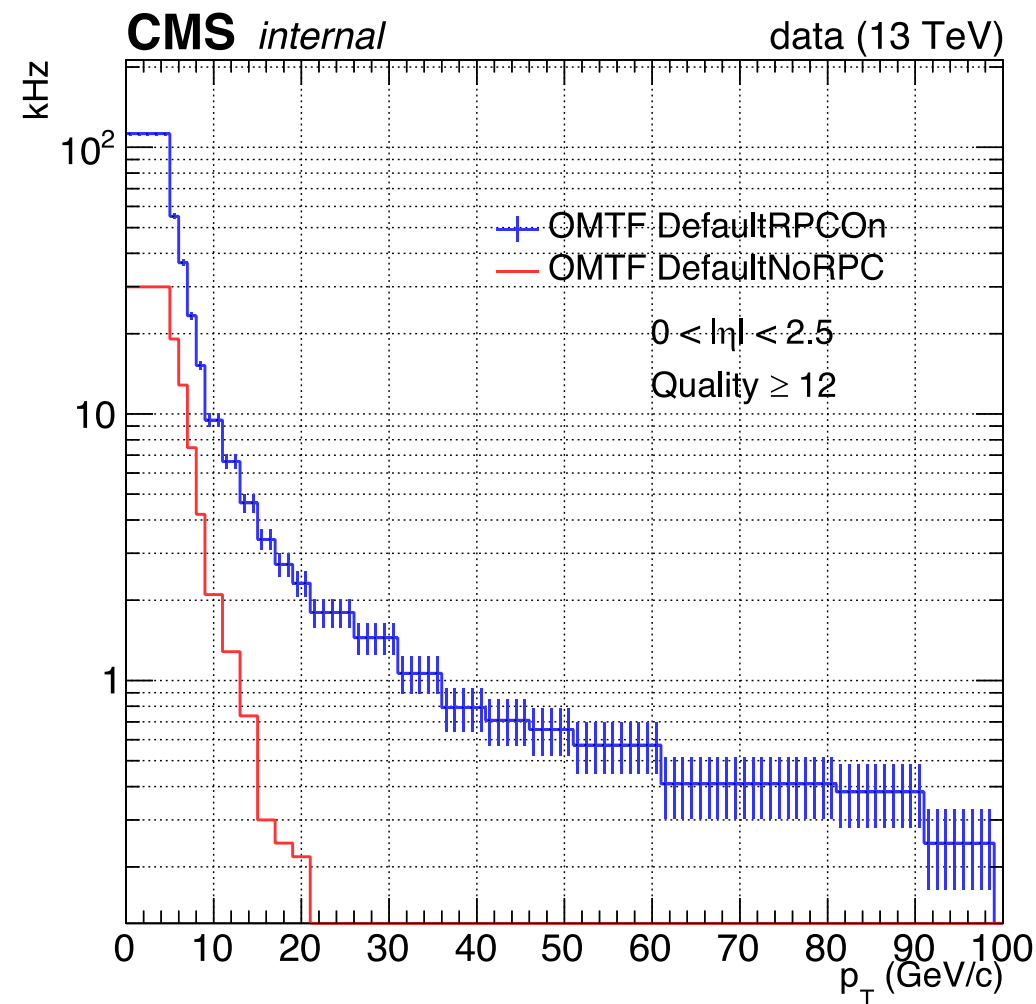
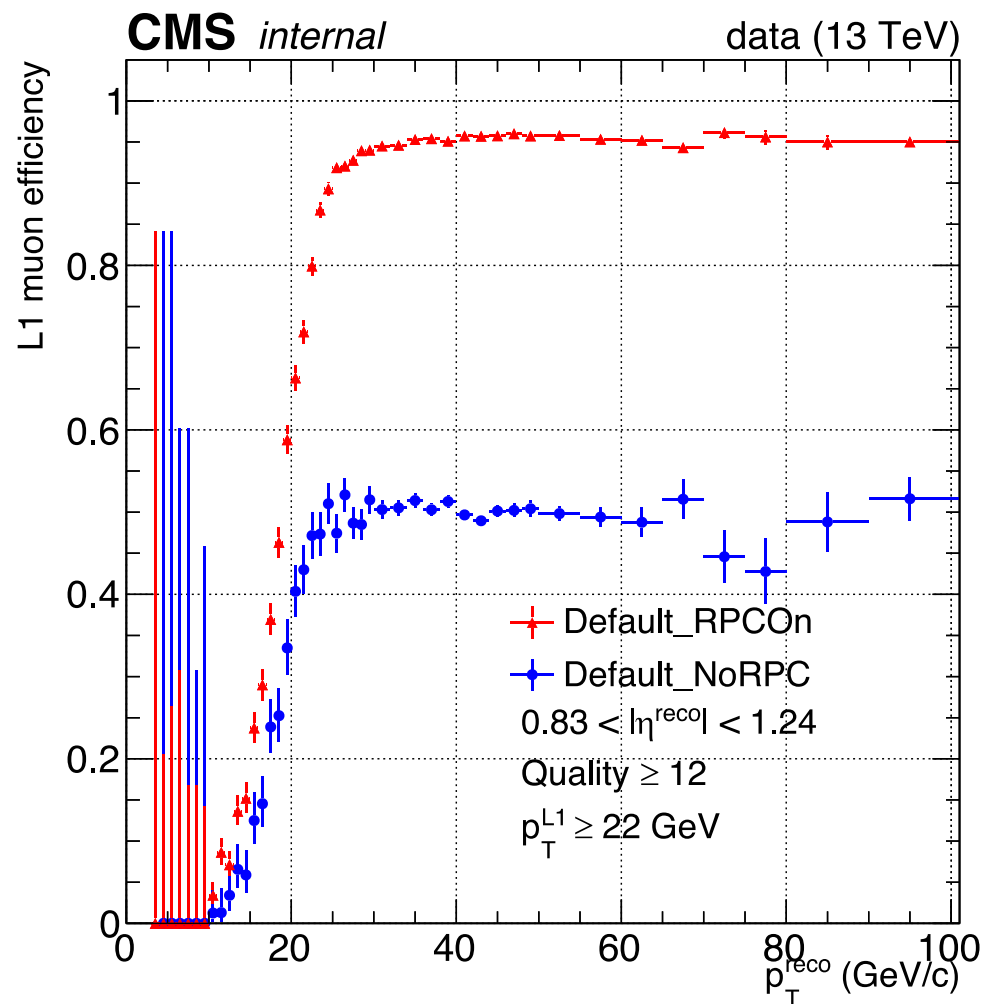
Prefer DT vs FW_v5 (both with RPC)



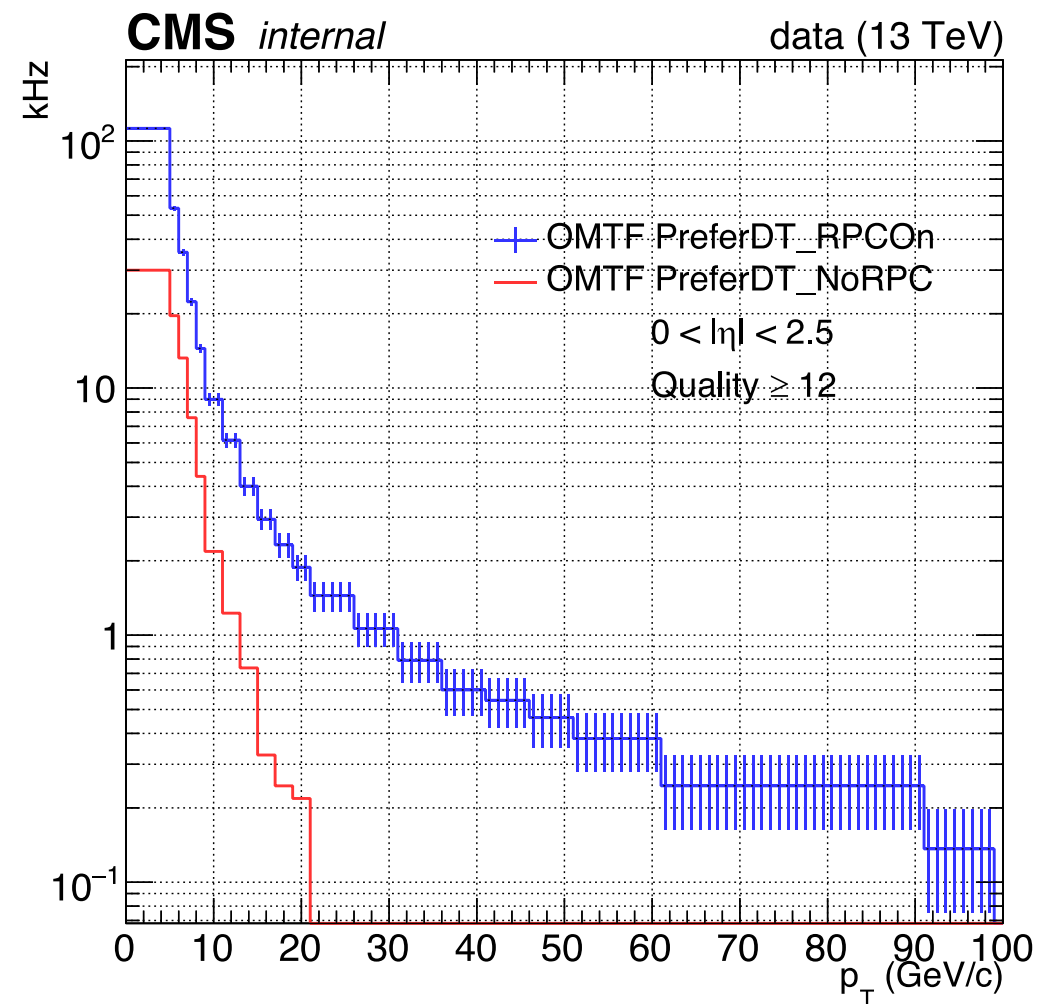
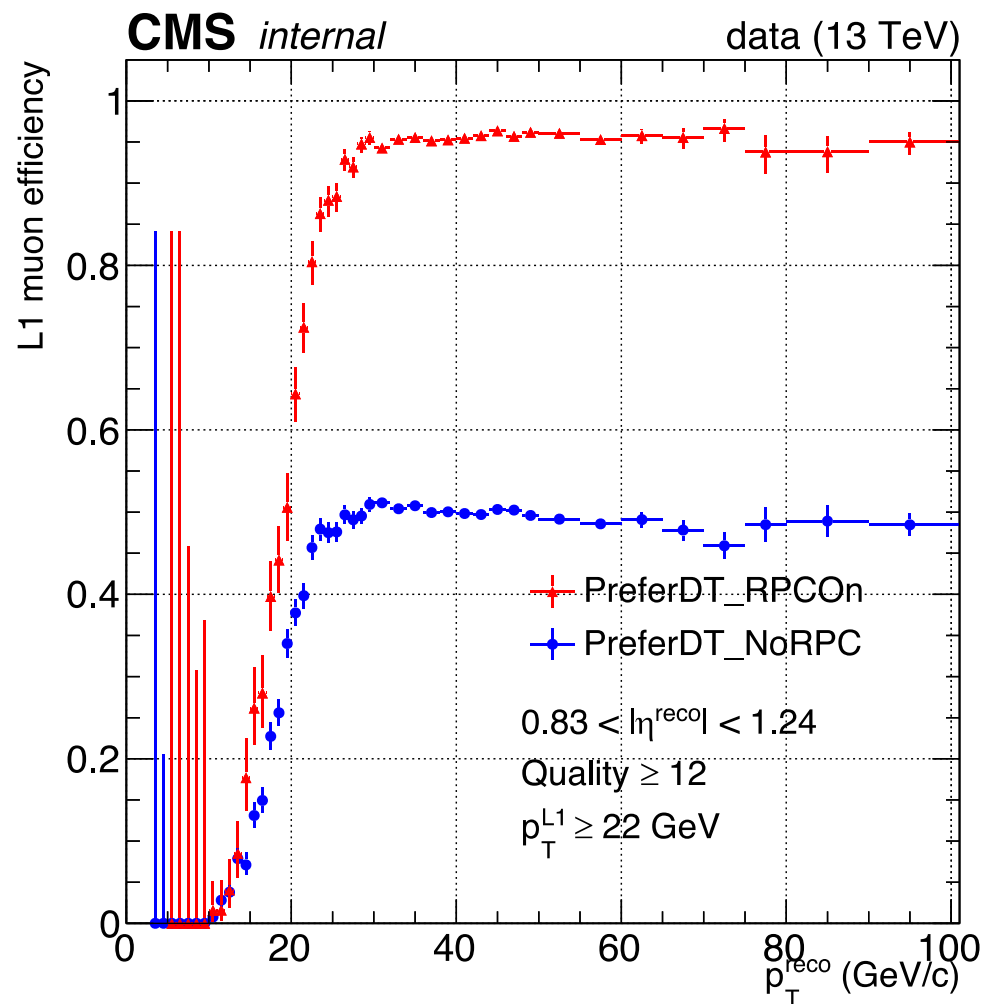
Prefer DT(no RPC) vs FW_v5 (no RPC)



Default: w & w/o RPC



Prefer DT: w & w/o RPC



FW_v5: w & w/o RPC

