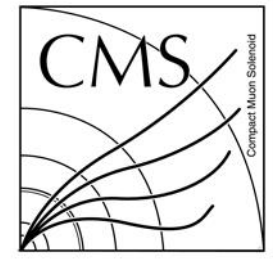




Training p_T with 2018 Data

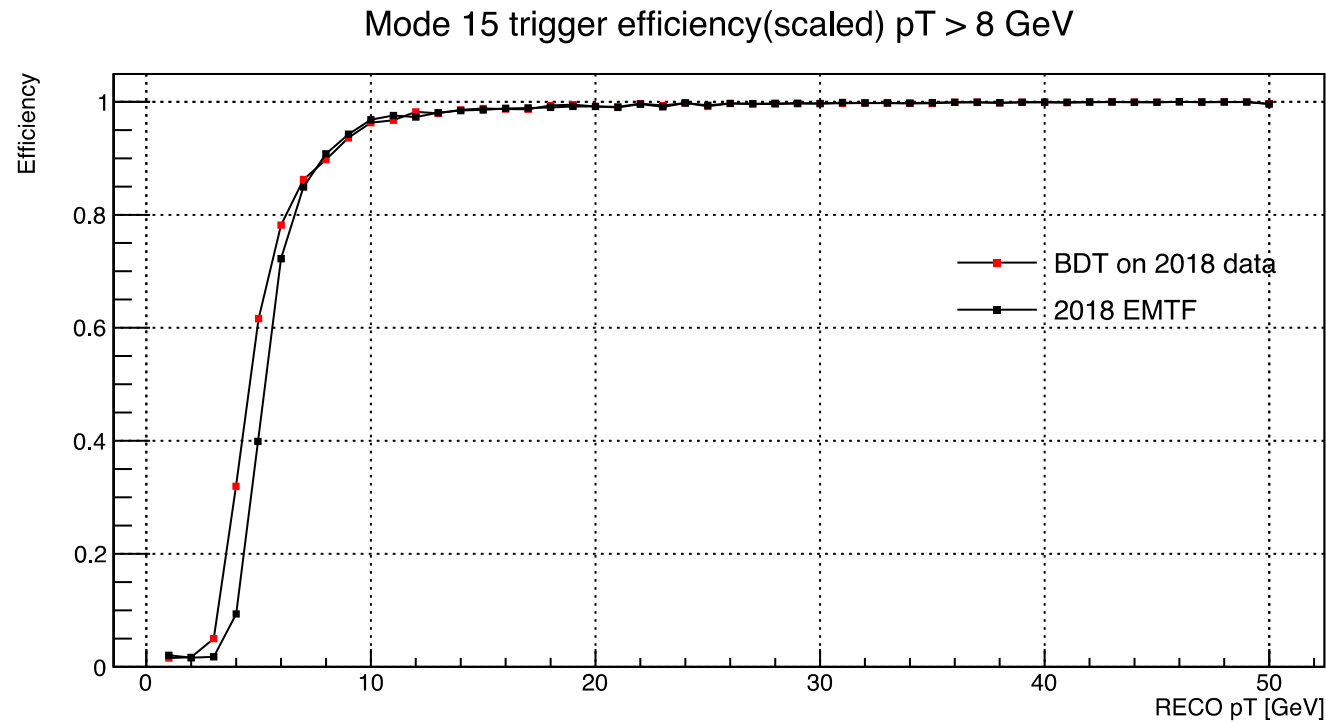
Wei Shi, Andrew Brinkerhoff



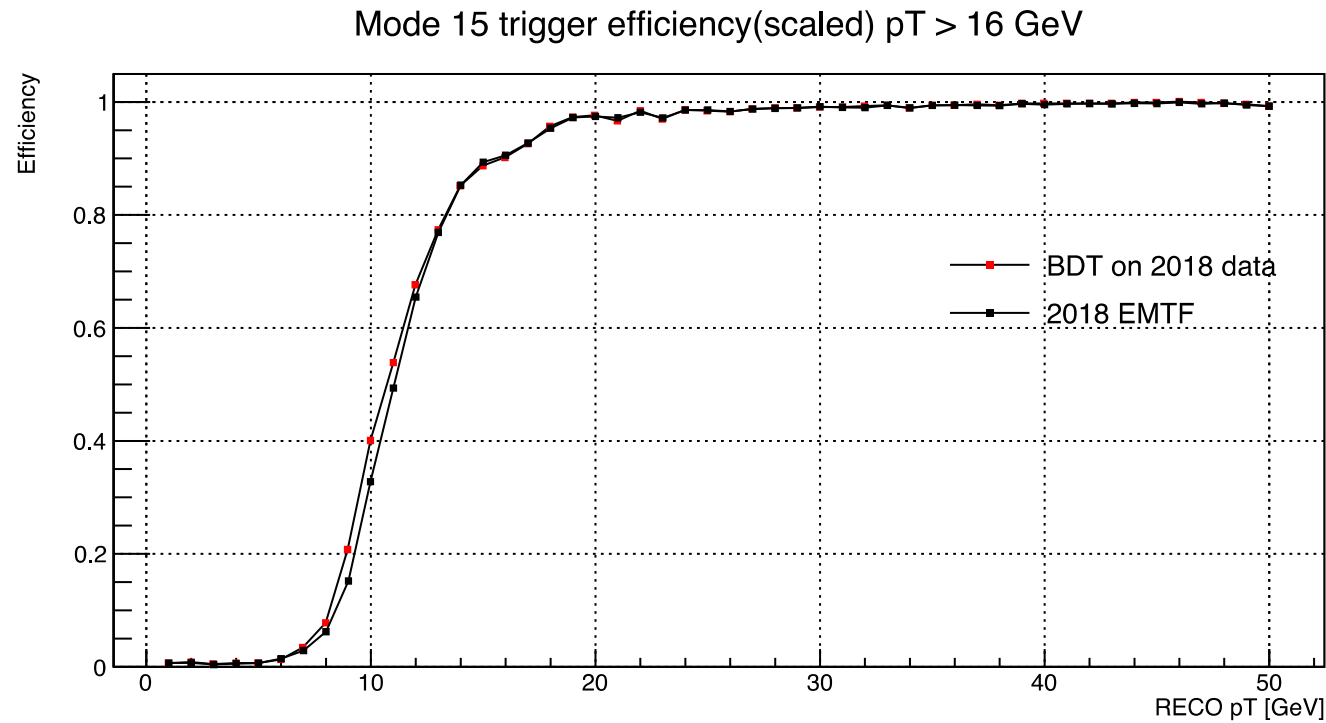
Basics

- Train 223,989 muons
 - SingleMu Ntuple
 - */SingleMuon/FlatNtuple_2019_01_09_SingleMuon_PU50_Sep24_FW/*/000*/*.root
 - EMTF track **uniquely** matched to RECO muon + **2018 P5 BDT pT as input**
 - **Replace LCT with Offline CSC segments for phi and theta, train on CSC-only track**
- Test 322,093 muons
 - SingleMu data (uniquely matched) + ZeroBias
 - */ZeroBias/FlatNtuple_2019_01_09_ZeroBias_PU50_Sep24_FW/*/000*/*.root
- Settings
 - Removed bias events for training and test
 - Removed events: $n\text{RecoMuonsTrig} < 2 \ \&\& \ n\text{RecoMuonsTrigCen} == 0$
 - logPt target, 1/pT weight, Least Square loss function
 - 400 trees, not tuned

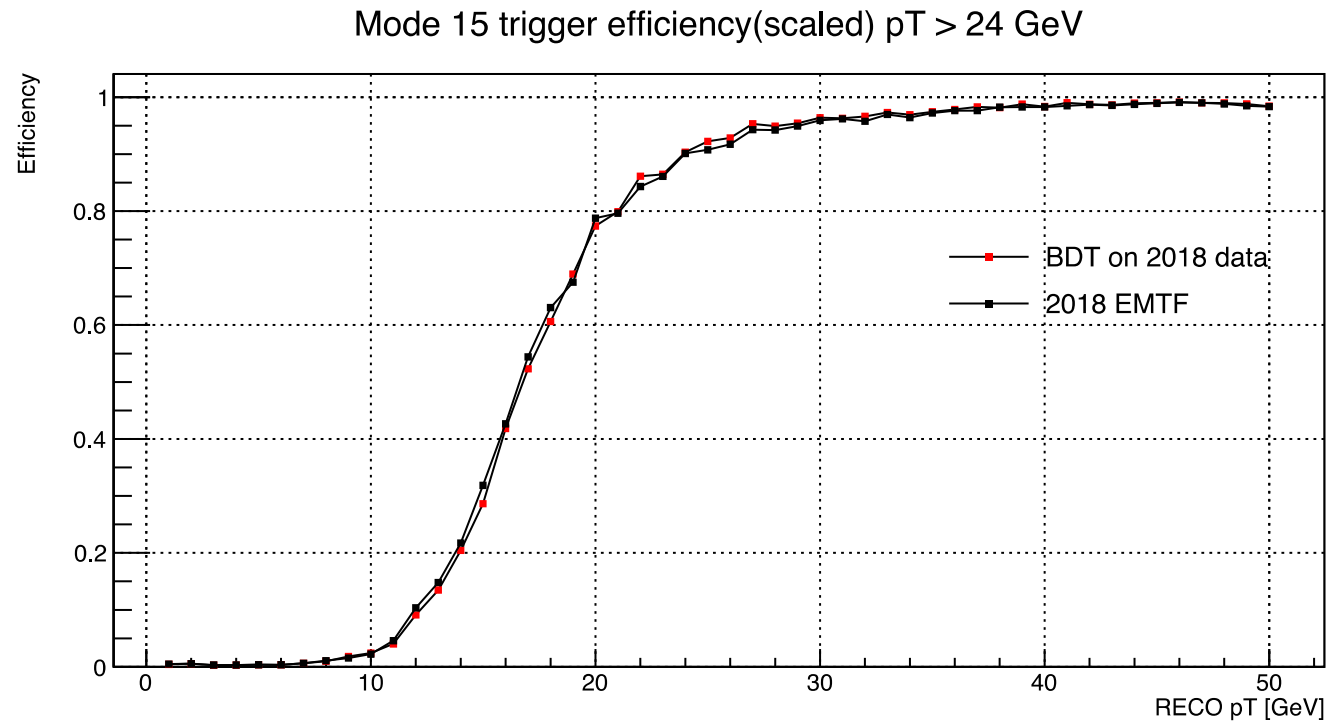
Efficiency @ 8 GeV



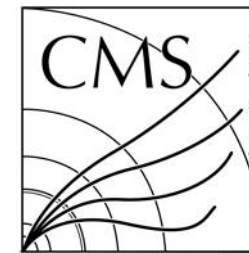
Efficiency @ 16 GeV



Efficiency @ 24 GeV

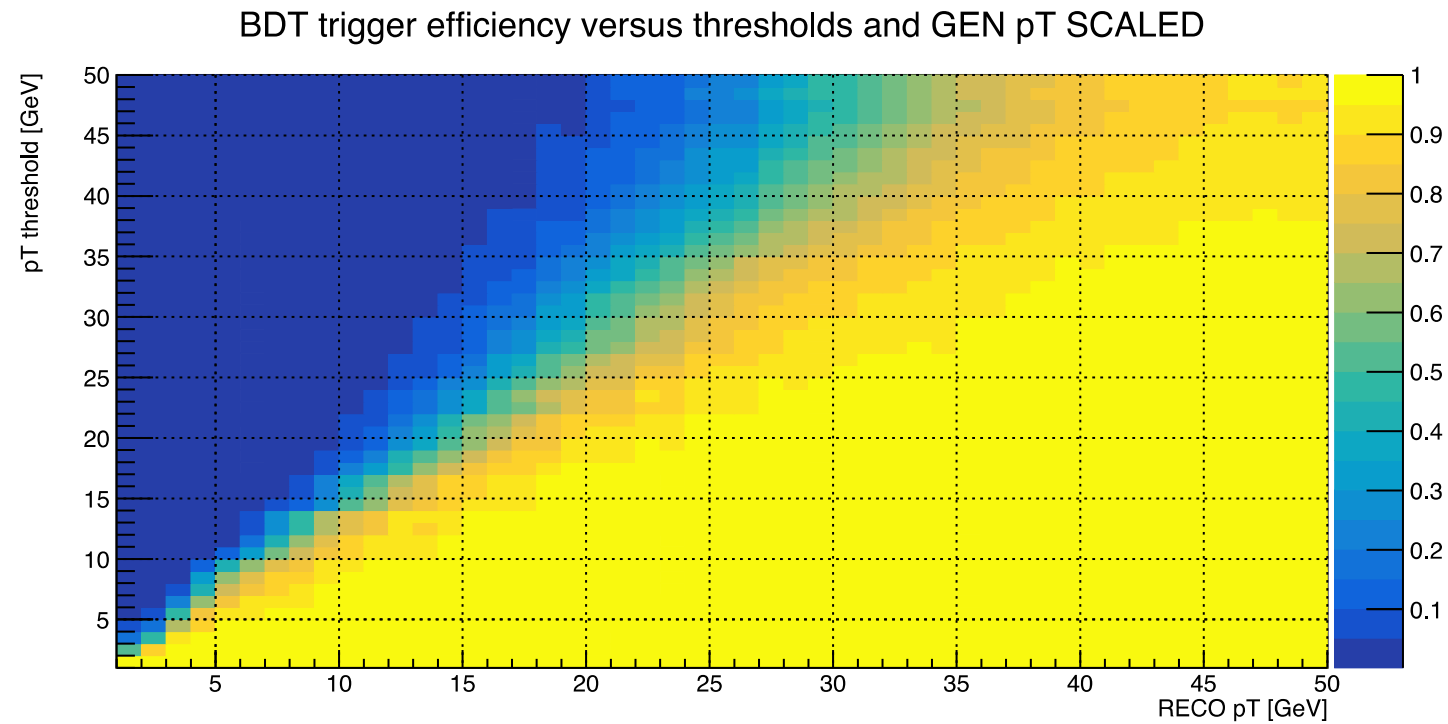


Rate

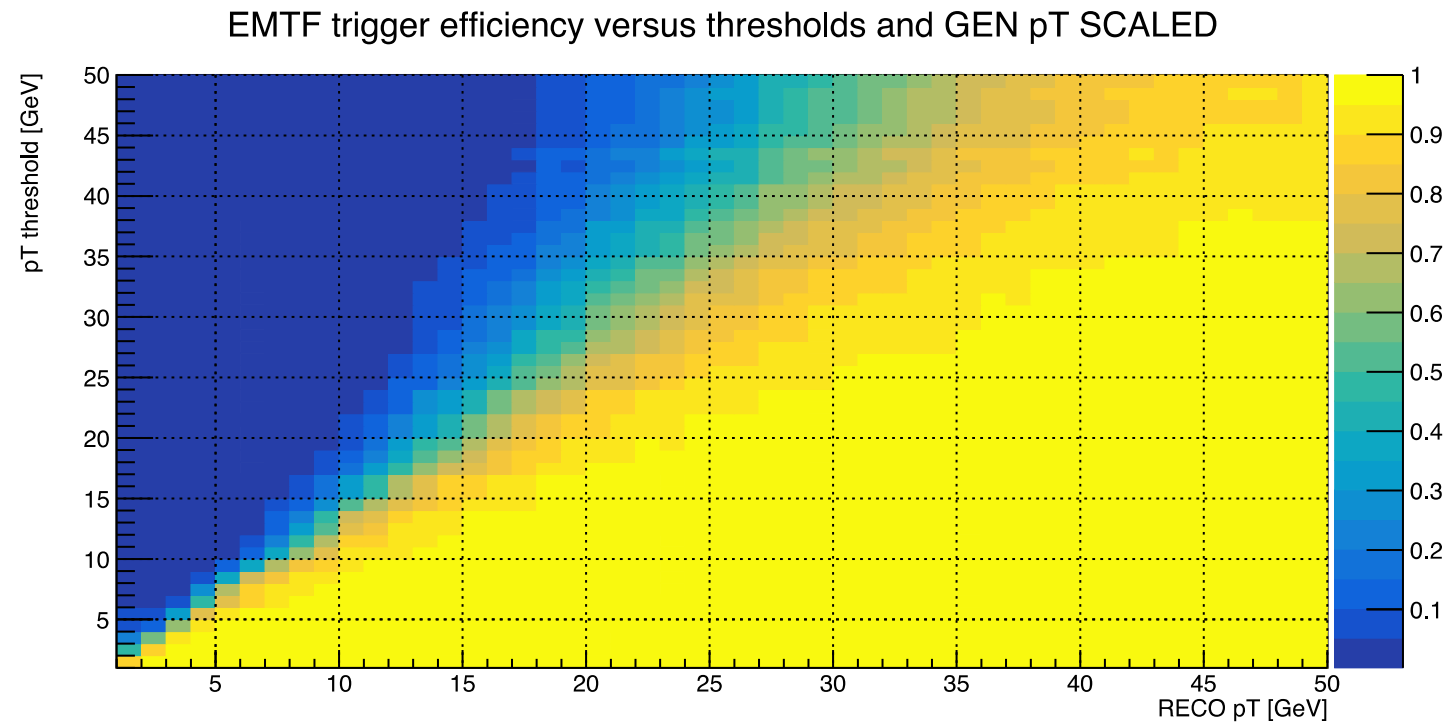
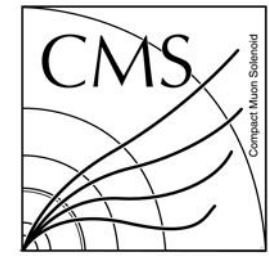


Back Up

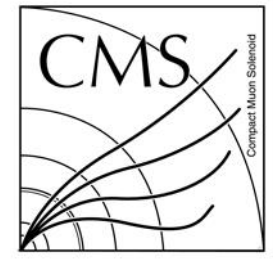
New BDT 2D Efficiency



2018 EMTF 2D Efficiency



Tools



- Training: <https://github.com/weishi10141993/EMTFPtAssign2017/blob/test/PtRegression2018.C>
- Evaluation:
https://github.com/weishi10141993/EMTFPtAssign2017/blob/test/macros/ReadMVAOut_v1_BDT.C