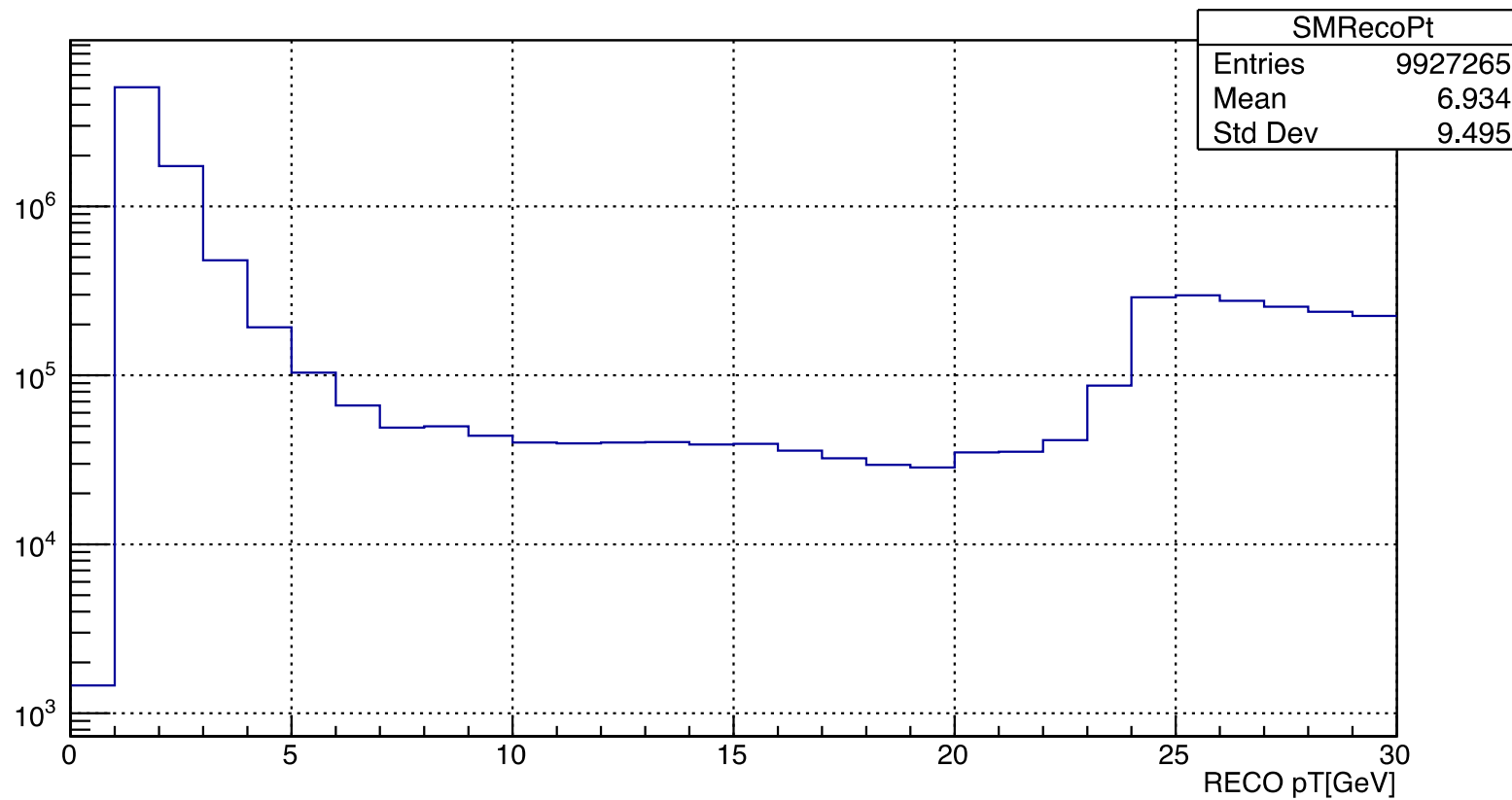# Studies on RECO Muons

Wei Shi
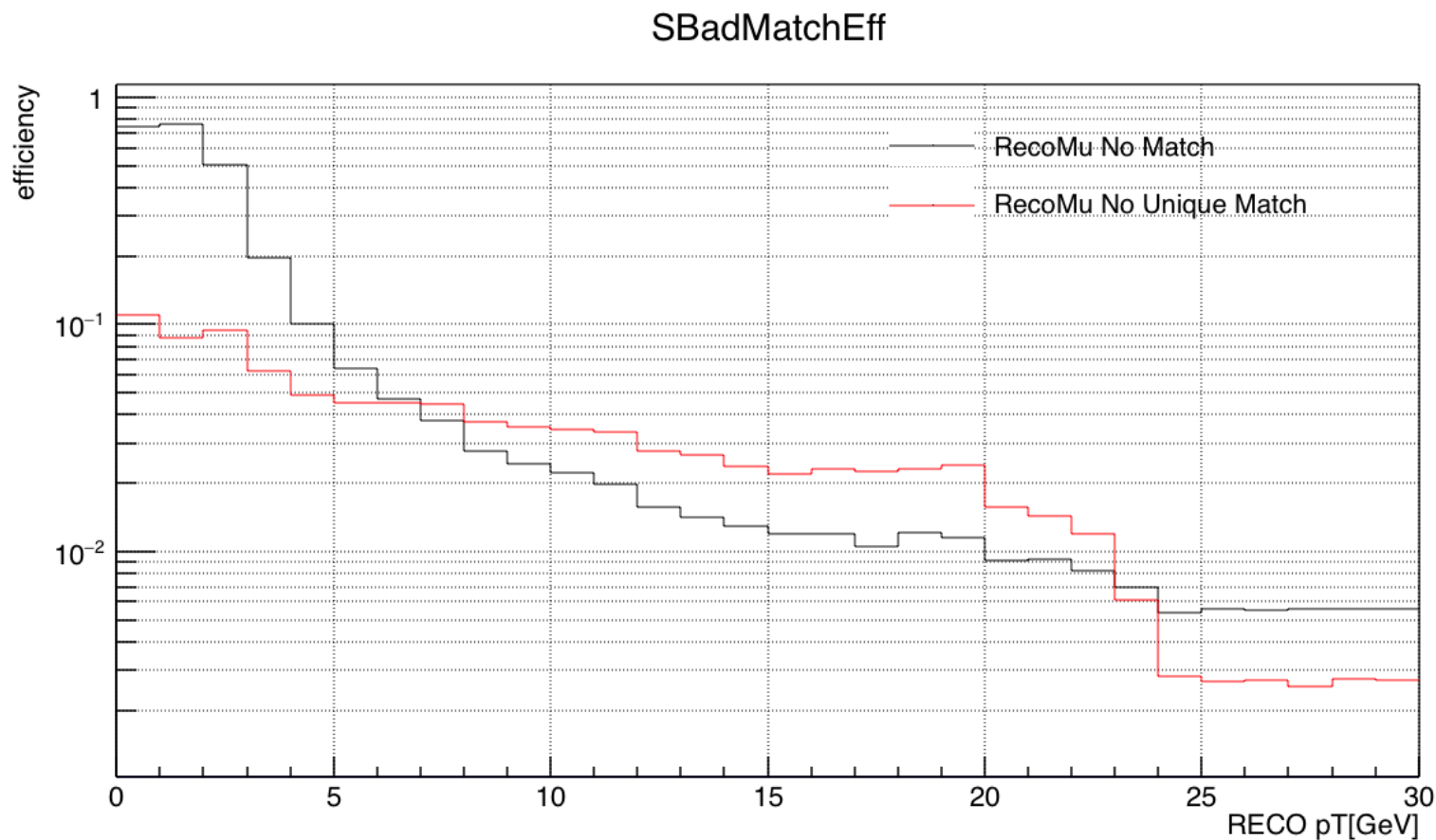
EMTF Working Meeting

Reco Mu pT
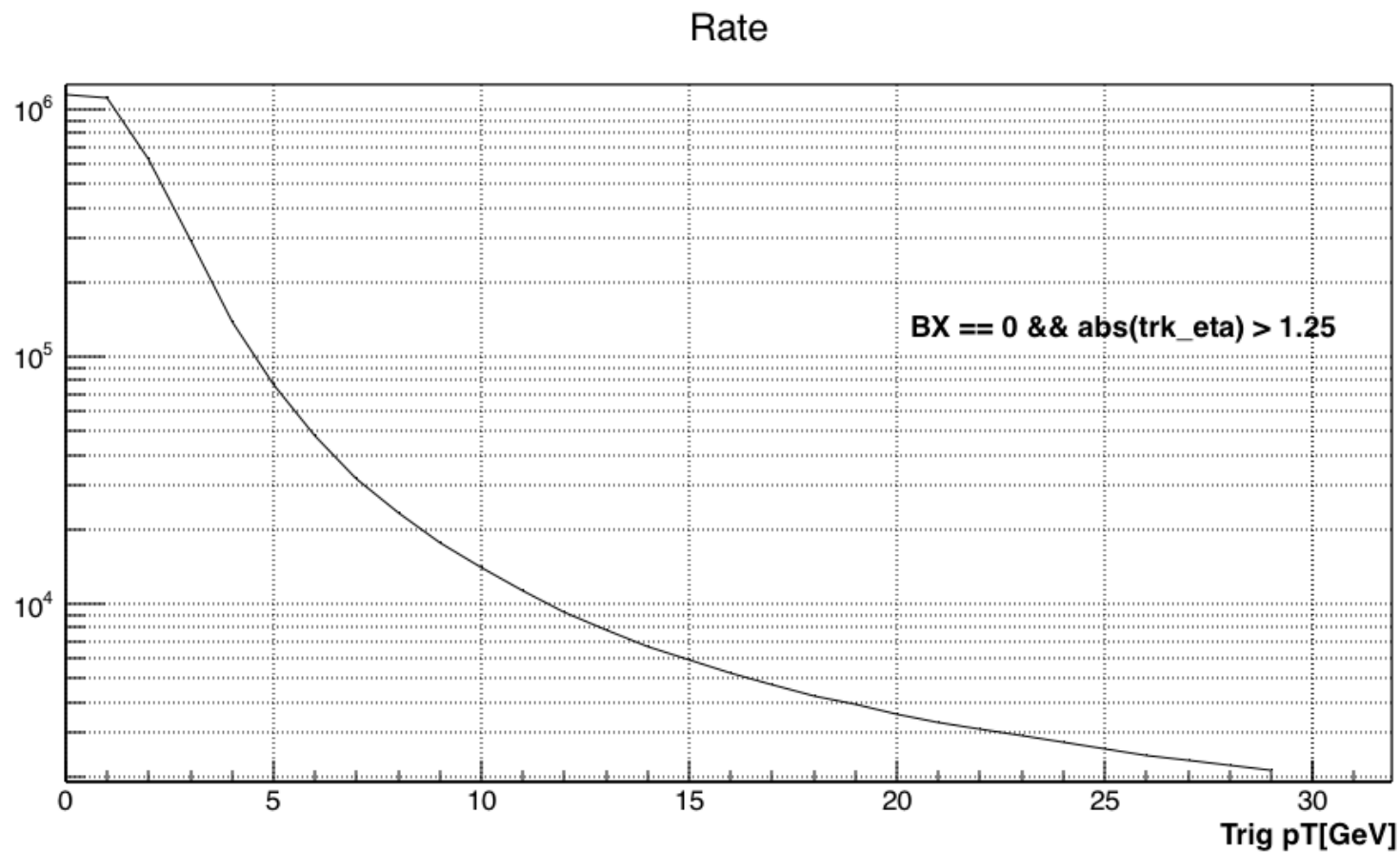
RECO pT [0, 30]GeV, looseID, ReachStationOne, abs(eta_St2) [1.25, 2.40]

SMRecoPt	
Entries	9927265
Mean	6.934
Std Dev	9.495

Reco Mu has no match or no unique match in EMTF Trks

SBadMatchEff

EMTF Trk has Unique Match in Reco Muons
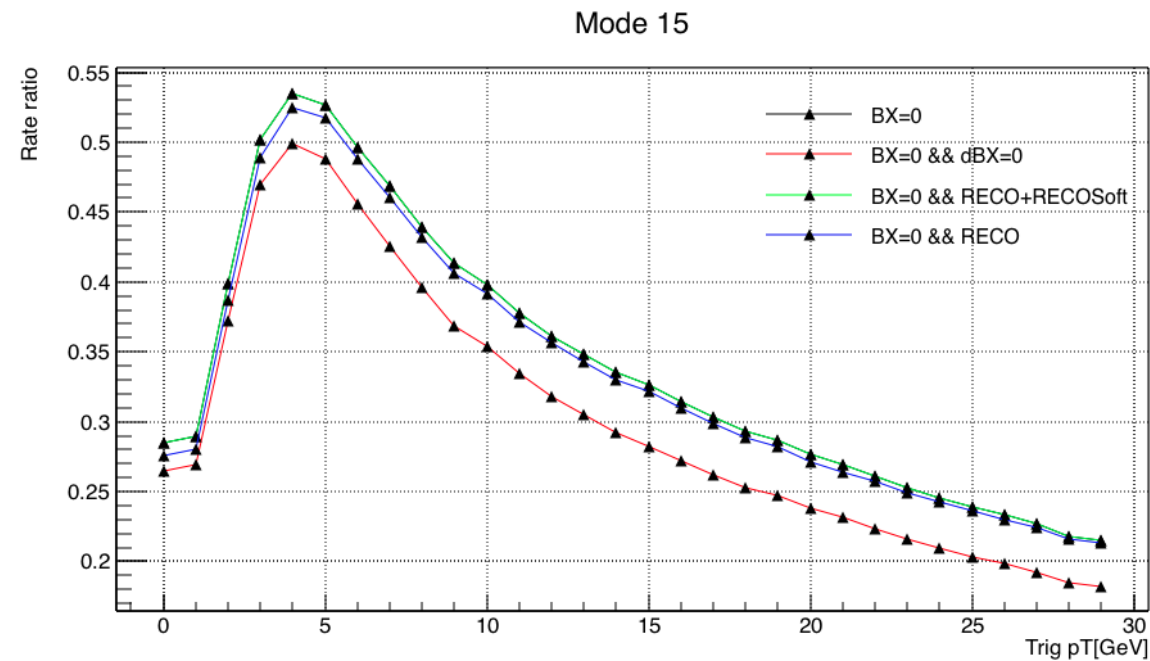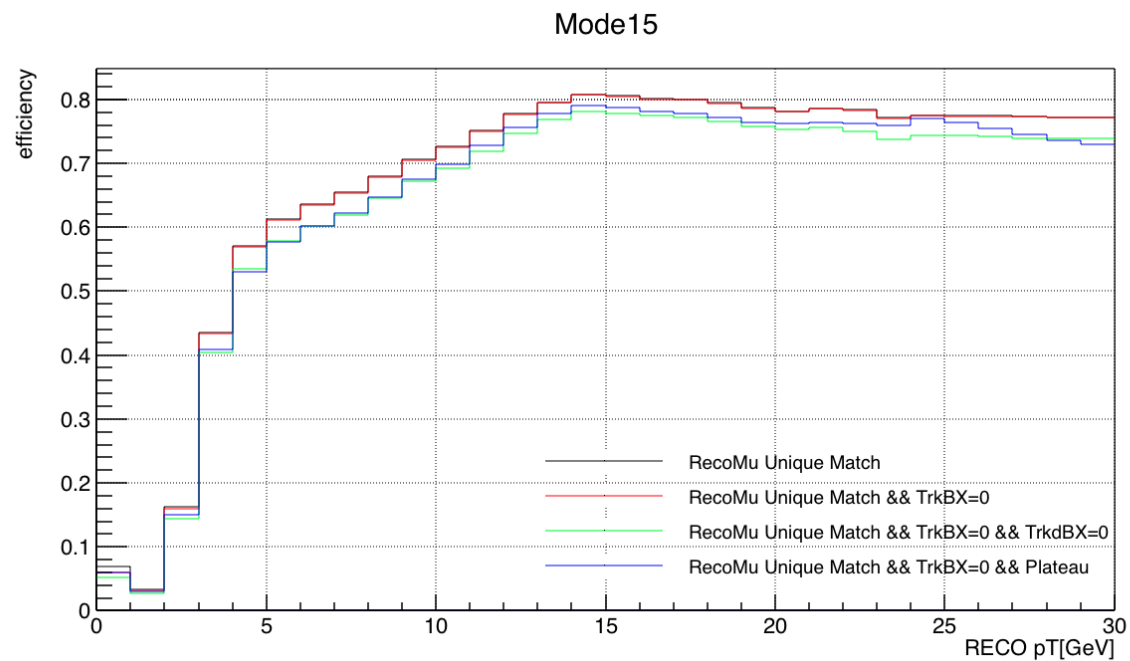
Rate

BX == 0 && abs(trk_eta) > 1.25

Trig pT[GeV]

Muon Quality

- **SingleMu Quality (Q>12)**
  - Mode 15, 14, 13, 11
- DoubleMu Quality (Q>8)
  - Mode 12, 10, 7
- MuOpen Quality (Q>4)
  - Mode 9, 6, 5, 3

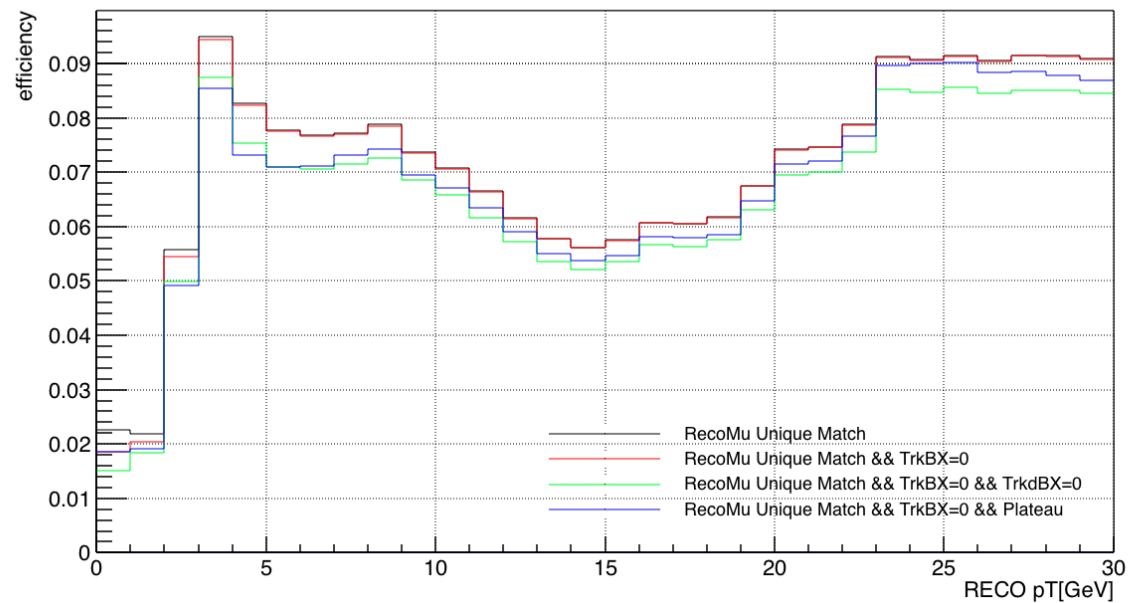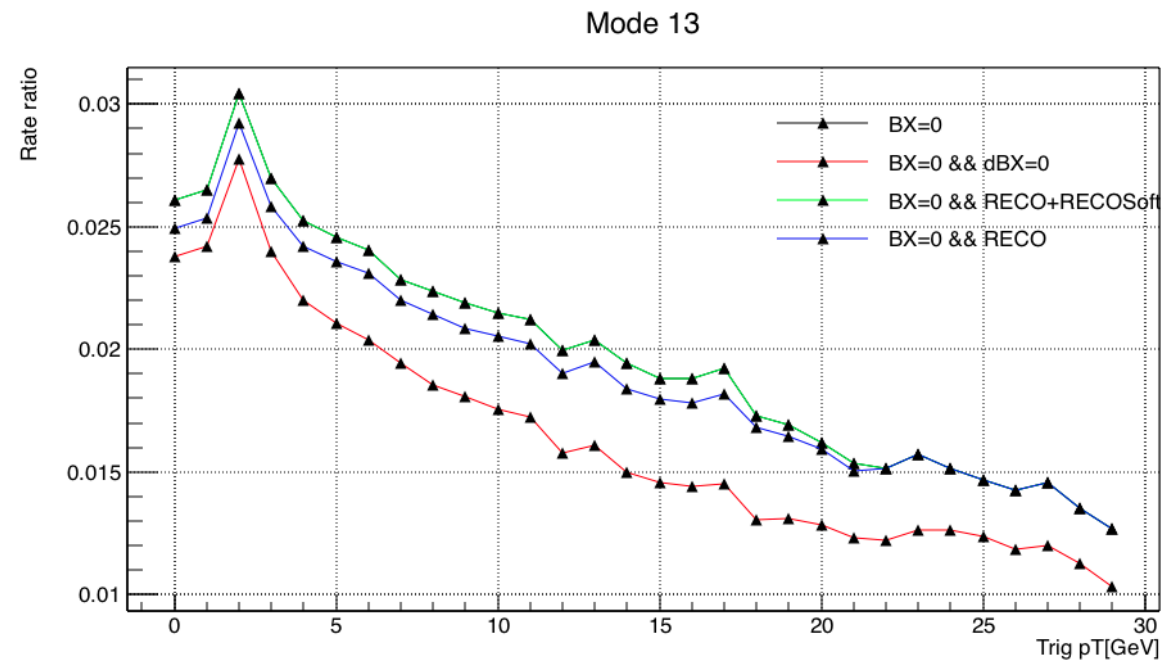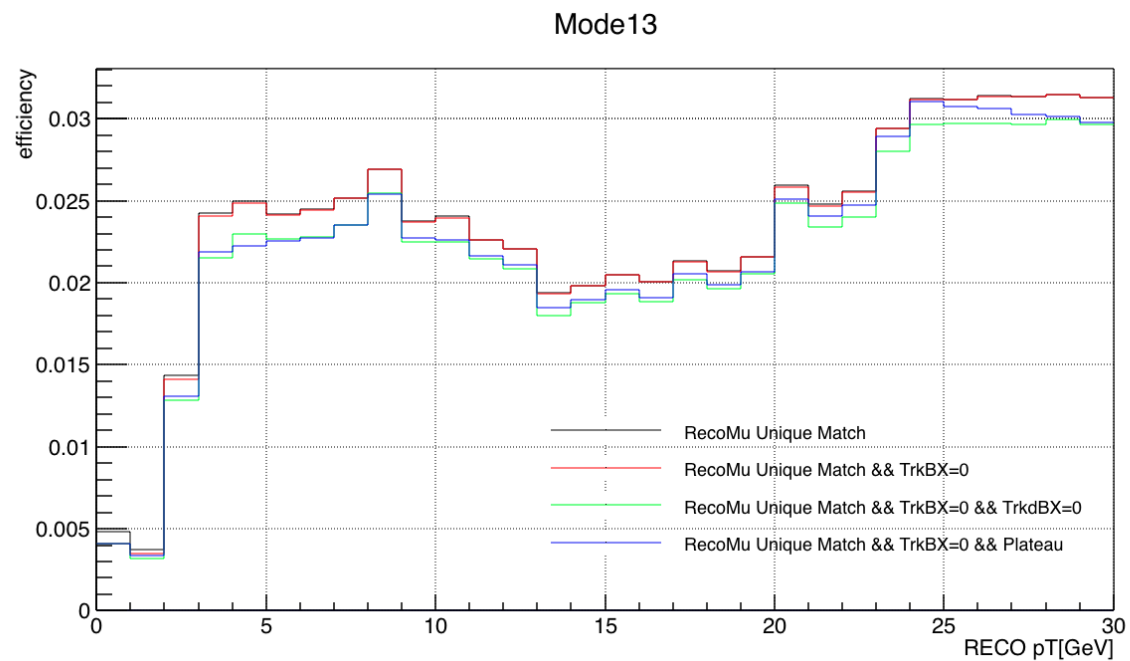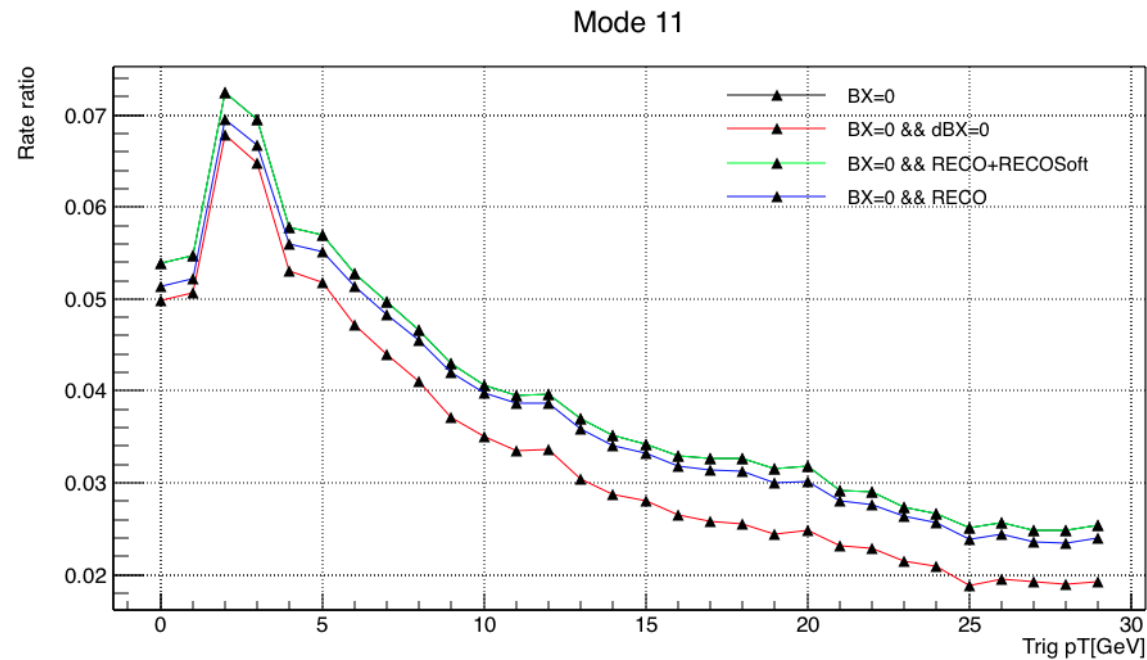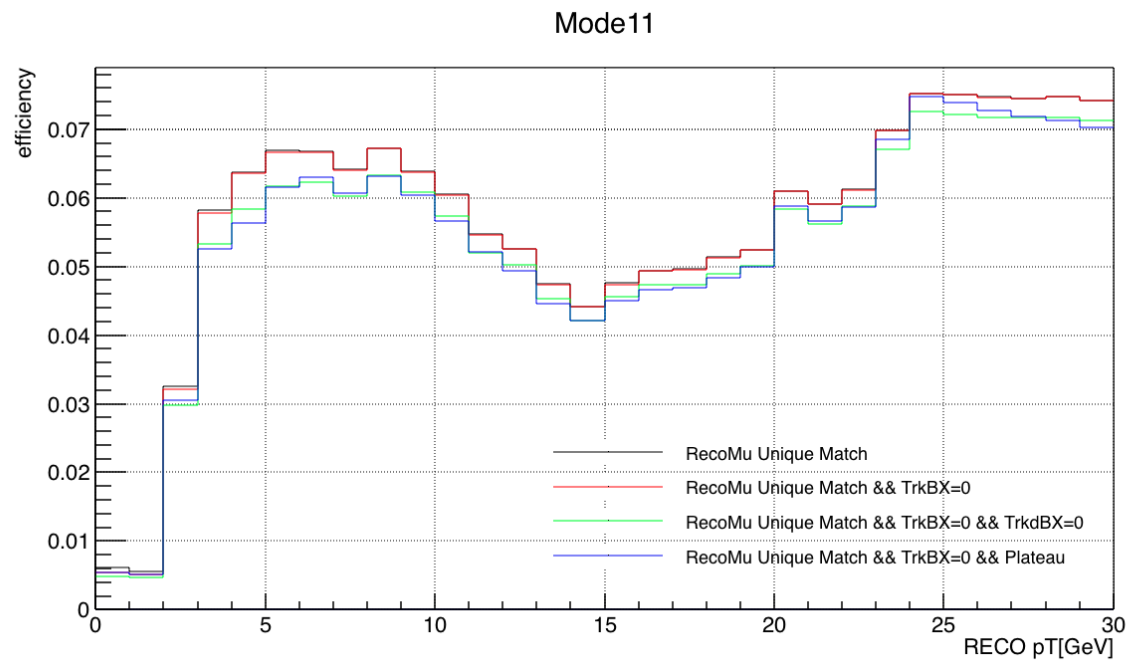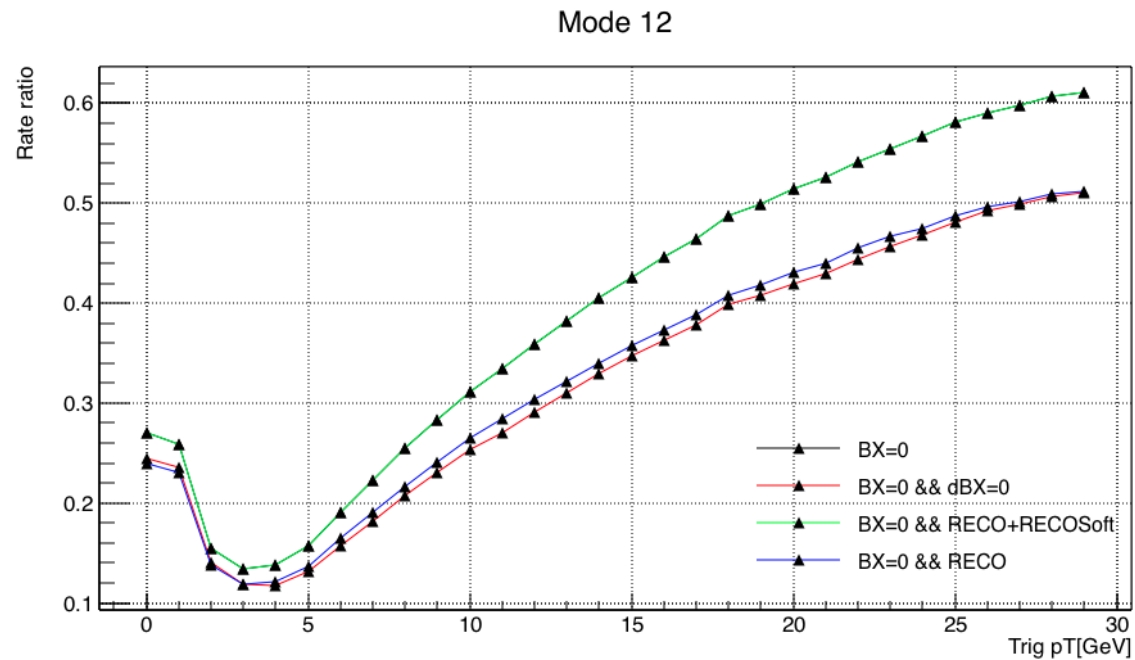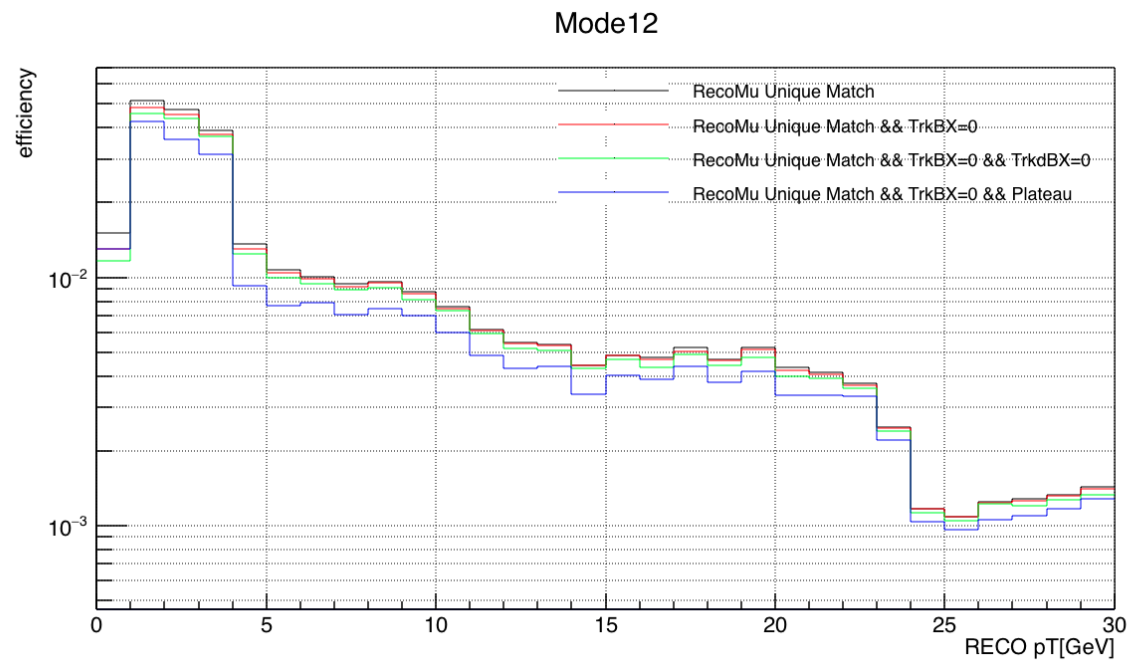| Mode #	Definiition in code	Stations
15	1+2+4+8	1,2,3,4
14	2+4+8	1,2,3
13	1+4+8	1,2,4
12	4+8	1,2
11	1+2+8	1,3,4
10	2+8	1,3
9	1+8	1,4
8	8	1
7	1+2+4	2,3,4
6	2+4	2,3
5	1+4	2,4
4	4	2
3	1+2	3,4
2	2	3
1	1	4

Mode 15

Mode 14
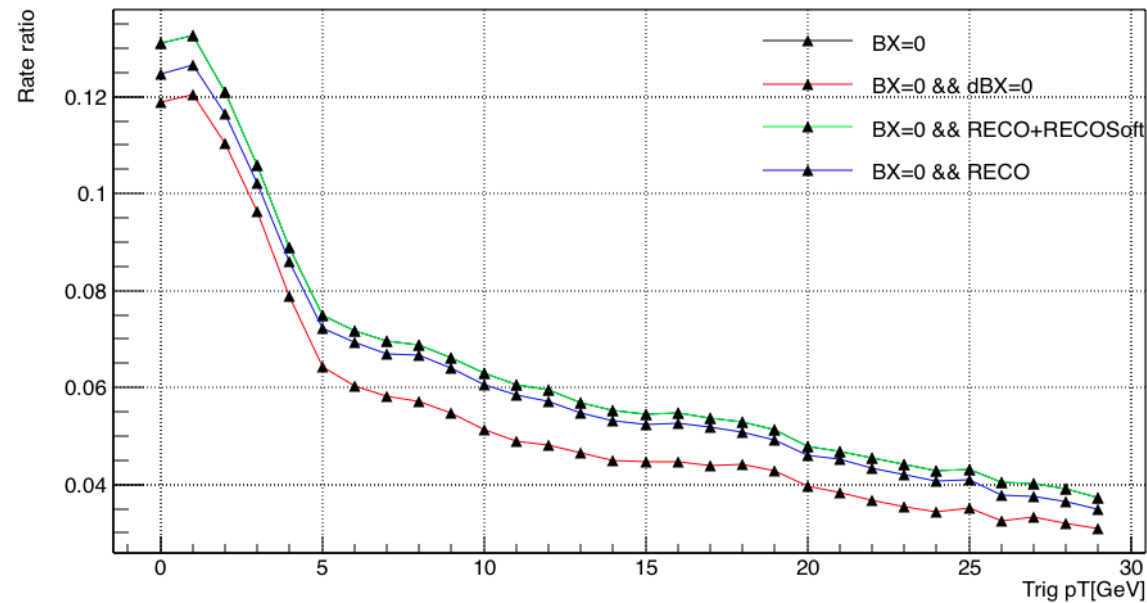
Mode 13

Mode 11

Muon Quality
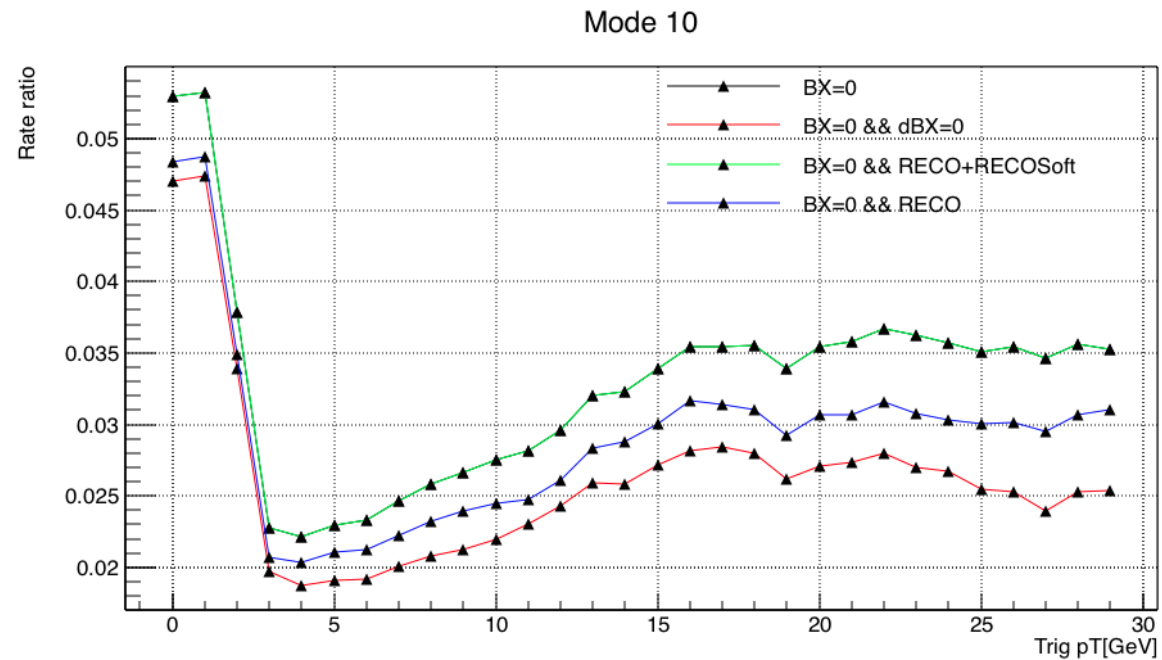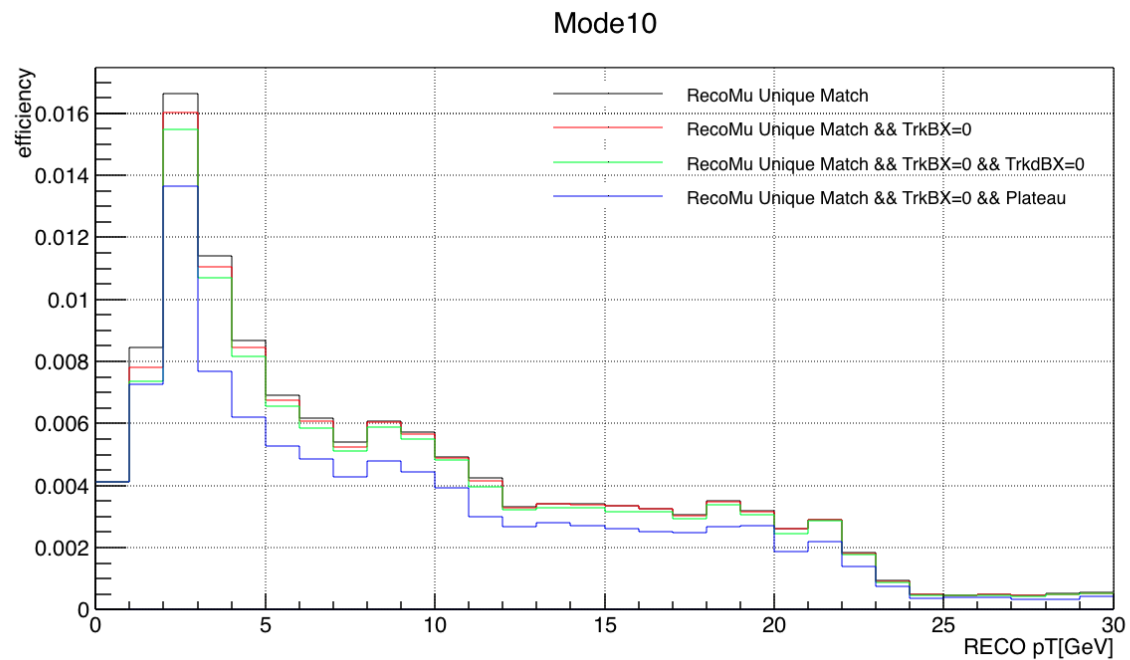
- SingleMu Quality (Q>12)
  - Mode 15, 14, 13, 11

- **DoubleMu Quality (Q>8)**
  - Mode 12, 10, 7

- MuOpen Quality (Q>4)
  - Mode 9, 6, 5, 3

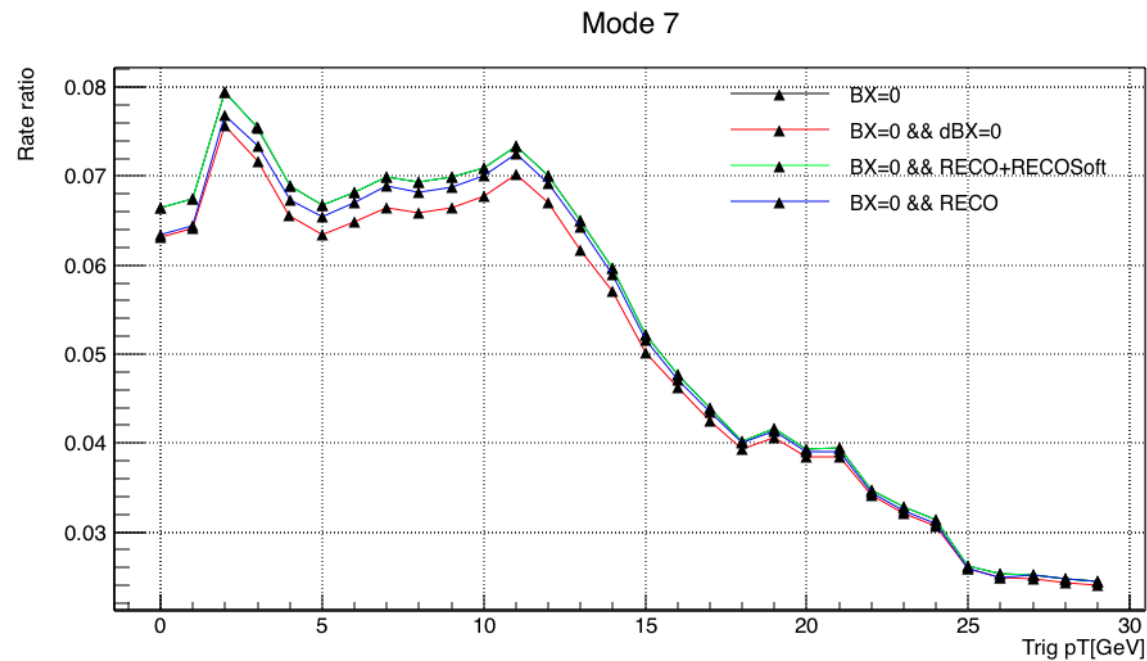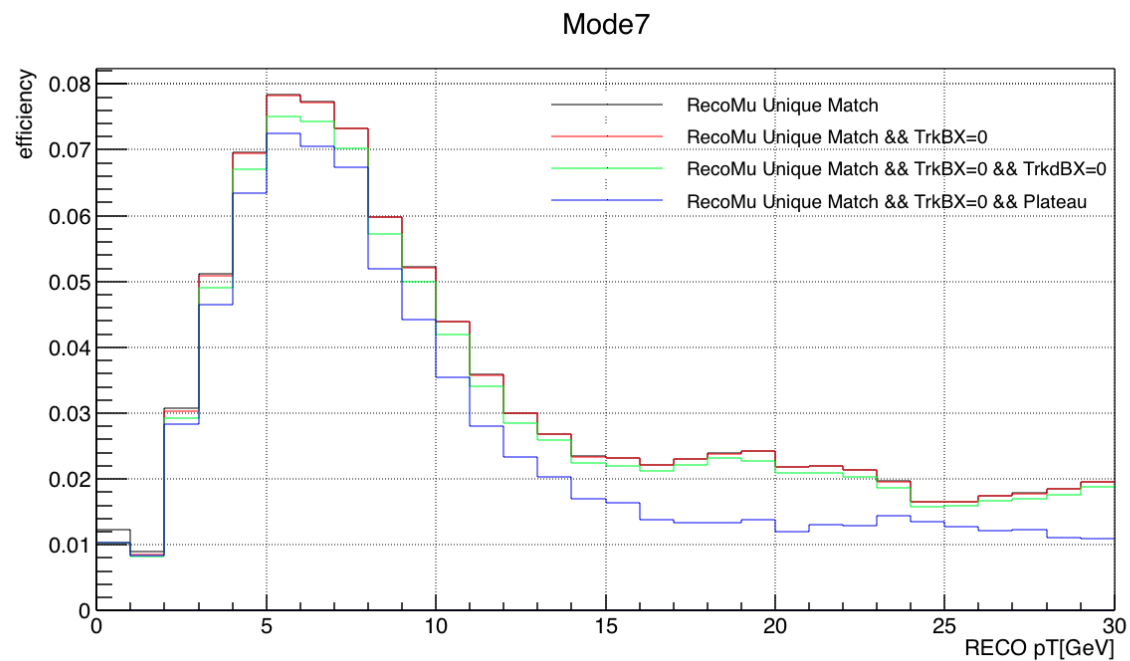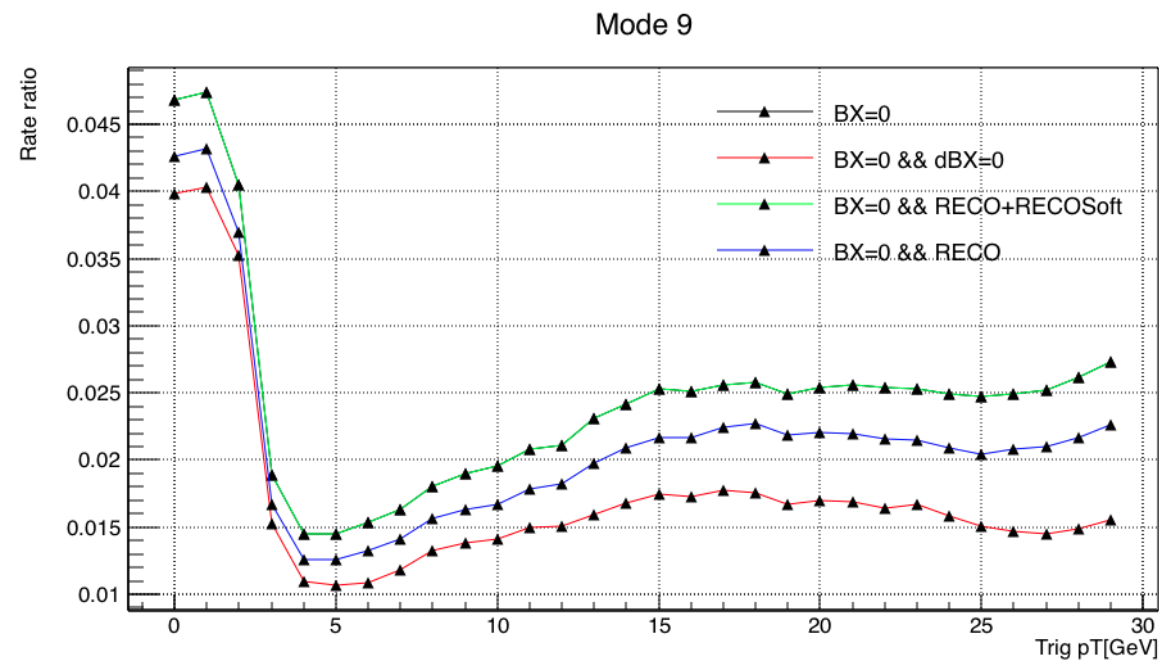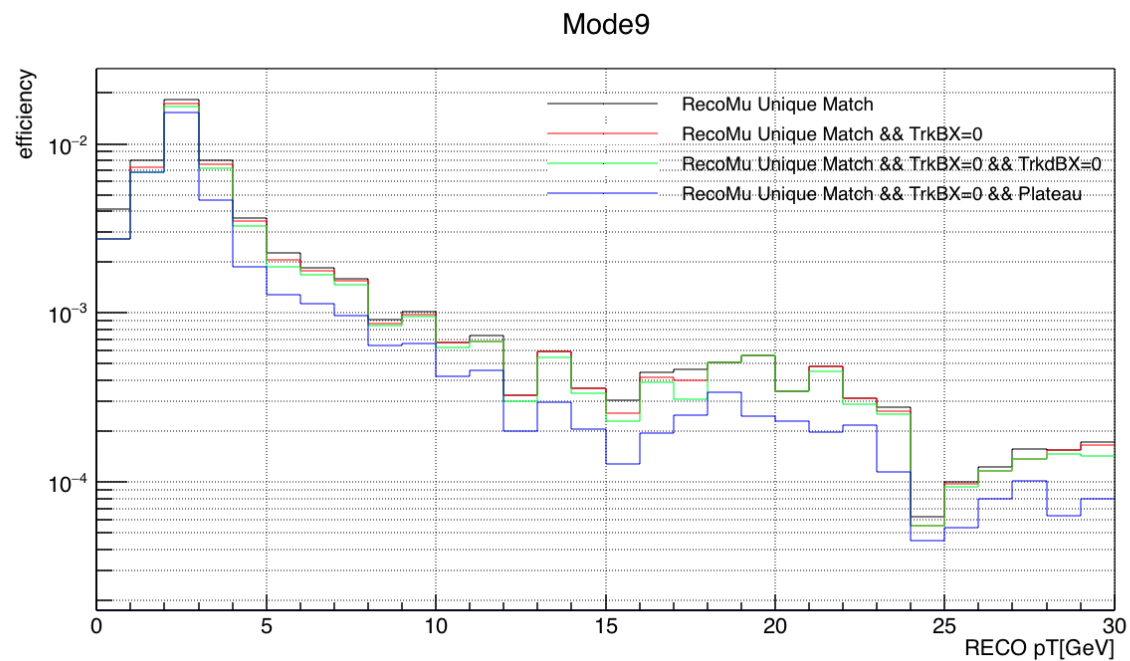| Mode #	Definiition in code	Stations
15	1+2+4+8	1,2,3,4
14	2+4+8	1,2,3
13	1+4+8	1,2,4
12	4+8	1,2
11	1+2+8	1,3,4
10	2+8	1,3
9	1+8	1,4
8	8	1
7	1+2+4	2,3,4
6	2+4	2,3
5	1+4	2,4
4	4	2
3	1+2	3,4
2	2	3
1	1	4

Mode 12

Mode 10

Mode 7

Muon Quality
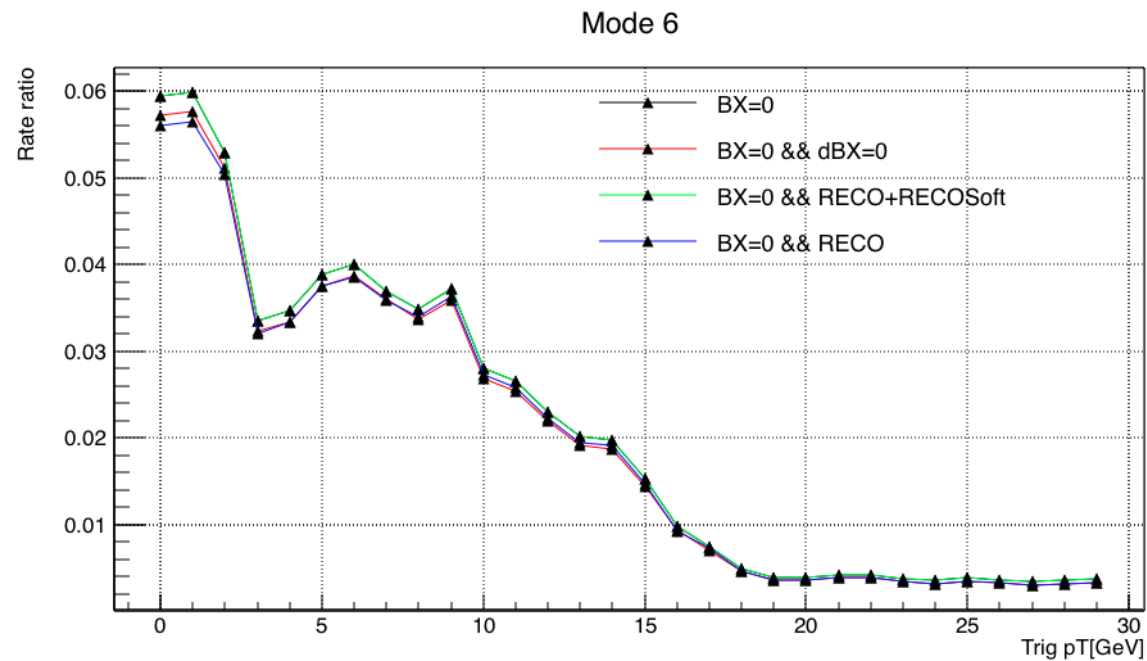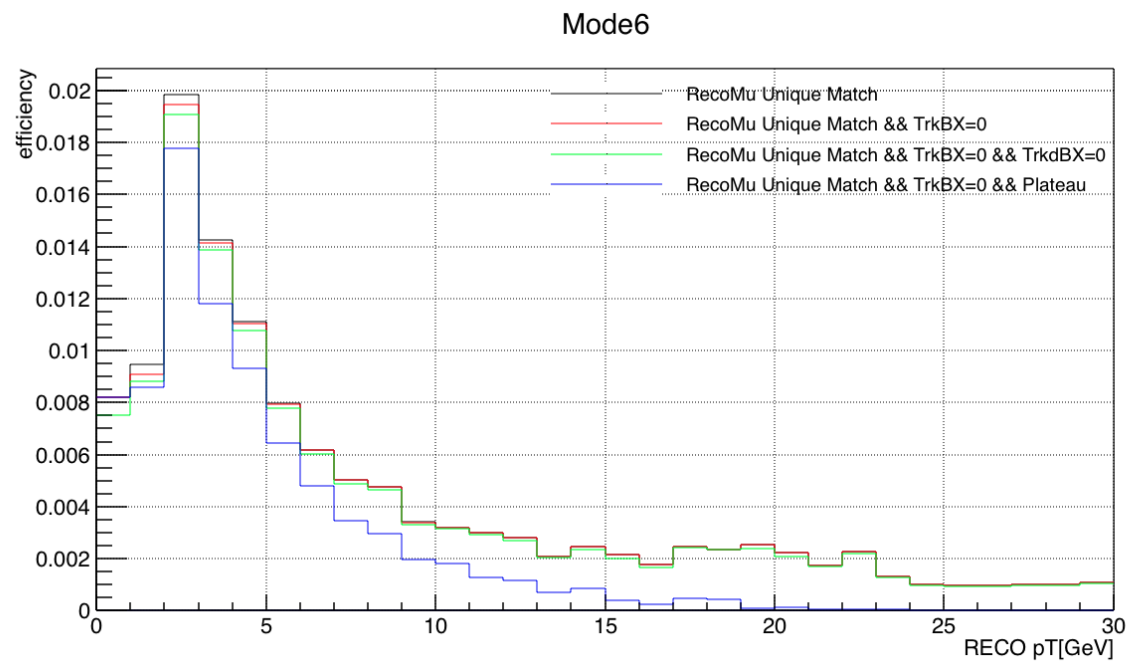
- SingleMu Quality (Q>12)
  - Mode 15, 14, 13, 11
- DoubleMu Quality (Q>8)
  - Mode 12, 10, 7
- MuOpen Quality (Q>4)
  - Mode 9, 6, 5, 3

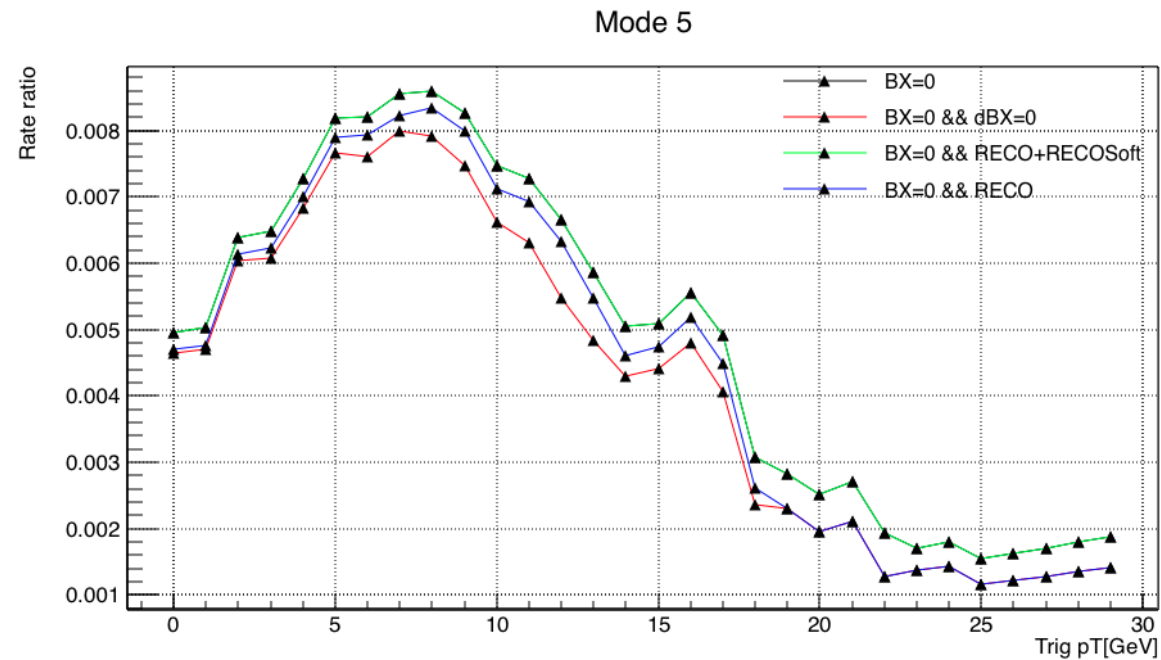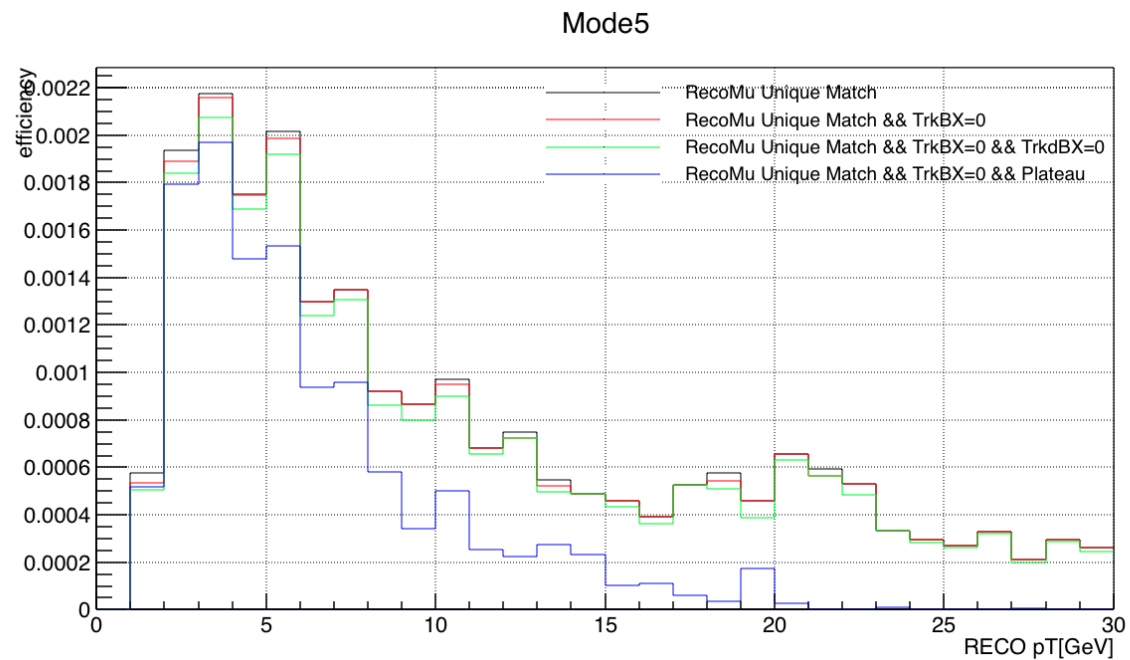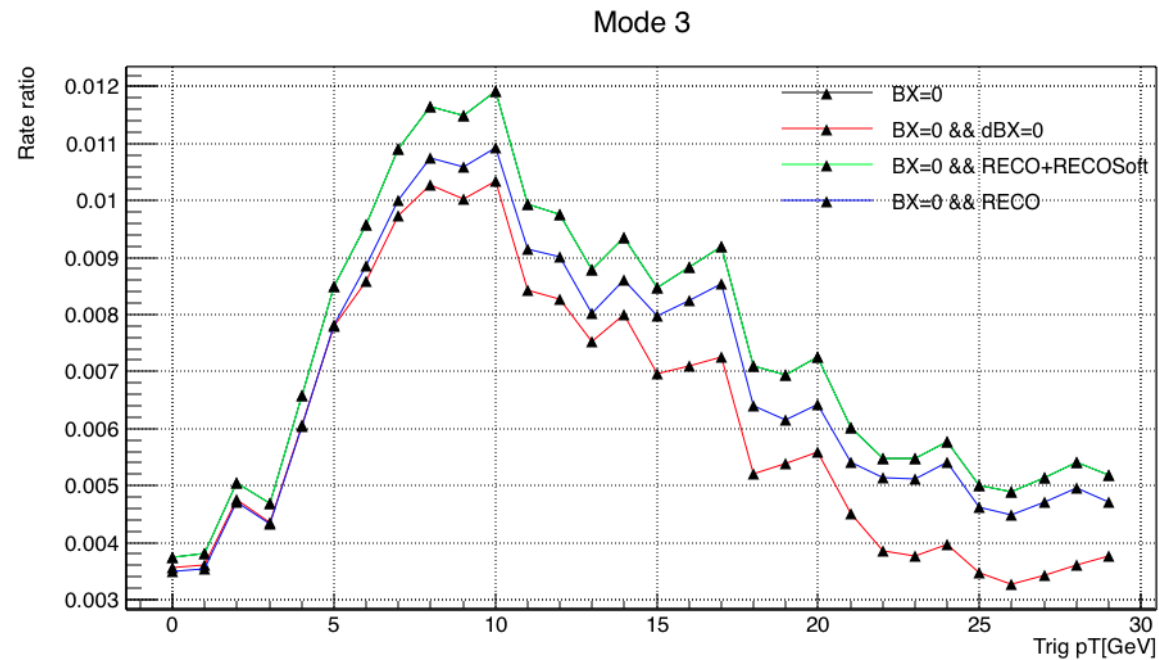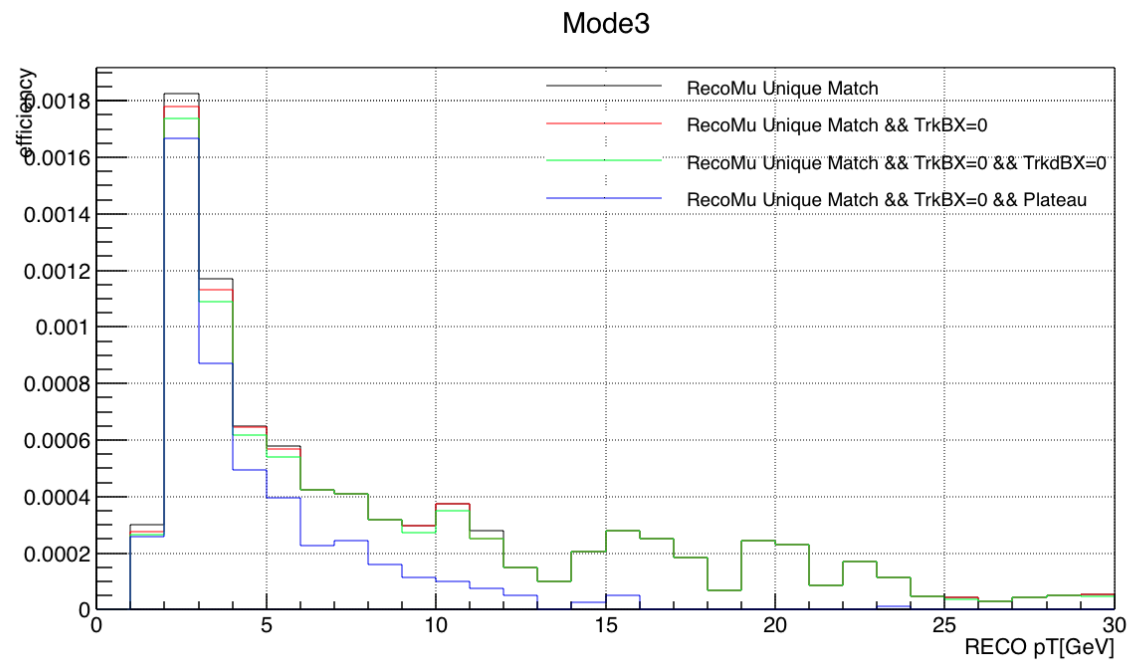| Mode #	Definiition in code	Stations
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14	2+4+8	1,2,3
13	1+4+8	1,2,4
12	4+8	1,2
11	1+2+8	1,3,4
10	2+8	1,3
9	1+8	1,4
8	8	1
7	1+2+4	2,3,4
6	2+4	2,3
5	1+4	2,4
4	4	2
3	1+2	3,4
2	2	3
1	1	4

Mode 9

Mode 6

Mode 5

Mode 3

Back Up

Macro

- https://github.com/weishi10141993/EMTF_CSCTF_pTResolution_TrackBuild_dR_Matching/blob/master/ModesRateEff.C