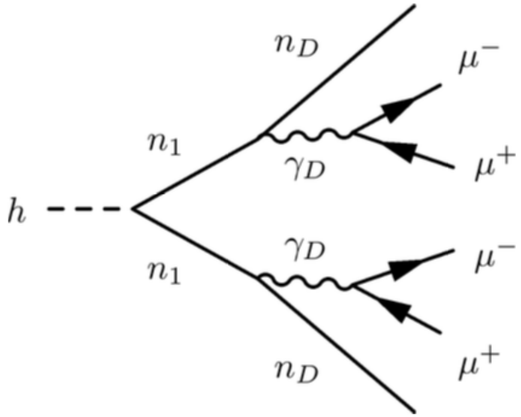
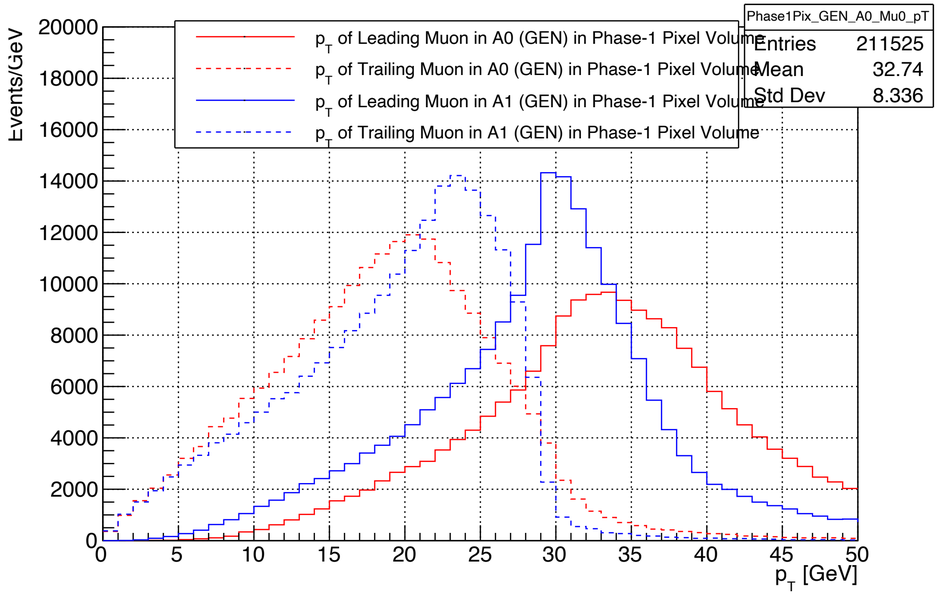
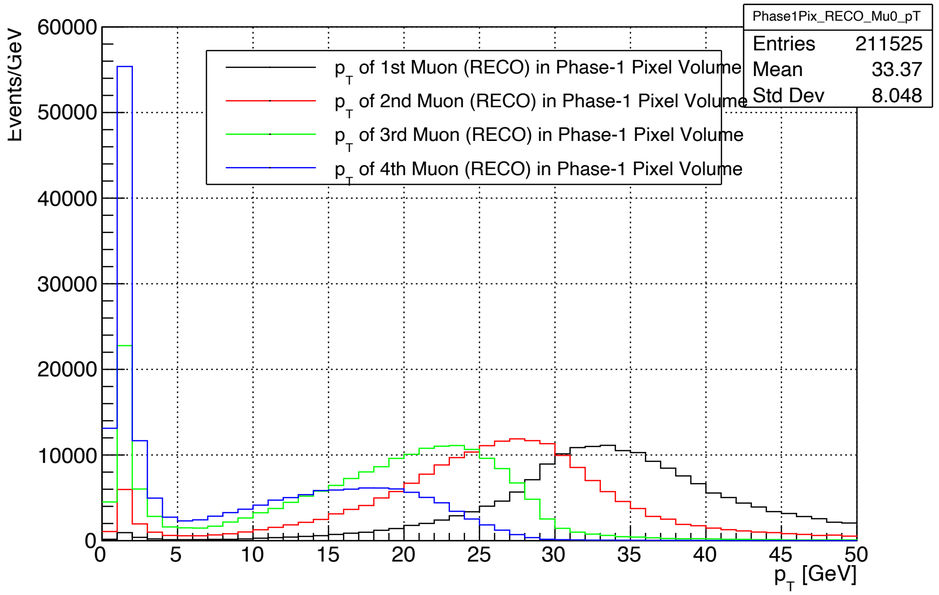
# Run 2 Muon Reconstruction (slimmedMuons)
# pT Peaks at 2-3 GeV

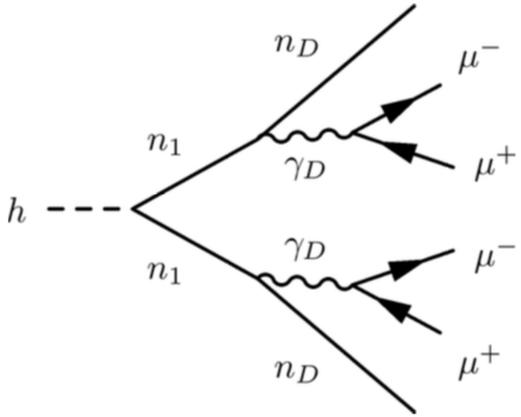
# 2017 MSSMD MC [m(h)=125GeV, m(n1)=60GeV, m(nD)=1GeV]: m_gammaD=58 GeV, cTau=100 mm

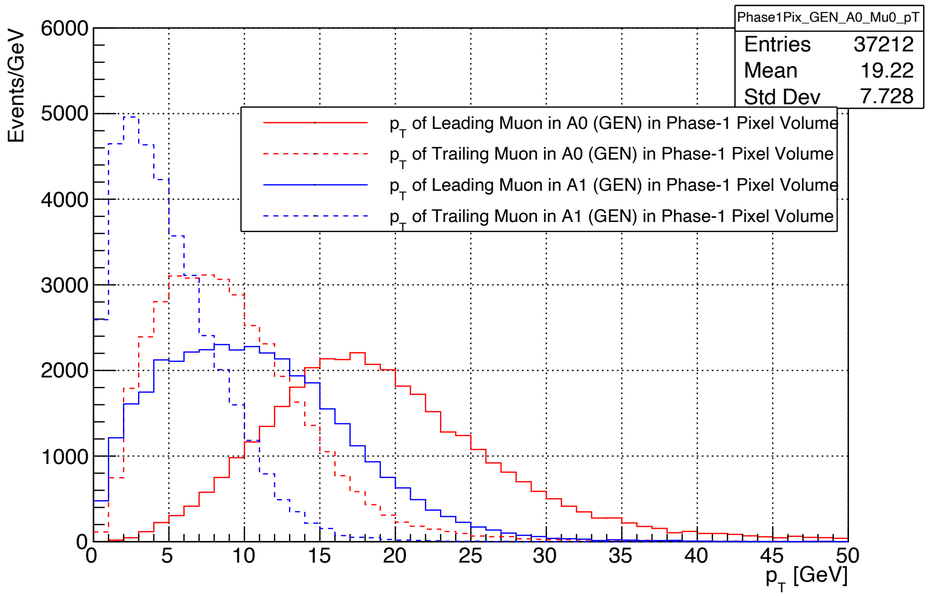


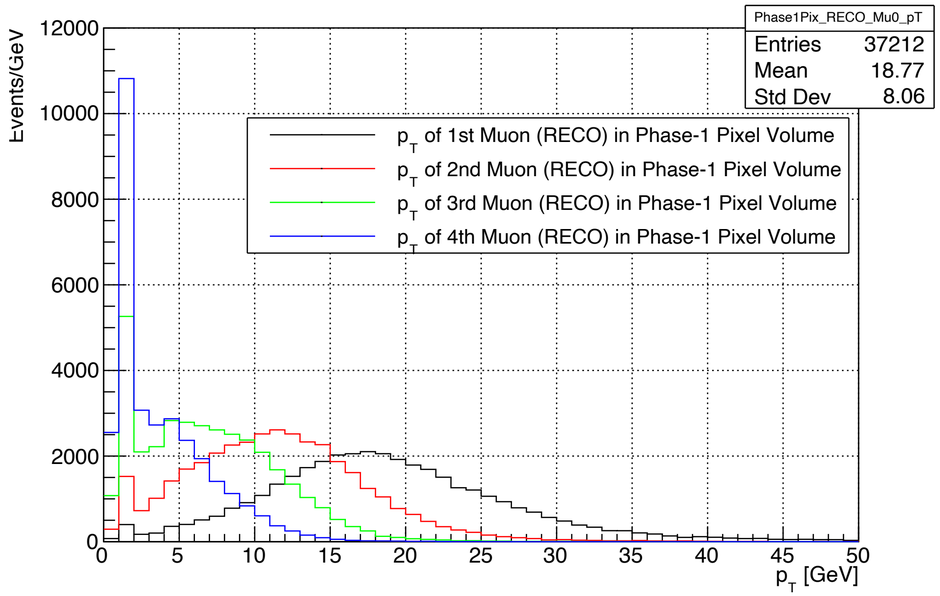



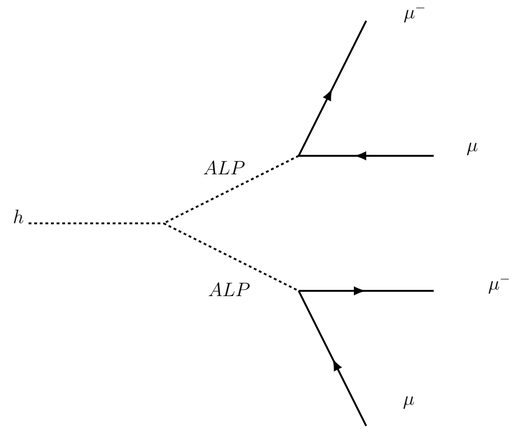
# 2017 MSSMD MC [m(h)=125GeV, m(n1)=60GeV, m(nD)=1GeV]: m_gammaD=0.4 GeV, cTau=100 mm

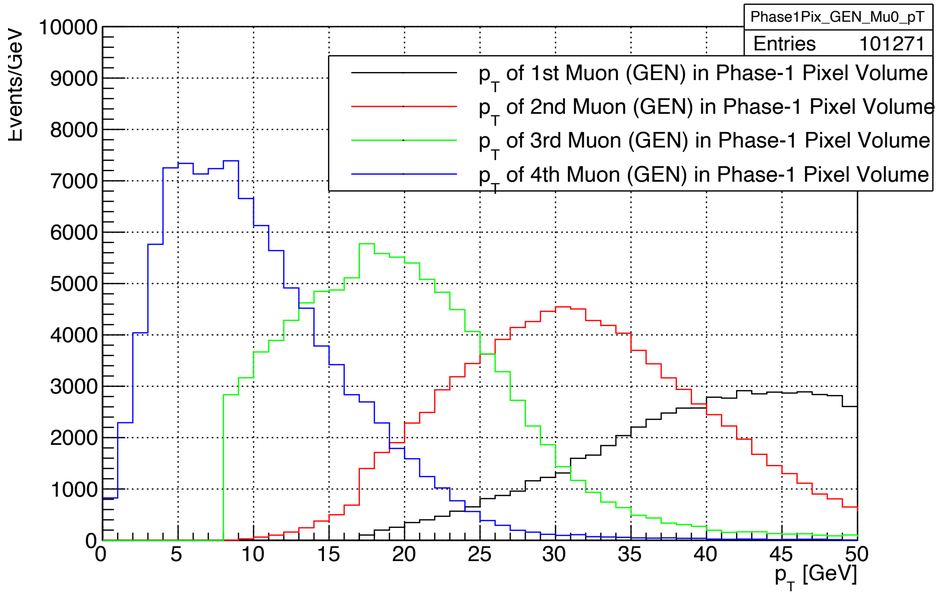


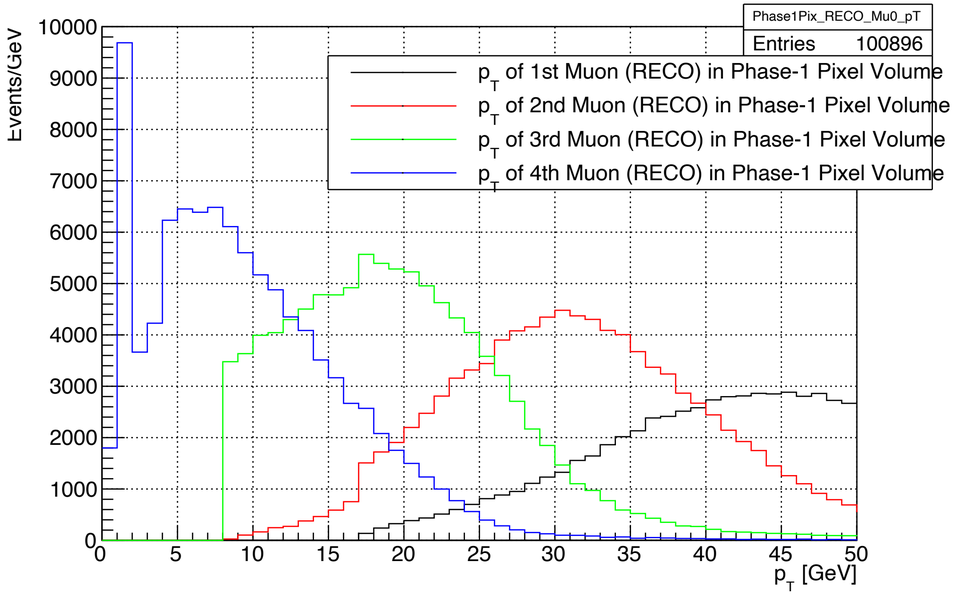



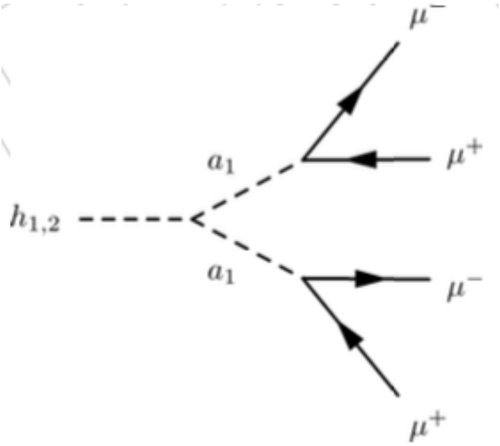
# 2017 ALP MC: m(h)=125 GeV, m(ALP)=30 GeV (prompt)

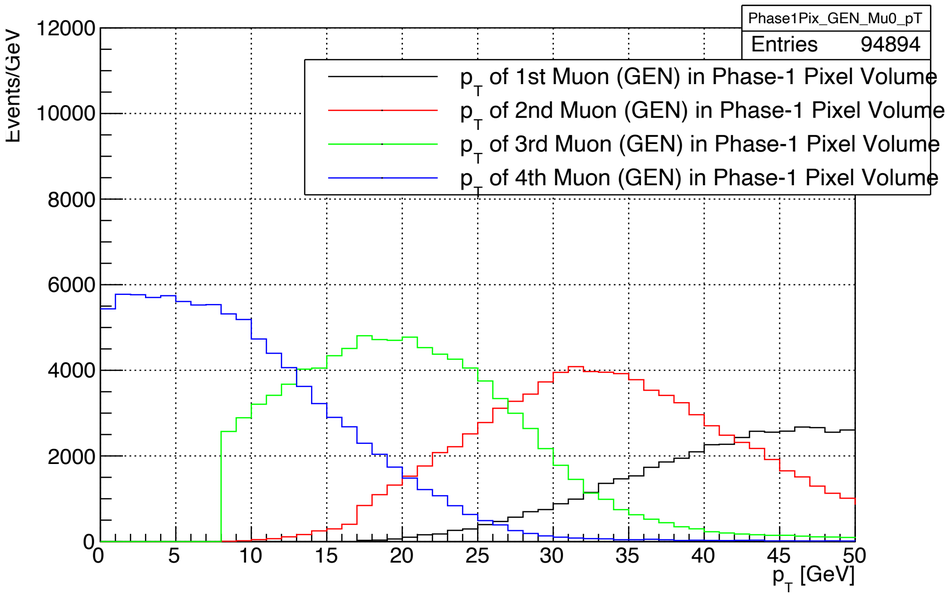


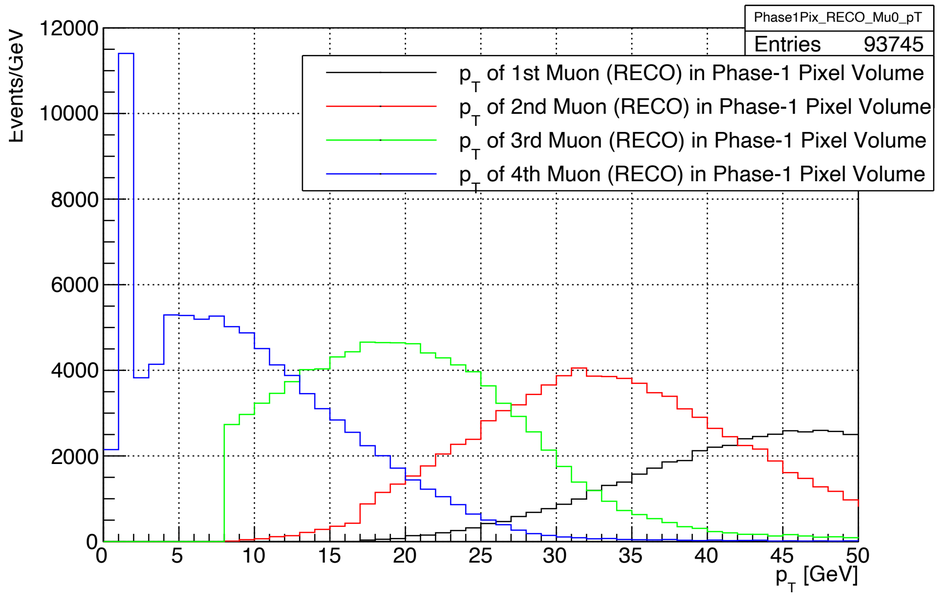



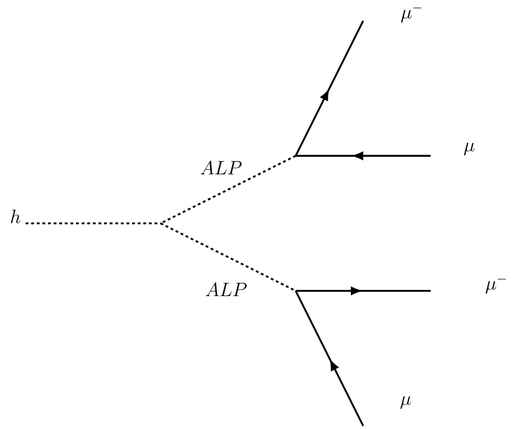
# 2017 NMSSM MC: m(h)=125 GeV, m(a1)=3 GeV (prompt)

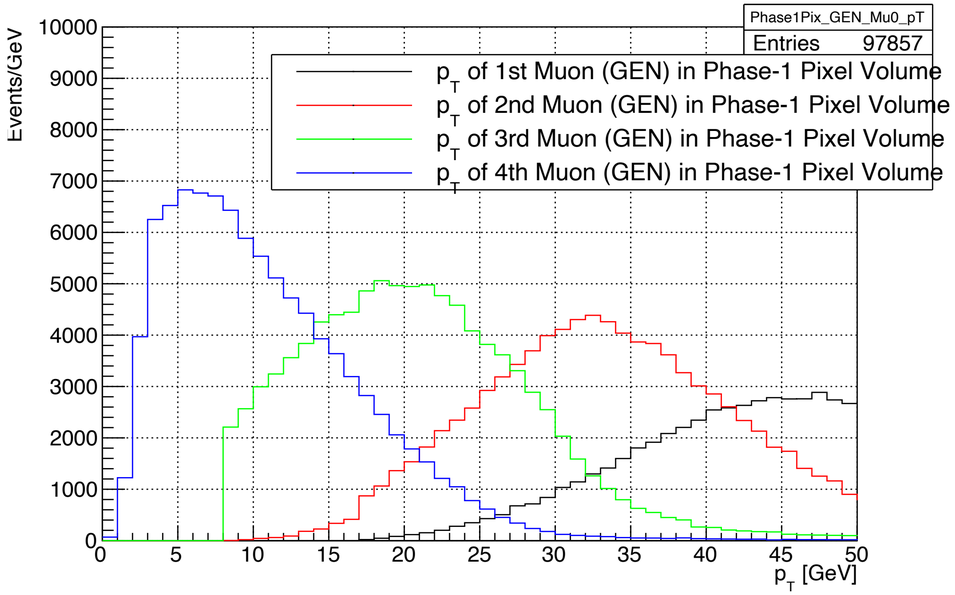


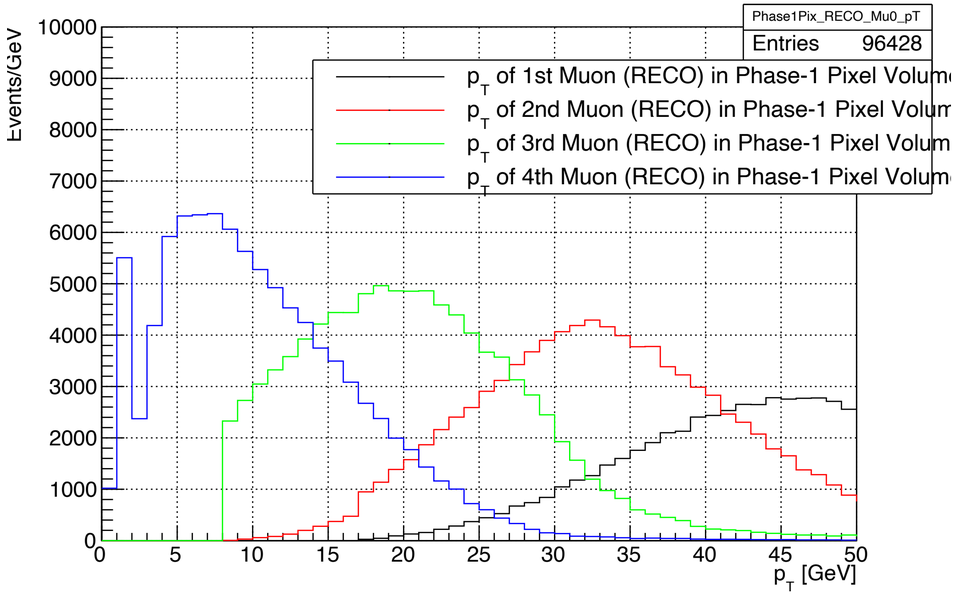



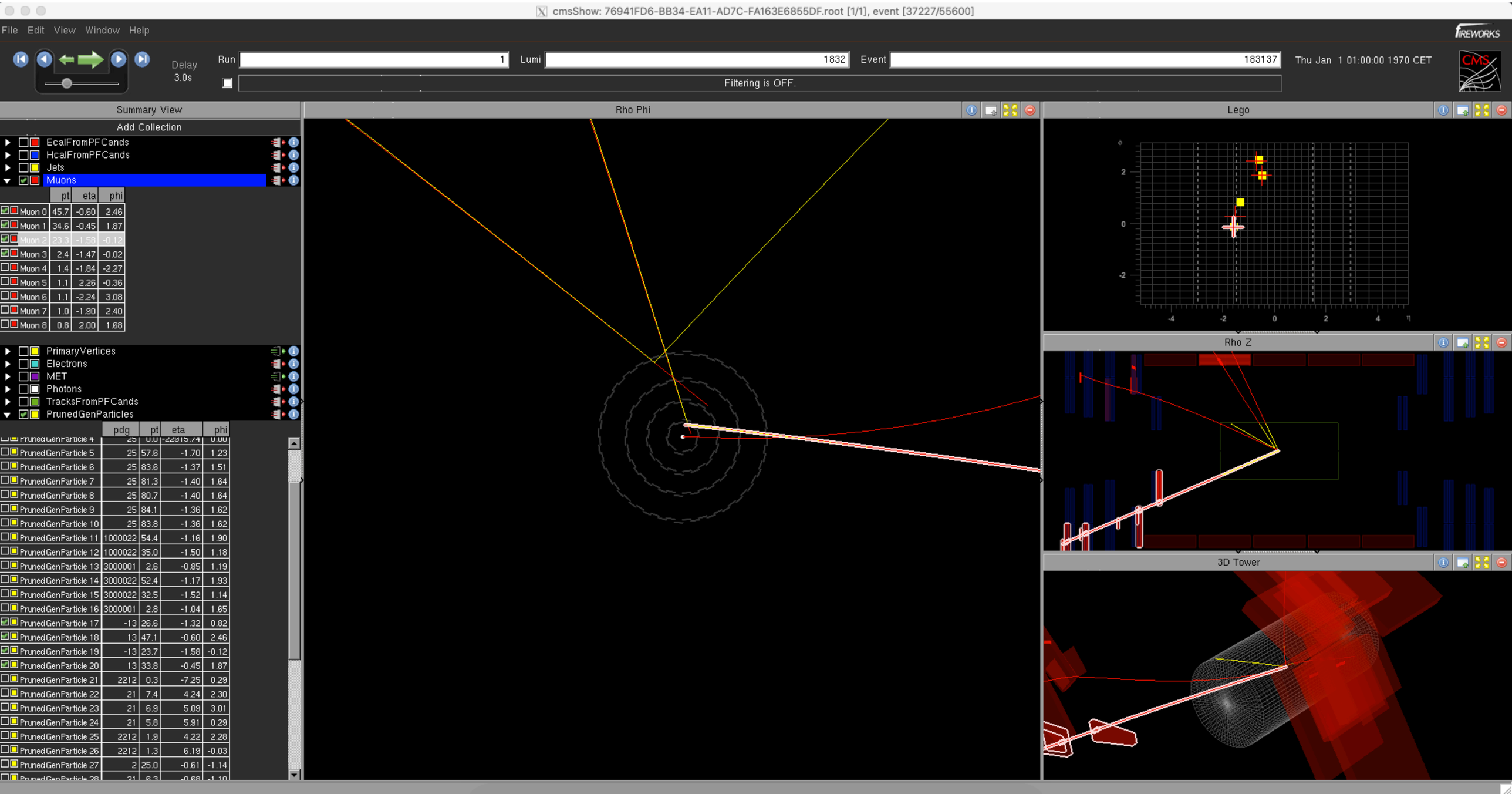
# 2017 ALP MC: m(h)=125 GeV, m(ALP)=0.5 GeV (prompt)



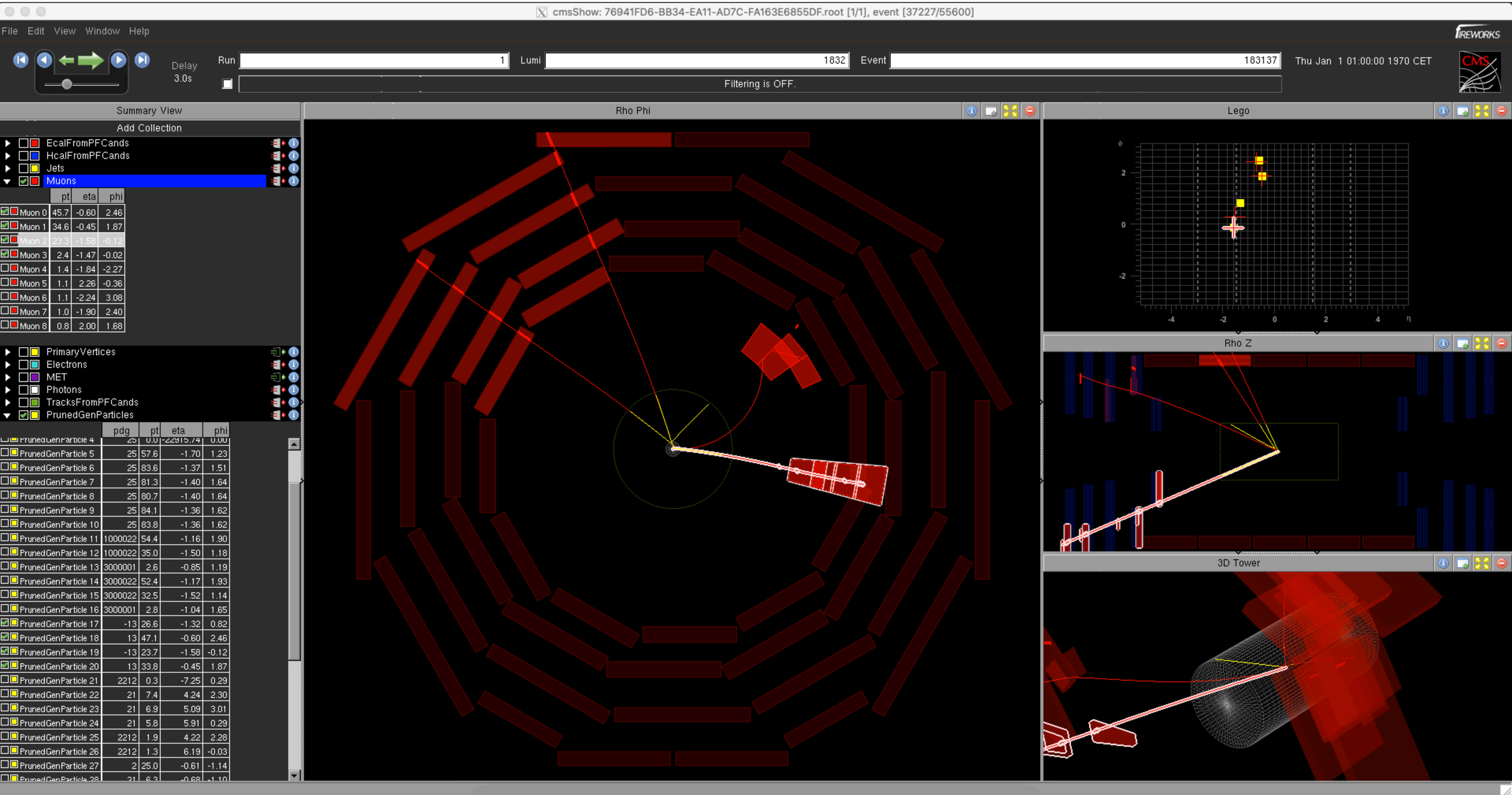



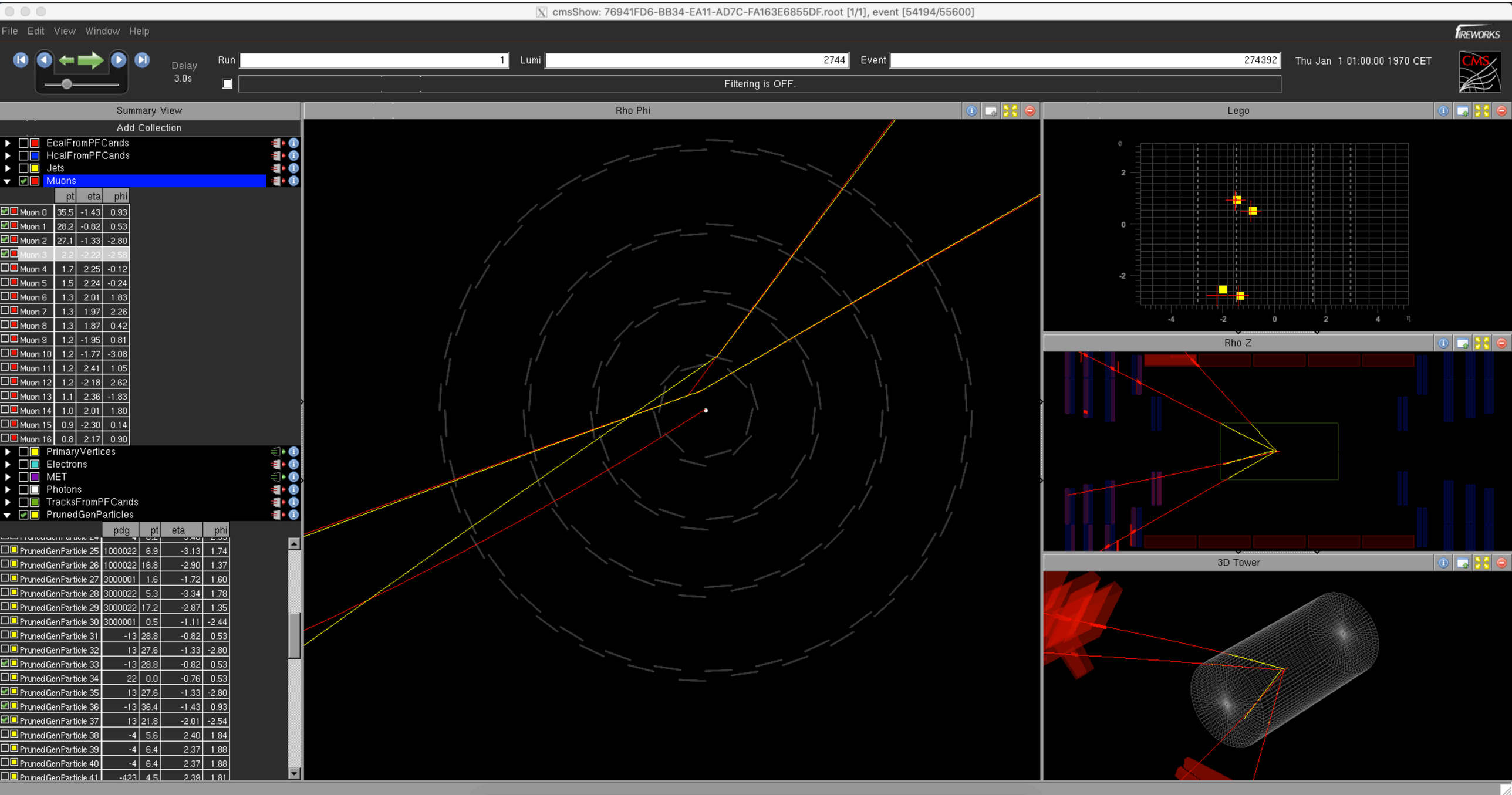
# MSSMD: m=58 GeV, cT=100 mm (2017) Event #1



# MSSMD: m=58 GeV, cT=100 mm (2017) Event #1



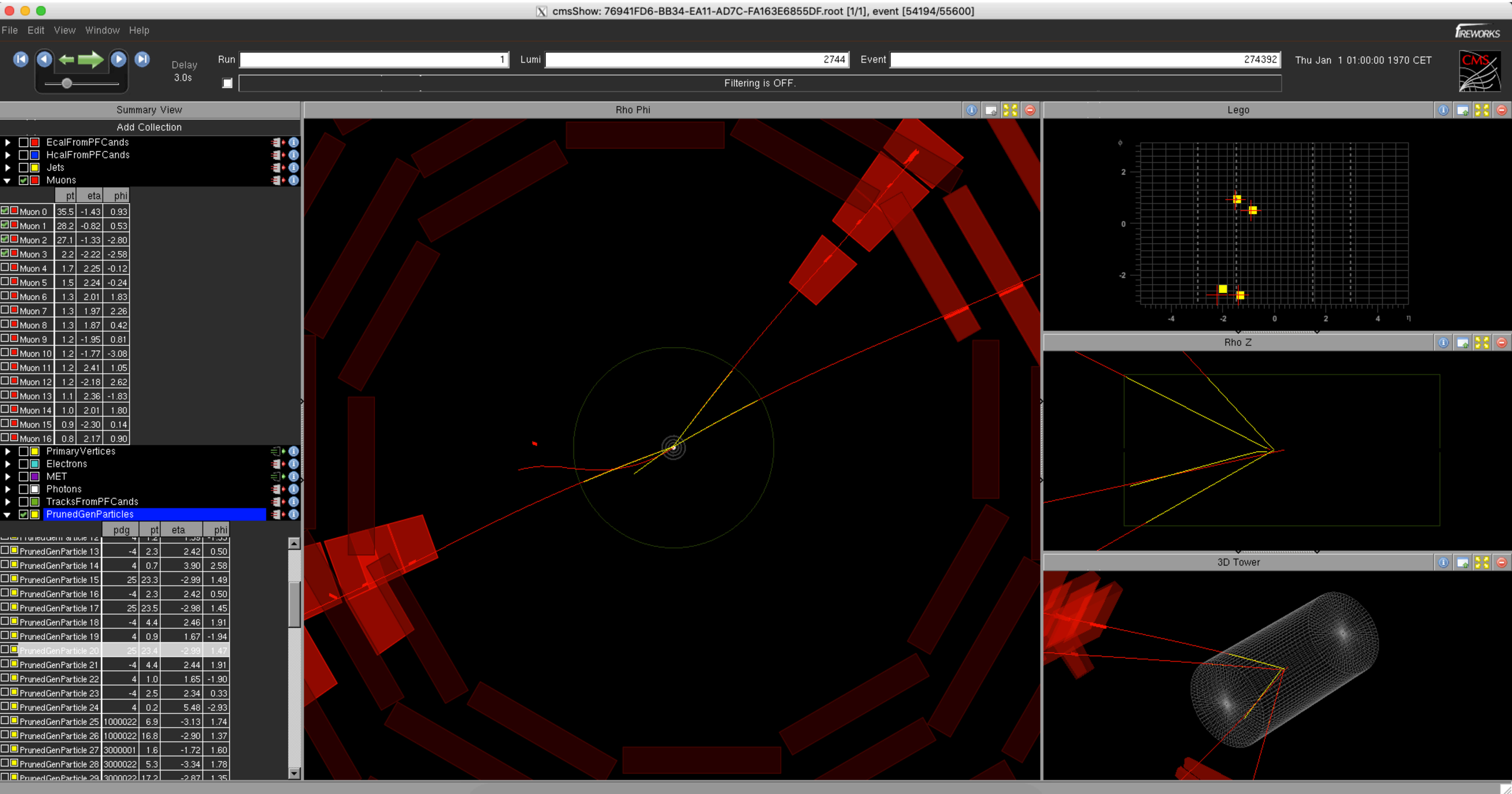
# MSSMD: m=58 GeV, cT=100 mm (2017) Event #2




| | pt | eta | phi |
|---|---|---|---|
| Muon 0 | 35.5 | -1.43 | 0.93 |
| Muon 1 | 28.2 | -0.82 | 0.53 |
| Muon 2 | 27.1 | -1.33 | -2.80 |
| Muon 3 | 2.2 | -2.22 | -2.56 |
| Muon 4 | 1.7 | 2.25 | -0.12 |
| Muon 5 | 1.5 | 2.24 | -0.24 |
| Muon 6 | 1.3 | 2.01 | 1.83 |
| Muon 7 | 1.3 | 1.97 | 2.26 |
| Muon 8 | 1.3 | 1.87 | 0.42 |
| Muon 9 | 1.2 | -1.95 | 0.81 |
| Muon 10 | 1.2 | -1.77 | -3.08 |
| Muon 11 | 1.2 | 2.41 | 1.05 |
| Muon 12 | 1.2 | -2.18 | 2.62 |
| Muon 13 | 1.1 | 2.36 | -1.83 |
| Muon 14 | 1.0 | 2.01 | 1.80 |
| Muon 15 | 0.9 | -2.30 | 0.14 |
| Muon 16 | 0.8 | 2.17 | 0.90 |

| | pdg | pt | eta | phi |
|---|---|---|---|---|
| PrunedGenParticle 25 | 1000022 | 6.9 | -3.13 | 1.74 |
| PrunedGenParticle 26 | 1000022 | 16.8 | -2.90 | 1.37 |
| PrunedGenParticle 27 | 3000001 | 1.6 | -1.72 | 1.60 |
| PrunedGenParticle 28 | 3000022 | 5.3 | -3.34 | 1.78 |
| PrunedGenParticle 29 | 3000022 | 17.2 | -2.87 | 1.35 |
| PrunedGenParticle 30 | 3000001 | 0.5 | -1.11 | -2.44 |
| PrunedGenParticle 31 | -13 | 28.8 | -0.82 | 0.53 |
| PrunedGenParticle 32 | 13 | 27.6 | -1.33 | -2.80 |
| PrunedGenParticle 33 | -13 | 28.8 | -0.82 | 0.53 |
| PrunedGenParticle 34 | 22 | 0.0 | -0.76 | 0.53 |
| PrunedGenParticle 35 | 13 | 27.6 | -1.33 | -2.80 |
| PrunedGenParticle 36 | -13 | 36.4 | -1.43 | 0.93 |
| PrunedGenParticle 37 | 13 | 21.8 | -2.01 | -2.54 |
| PrunedGenParticle 38 | -4 | 5.6 | 2.40 | 1.84 |
| PrunedGenParticle 39 | -4 | 6.4 | 2.37 | 1.88 |
| PrunedGenParticle 40 | -4 | 6.4 | 2.37 | 1.88 |
| PrunedGenParticle 41 | -423 | 4.5 | 2.39 | 1.81 |

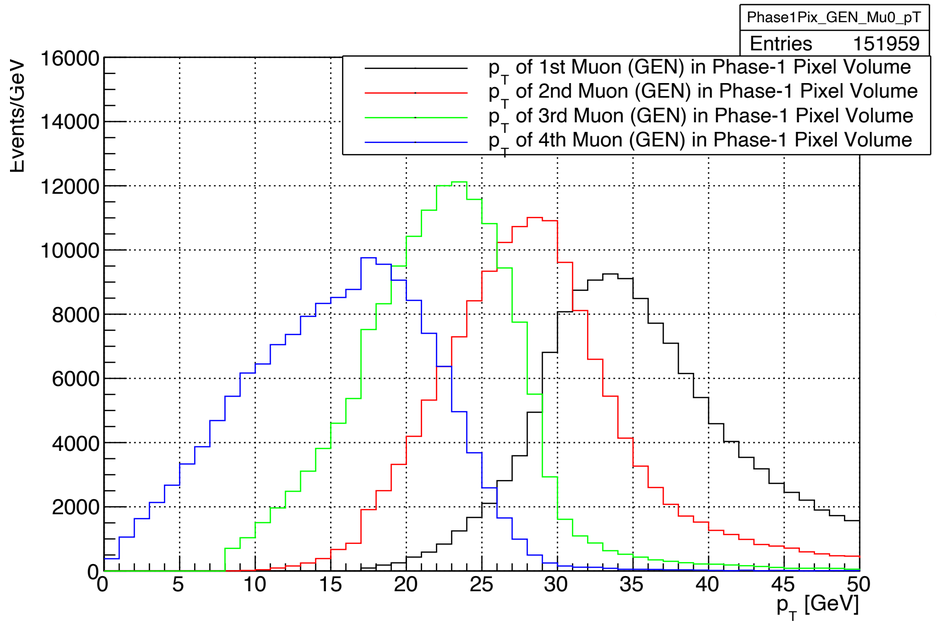
# MSSMD: m=58 GeV, cT=100 mm (2017) Event #2



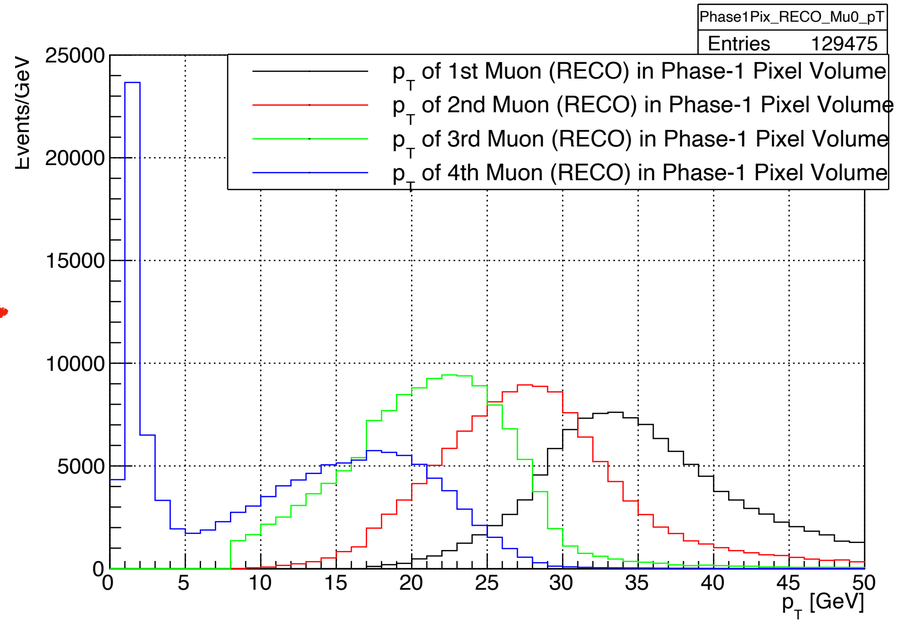
# Back Up

# MSSMD: m=58 GeV, cT=100 mm

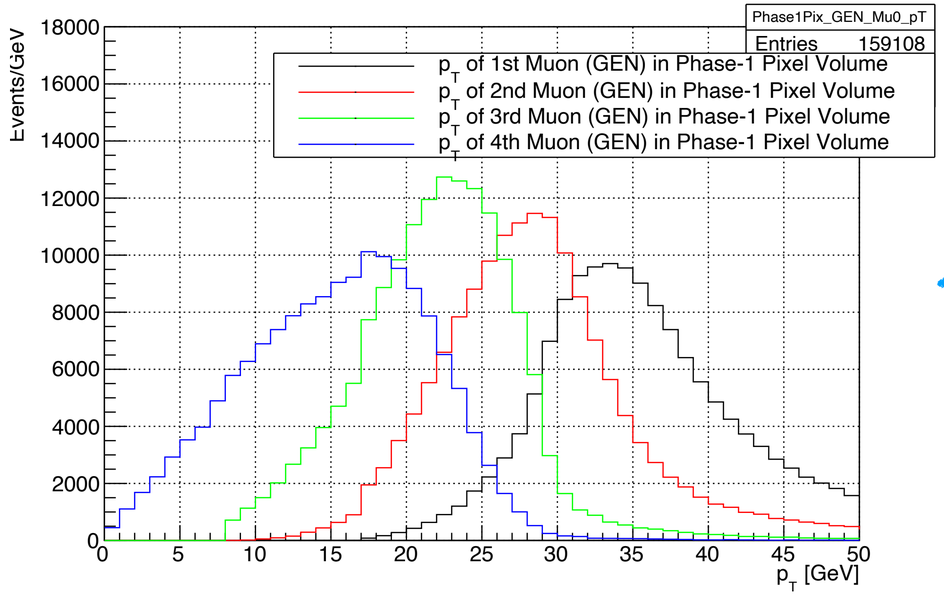
If GEN signal in pixel volume and satisfy cut #1-3



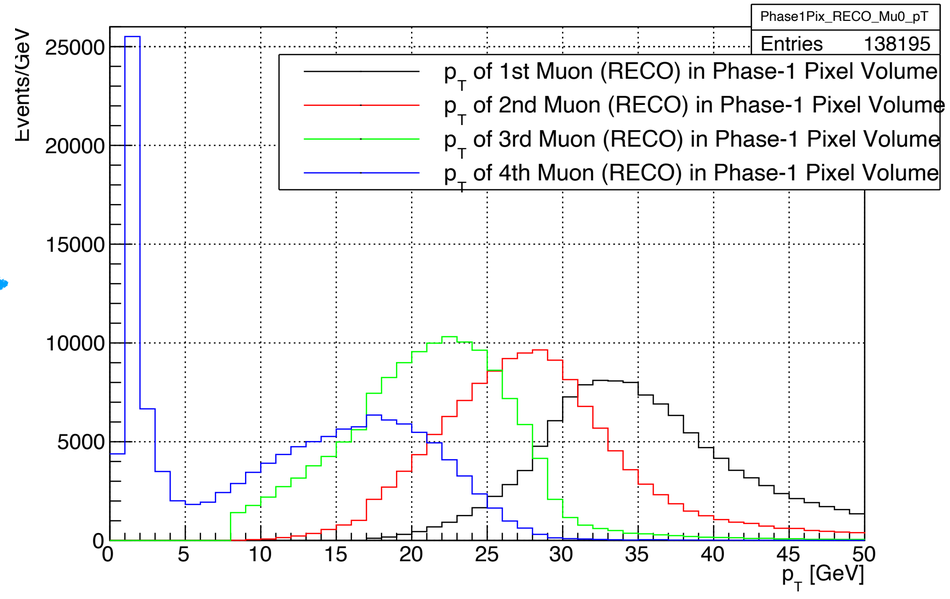

2017




If GEN signal in pixel volume and satisfy cut #6-8

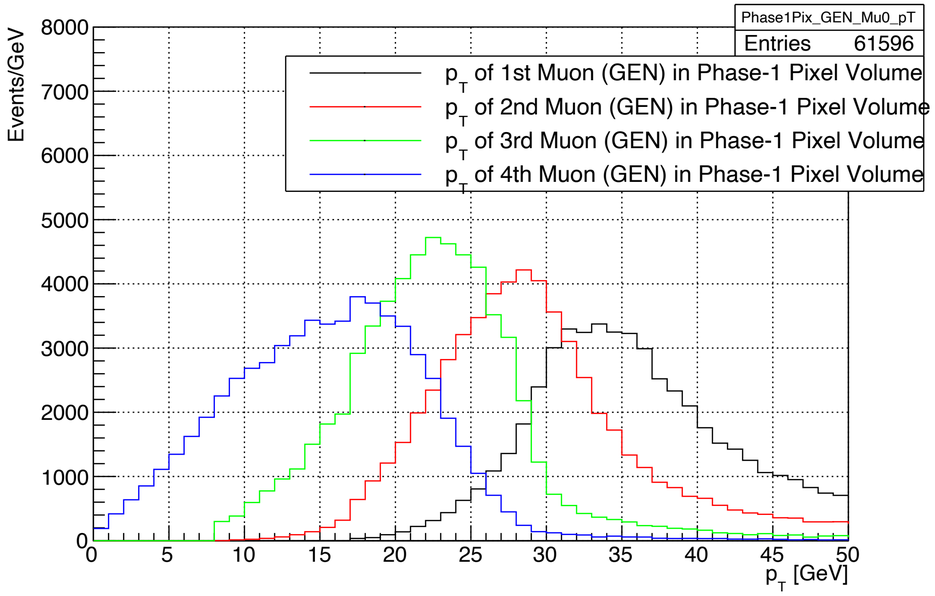



2018

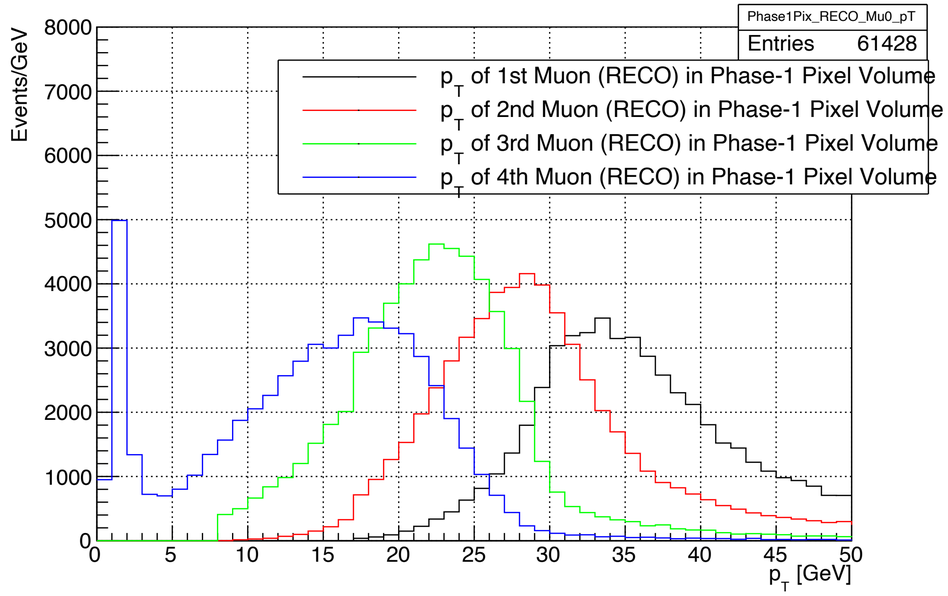


# MSSMD: m=58 GeV, cT=1 mm

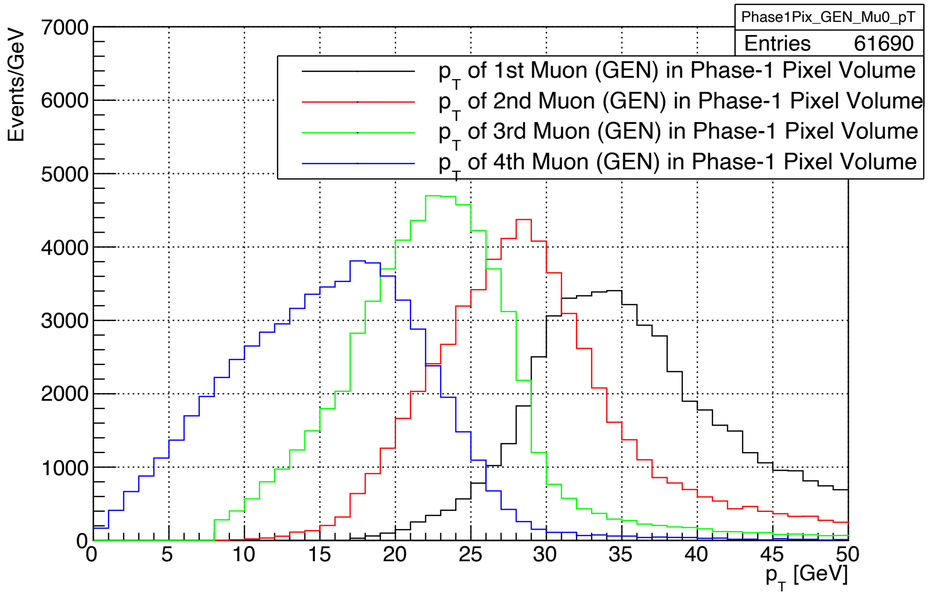
If GEN signal in pixel volume and satisfy cut #1-3



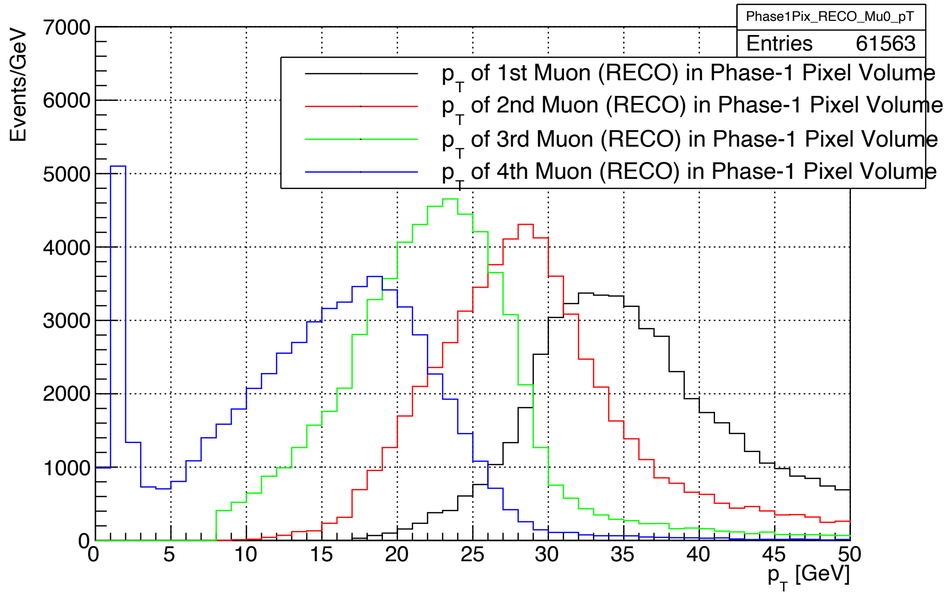

2017




If GEN signal in pixel volume and satisfy cut #6-8

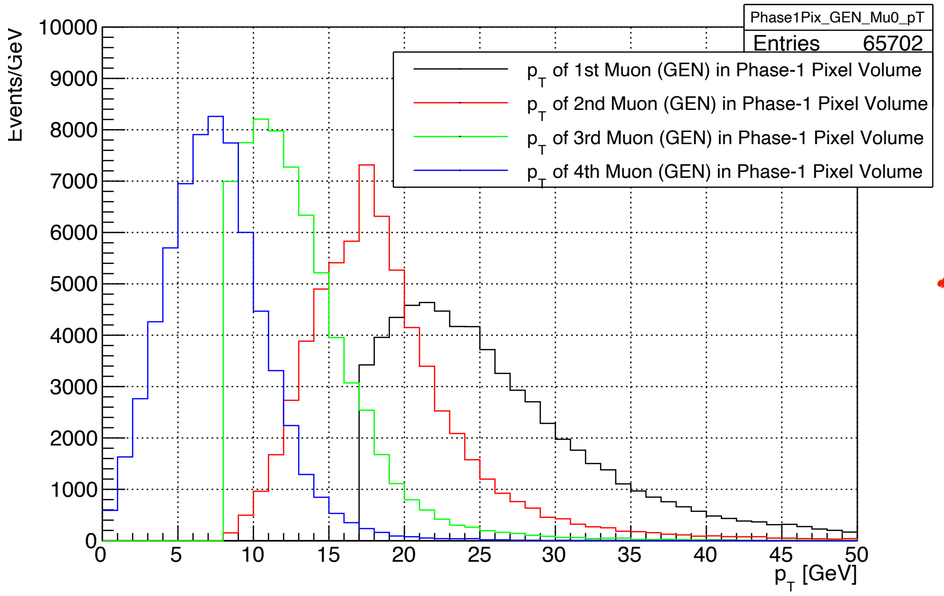



2018

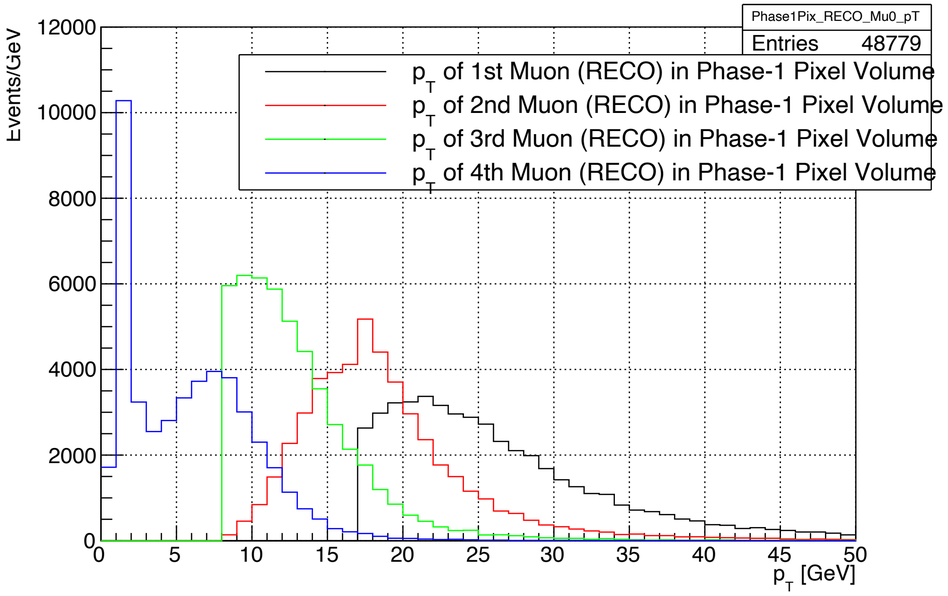


# MSSMD: m=25 GeV, cT=100 mm

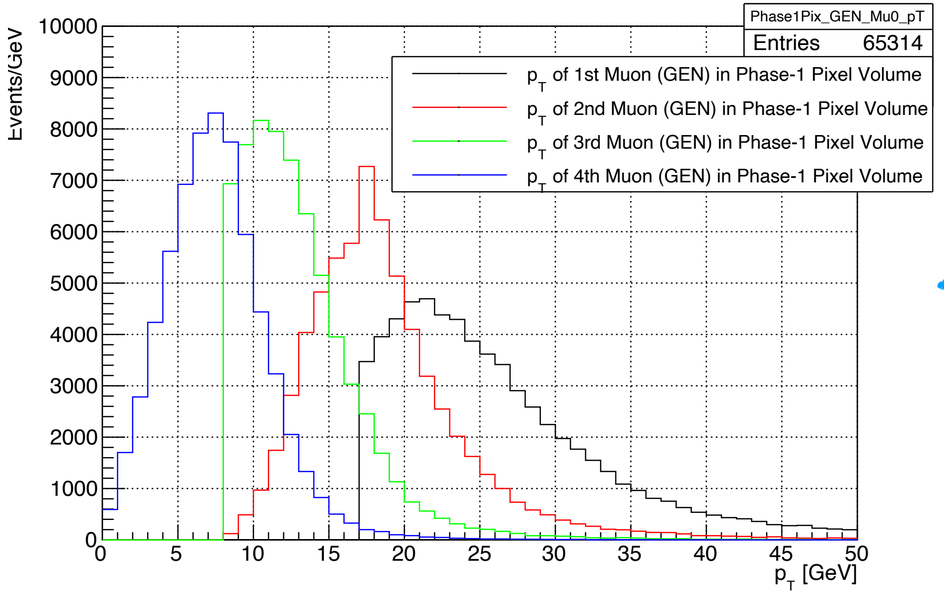
If GEN signal in pixel volume and satisfy cut #1-3



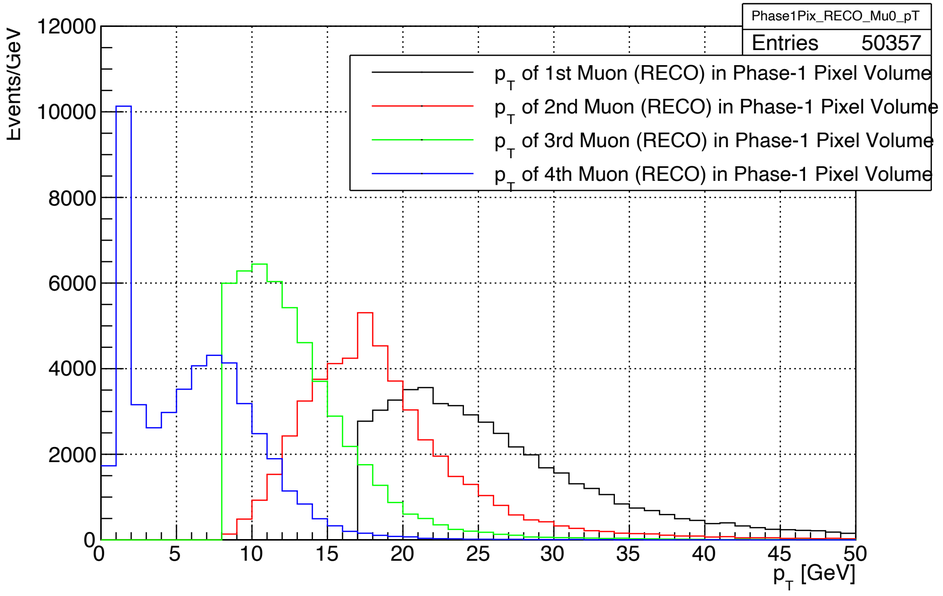

2017




If GEN signal in pixel volume and satisfy cut #6-8

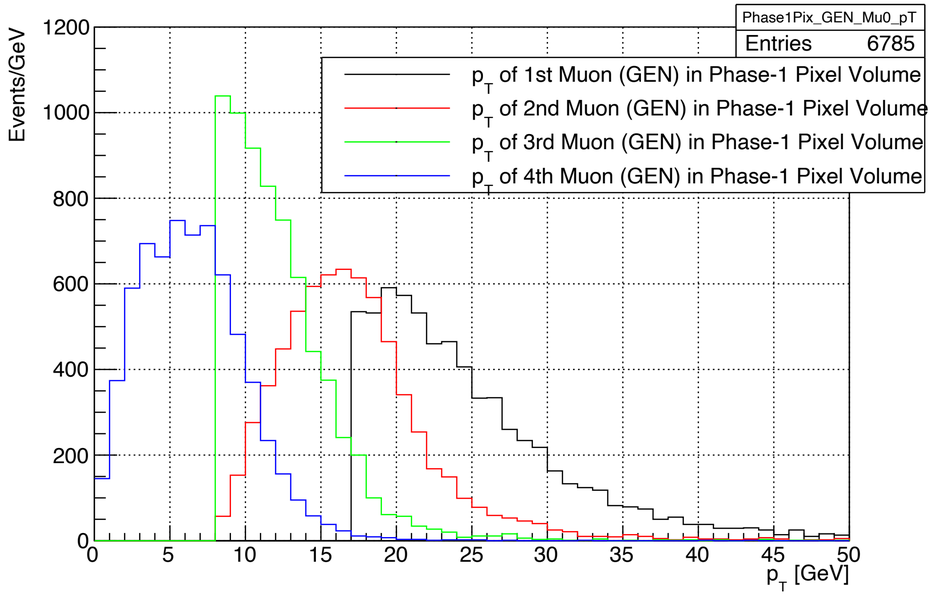



2018

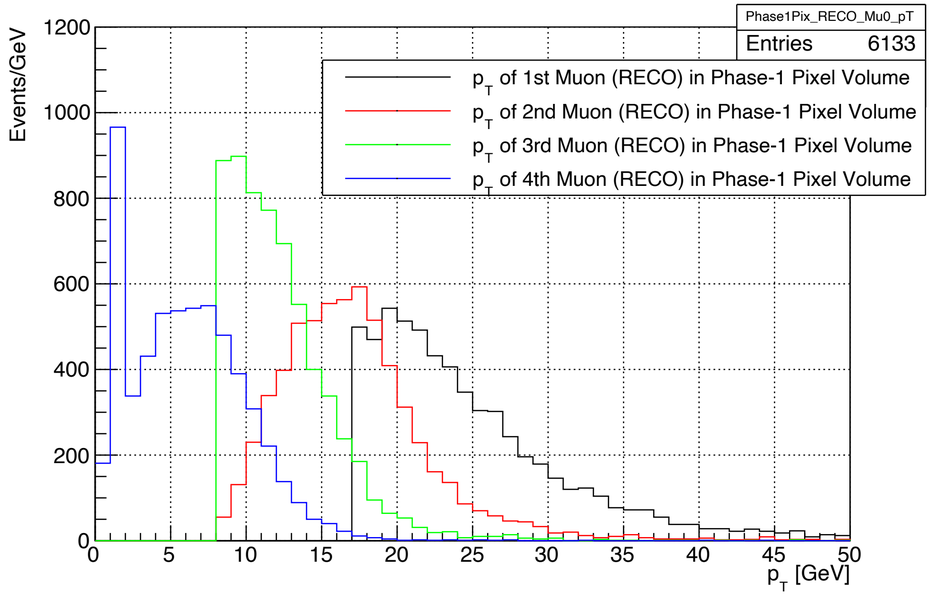


# MSSMD: m=1 GeV, cT=100 mm

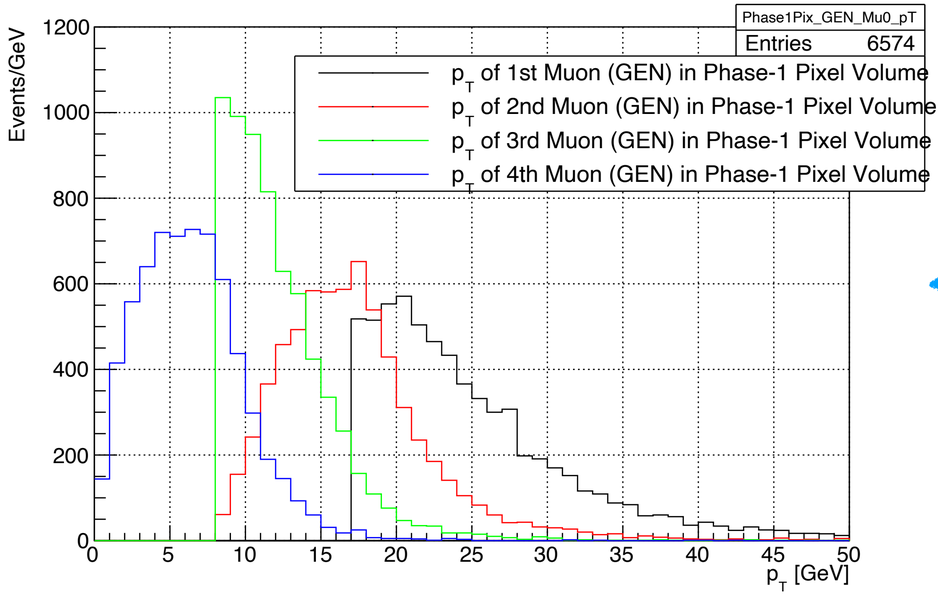
If GEN signal in pixel volume and satisfy cut #1-3




2017




If GEN signal in pixel volume and satisfy cut #6-8




2018