

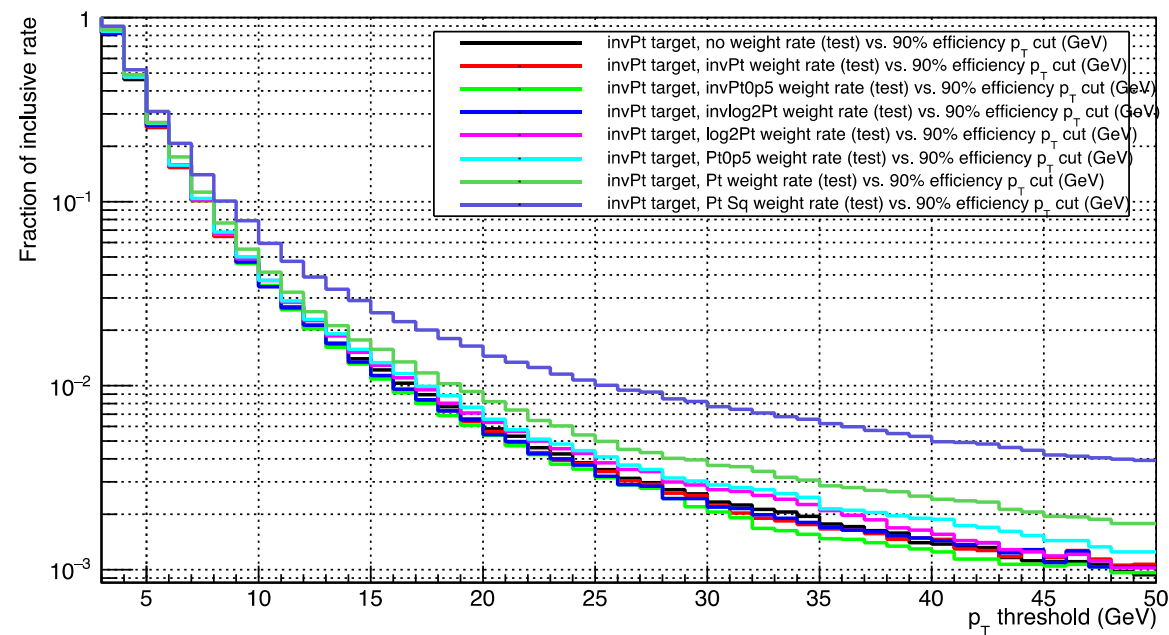
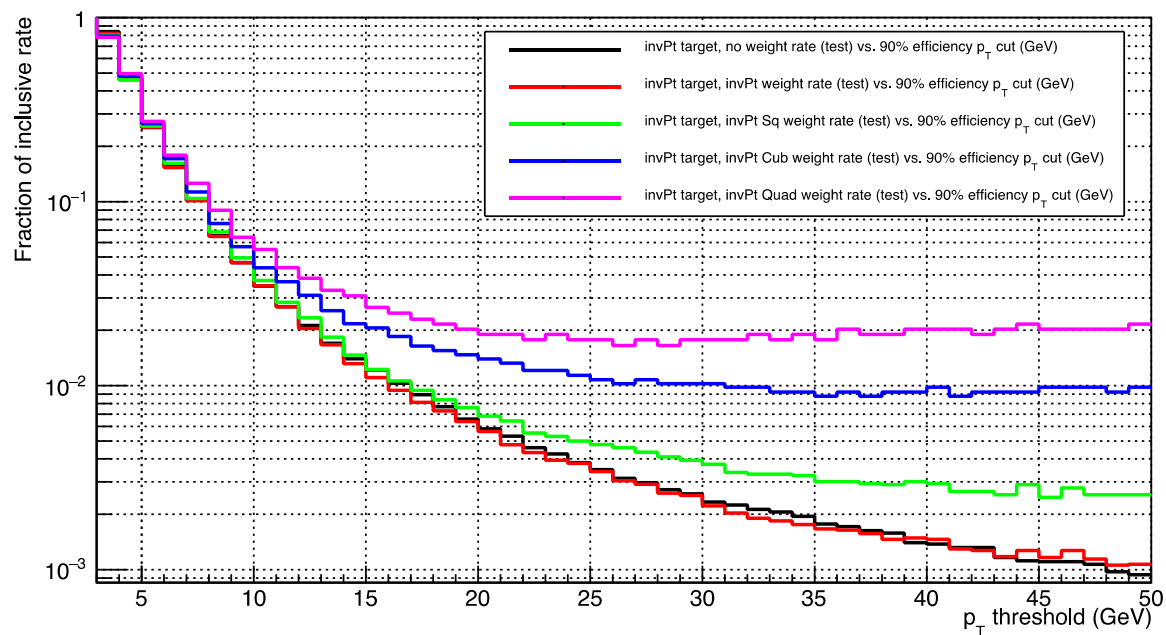


Target & Weight in p_T Training

Wei Shi

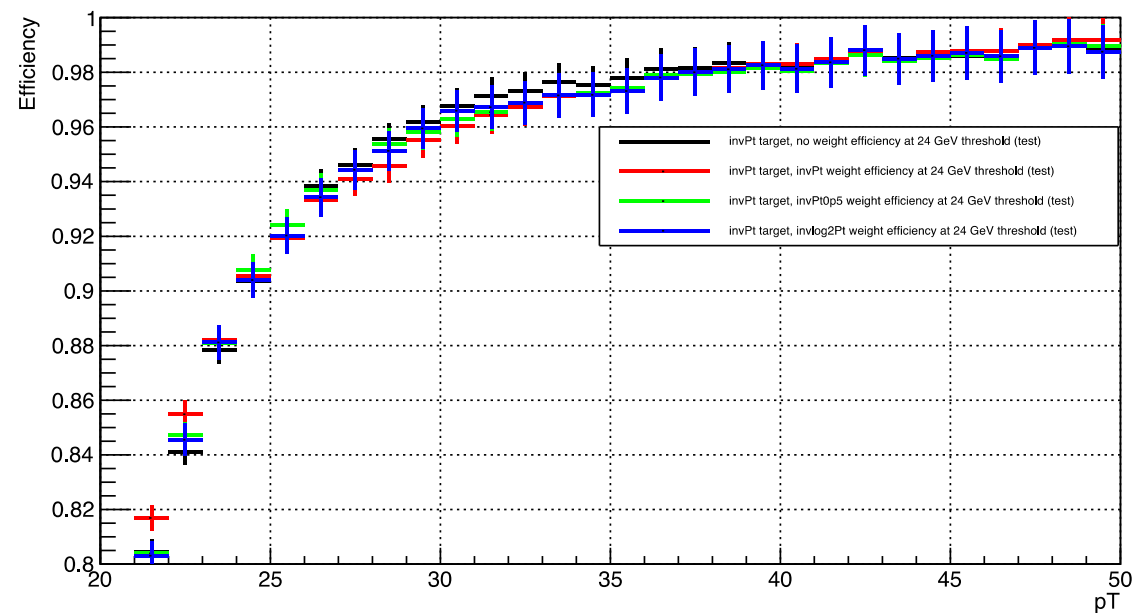
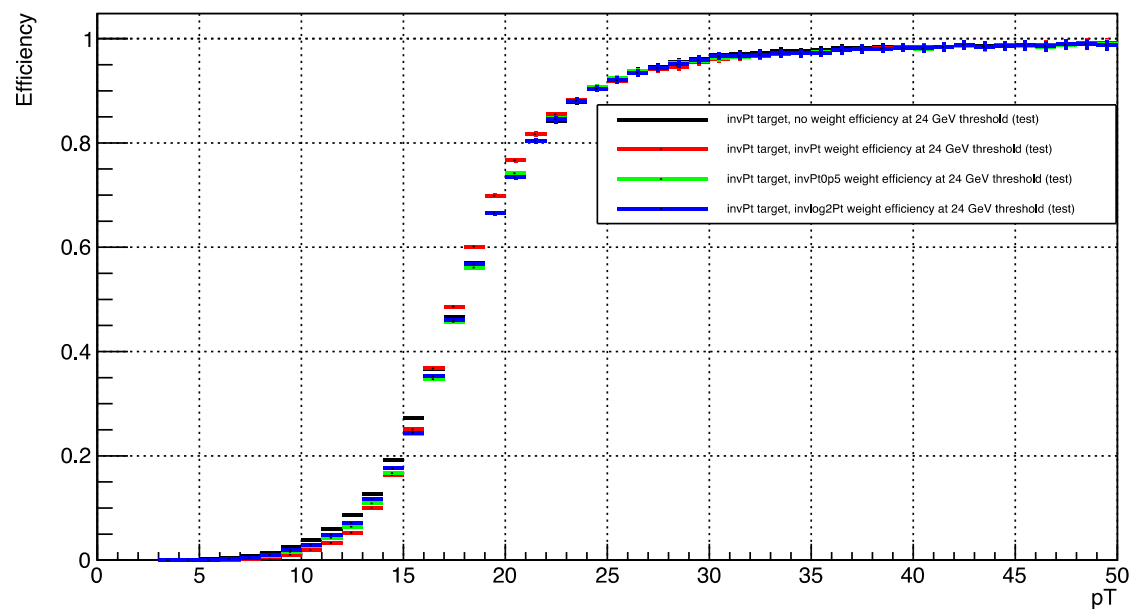
EMTF Working Meeting

$1/p_T$ Target

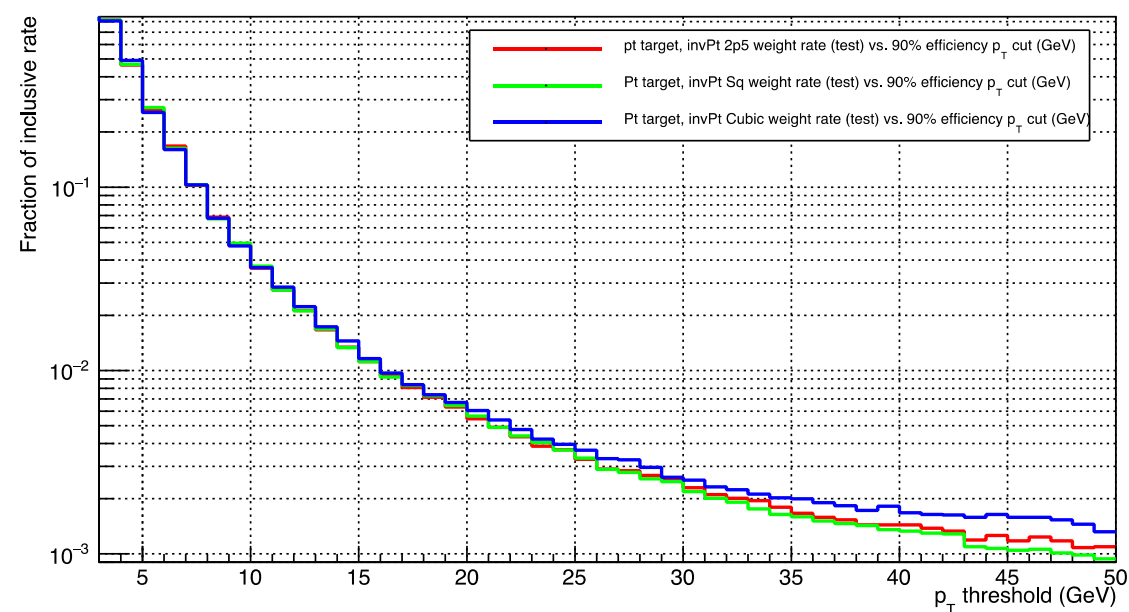
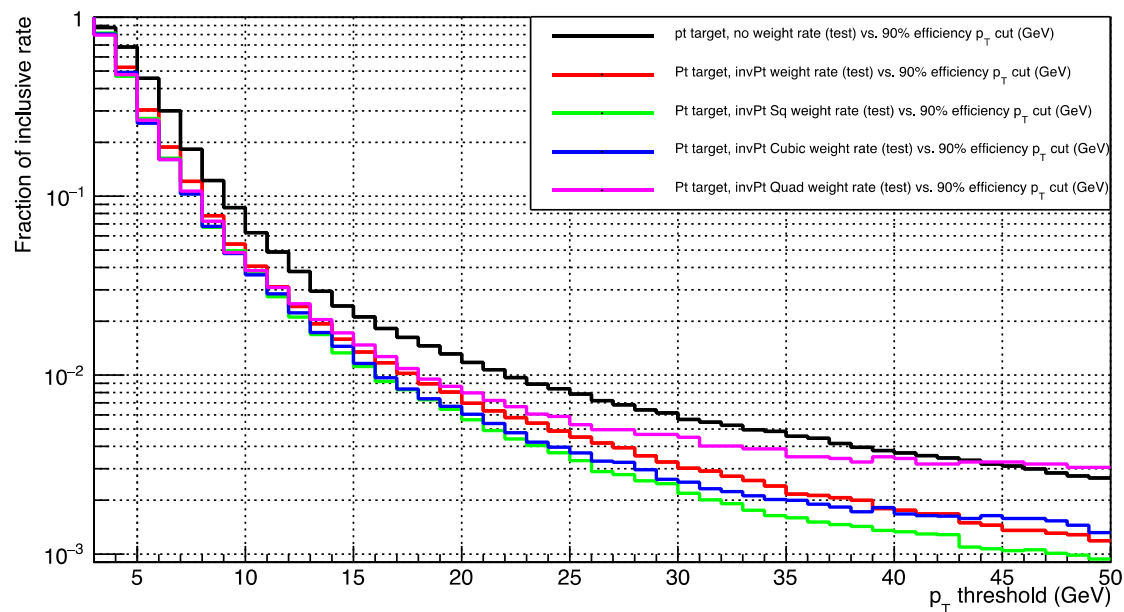
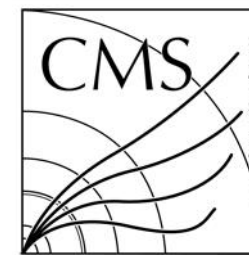


- $1/p_T$ target with $1/\sqrt{p_T}$ weight best rate reduction

$1/p_T$ Target

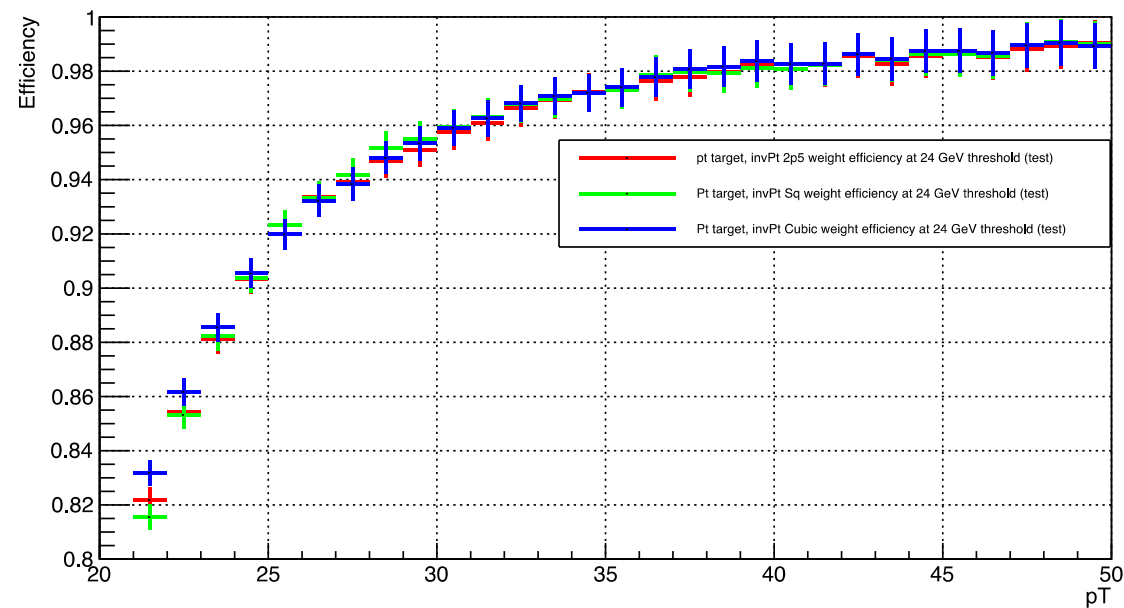
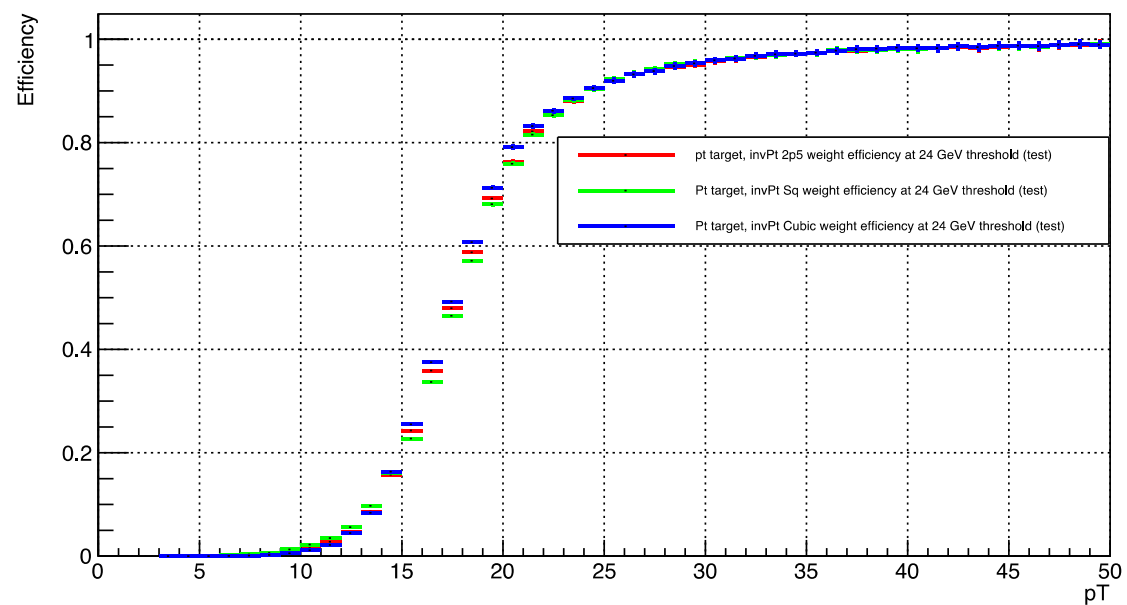
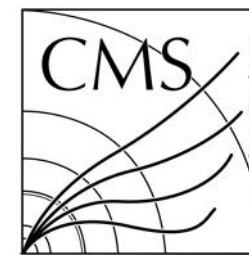


p_T Target

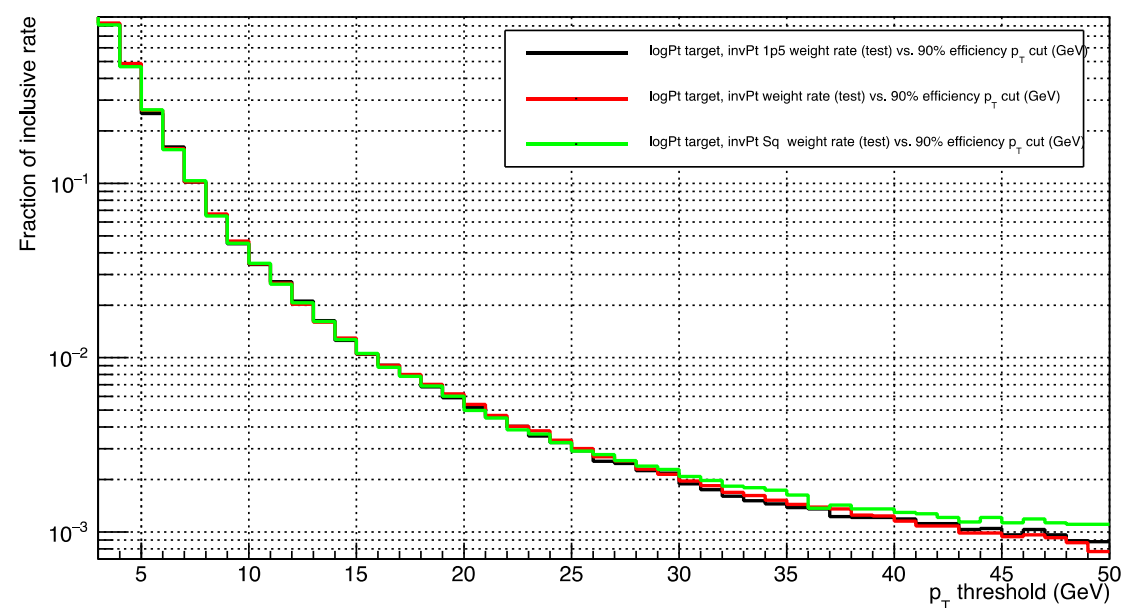
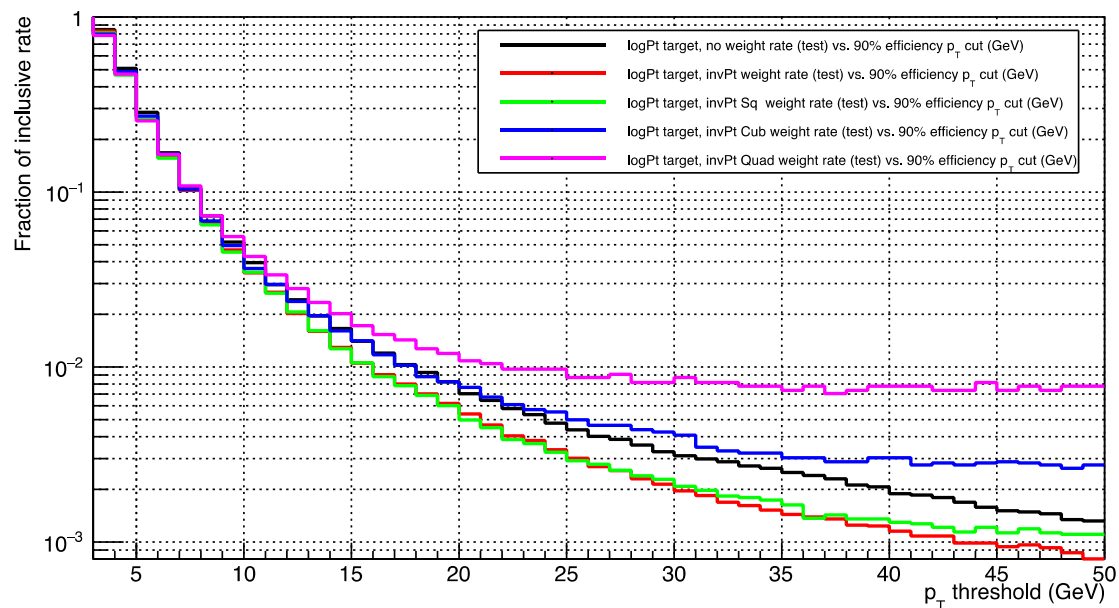


- p_T target with $1/p_T^2$ weight best rate reduction

p_T Target

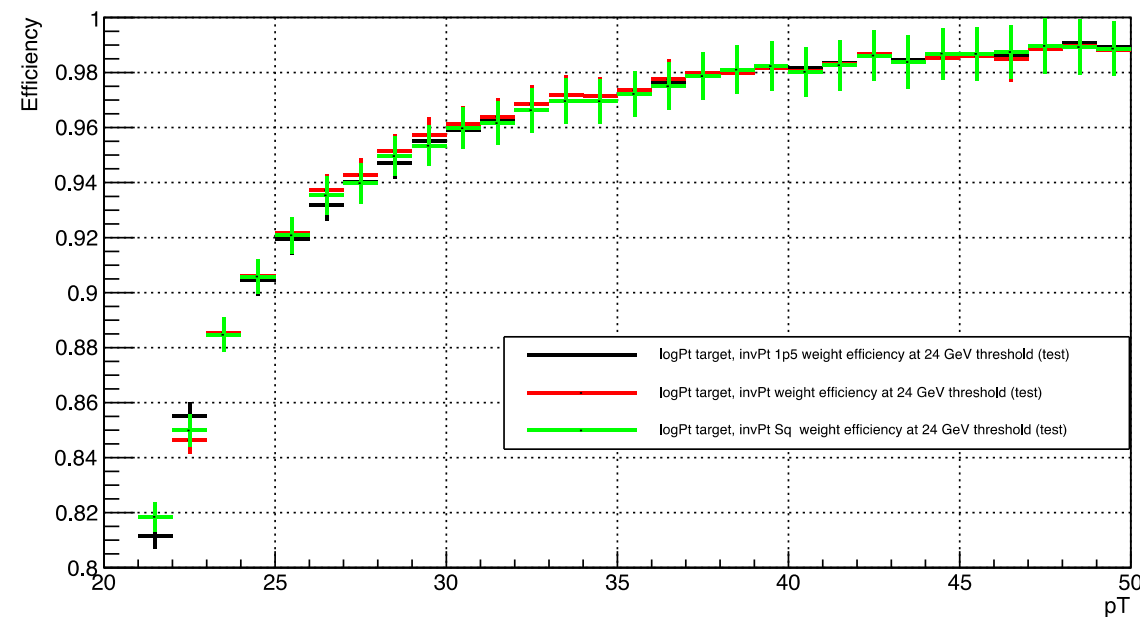
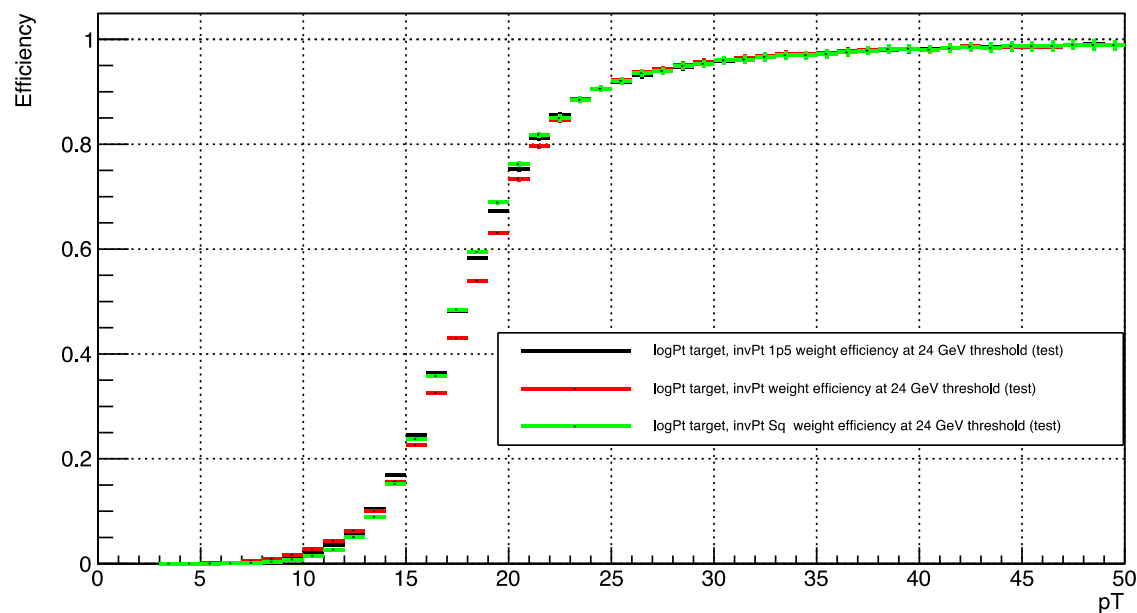


$\log_2(p_T)$ Target



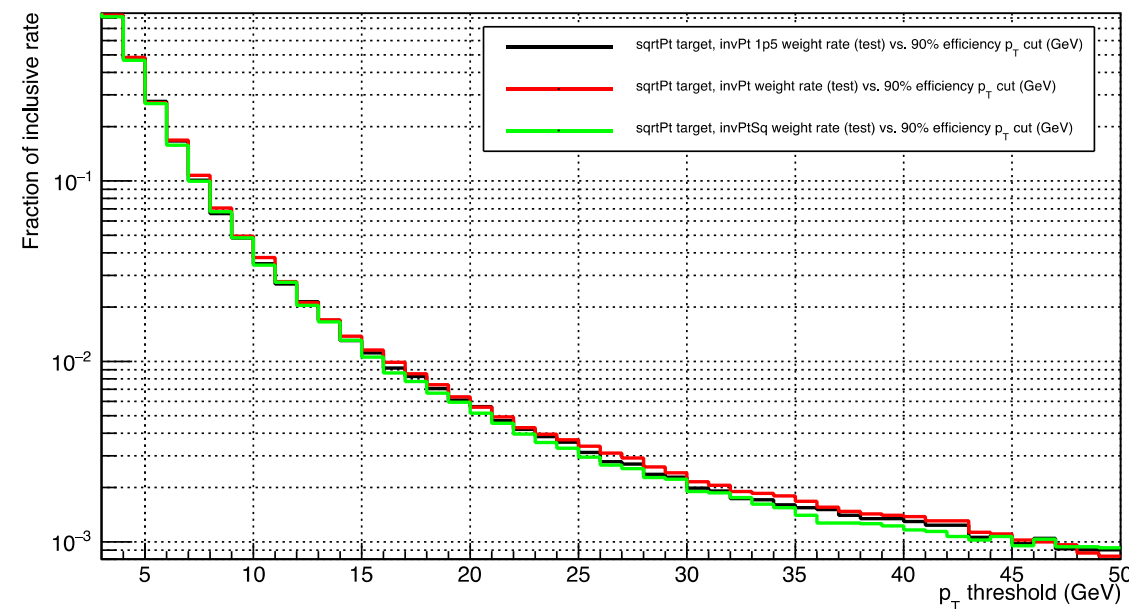
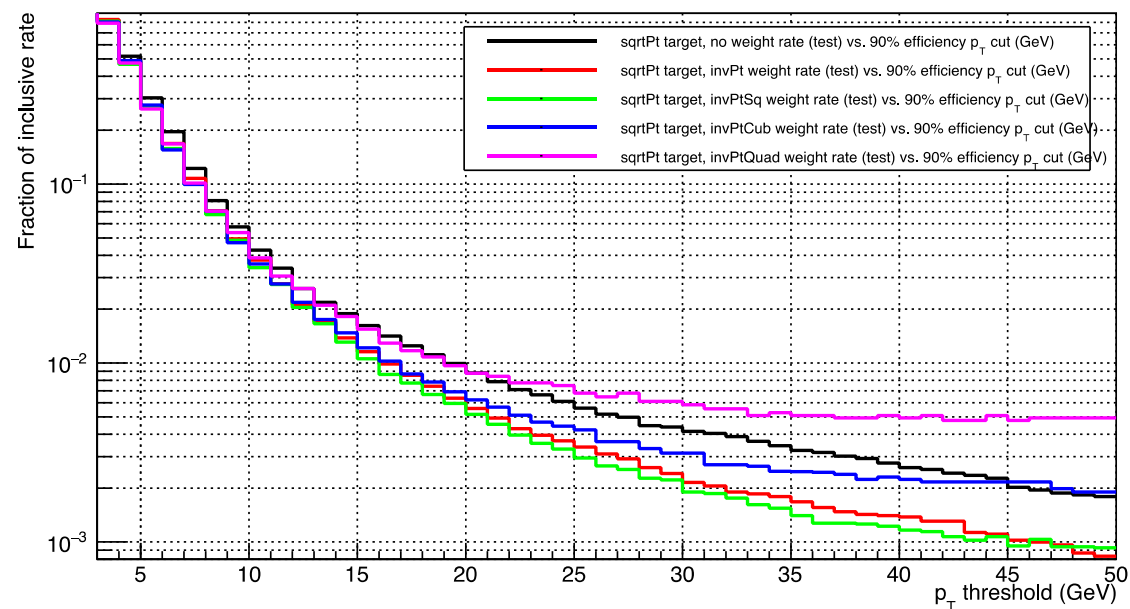
- $\log_2(p_T)$ target with $1/p_T$ & $1/p_T^{1.5}$ weight close rate reduction performance

$\log_2(p_T)$ Target



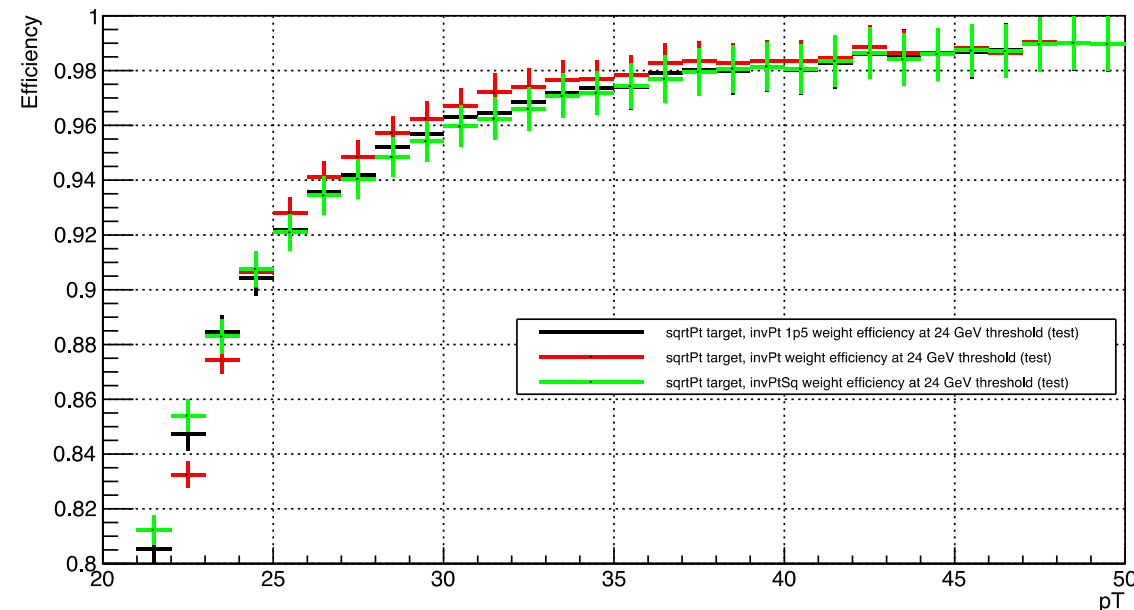
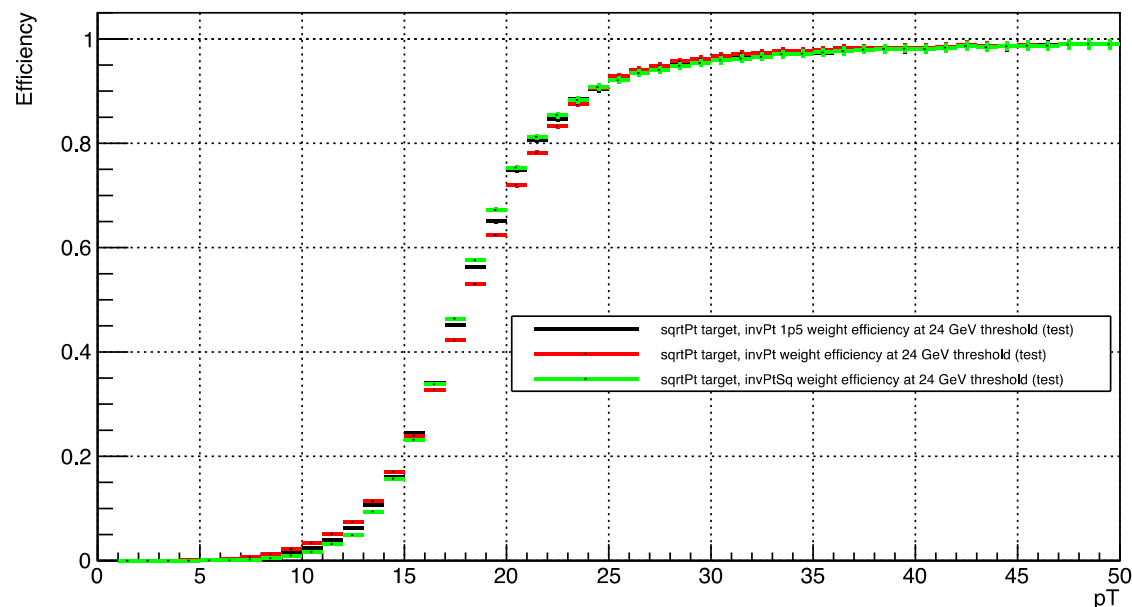
- $\log_2(p_T)$ target with $1/p_T$ weight has better trigger efficiency

$\sqrt{p_T}$ Target



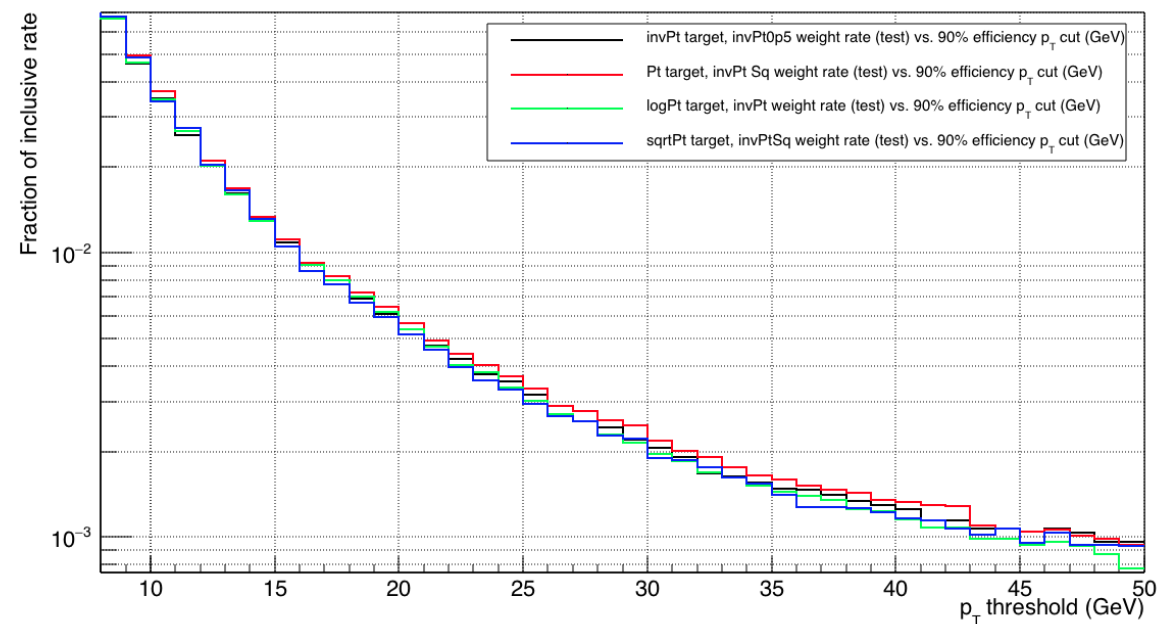
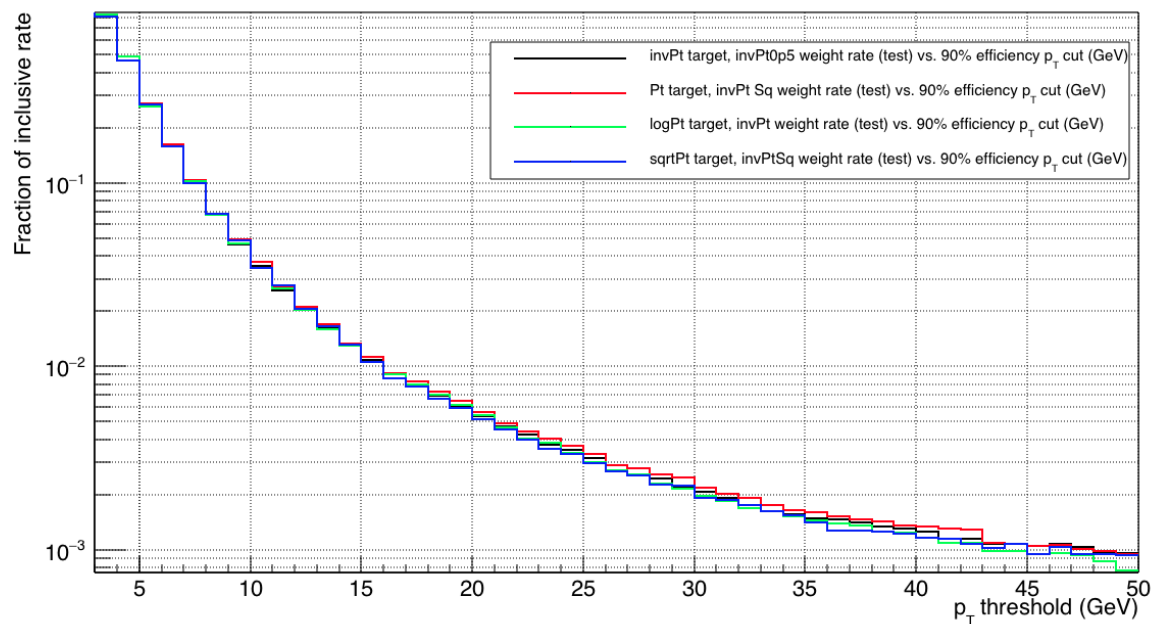
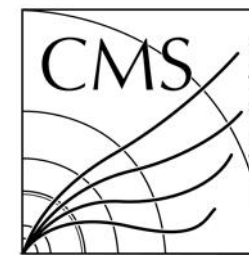
- $\sqrt{p_T}$ target with $1/p_T^2$ weight best rate reduction

$\sqrt{p_T}$ Target



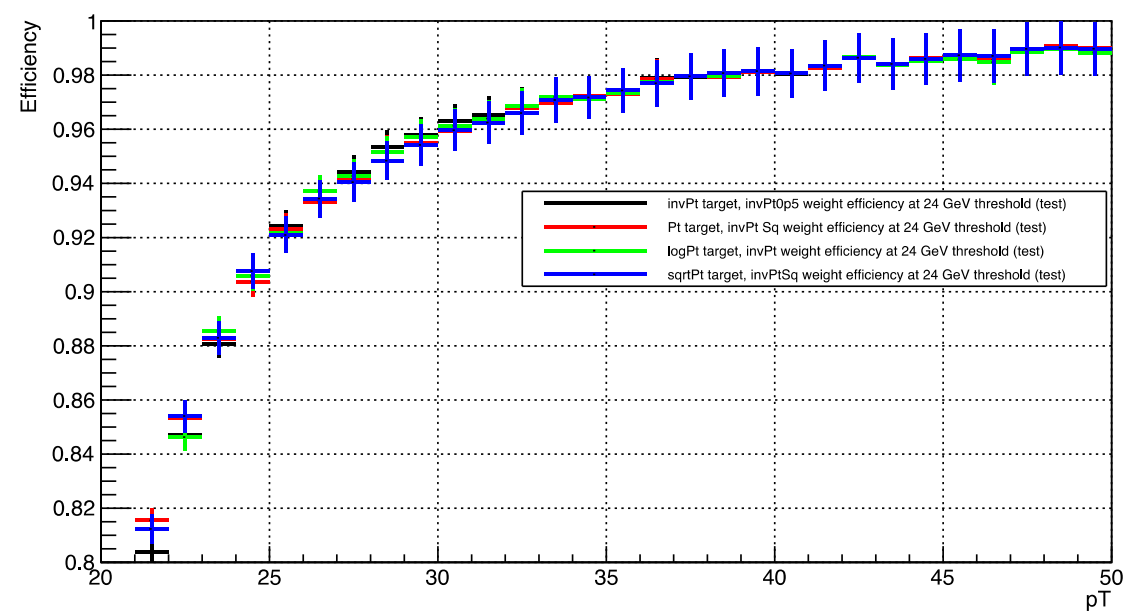
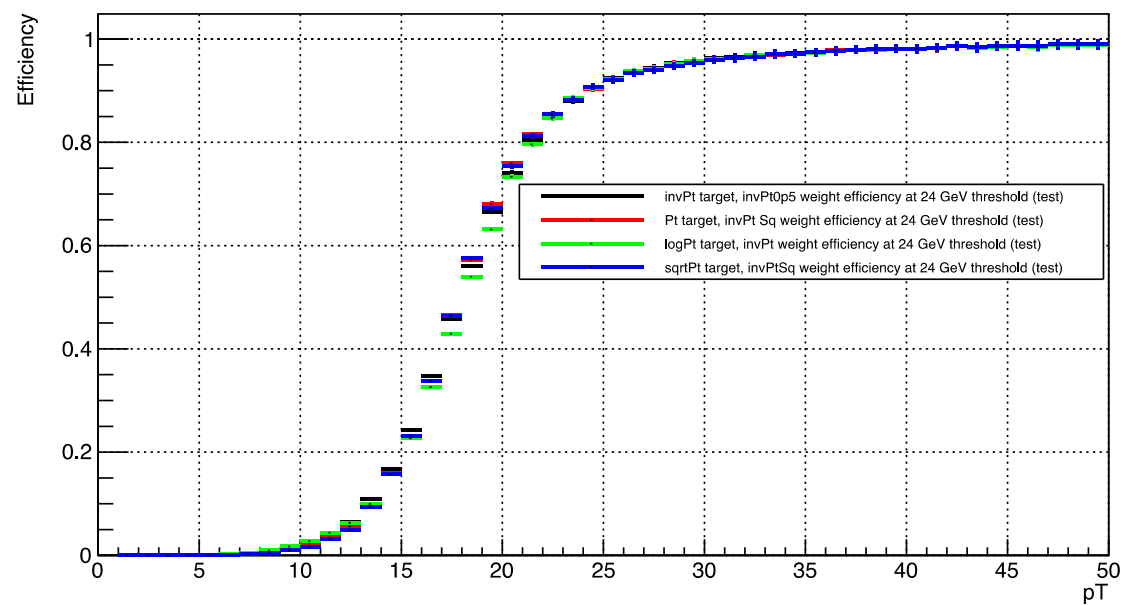
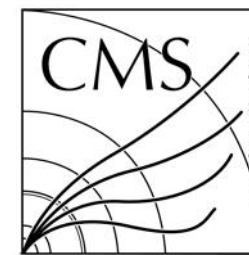
- $\sqrt{p_T}$ target with $1/p_T$ weight better trigger efficiency

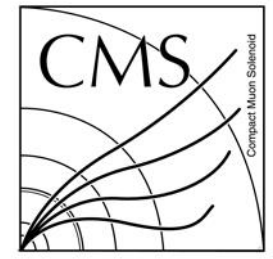
Mix



- $\sqrt{p_T}$ target with $1/p_T$ weight wins in the rate reduction

Mix





Summary

- Compared rate & efficiency for several sets of target and weight
- By tuning target and weight under certain loss function, p_T assignment performance can be optimized
- Best rate reduction performance doesn't always means best trigger efficiency