

Test of global hough V15

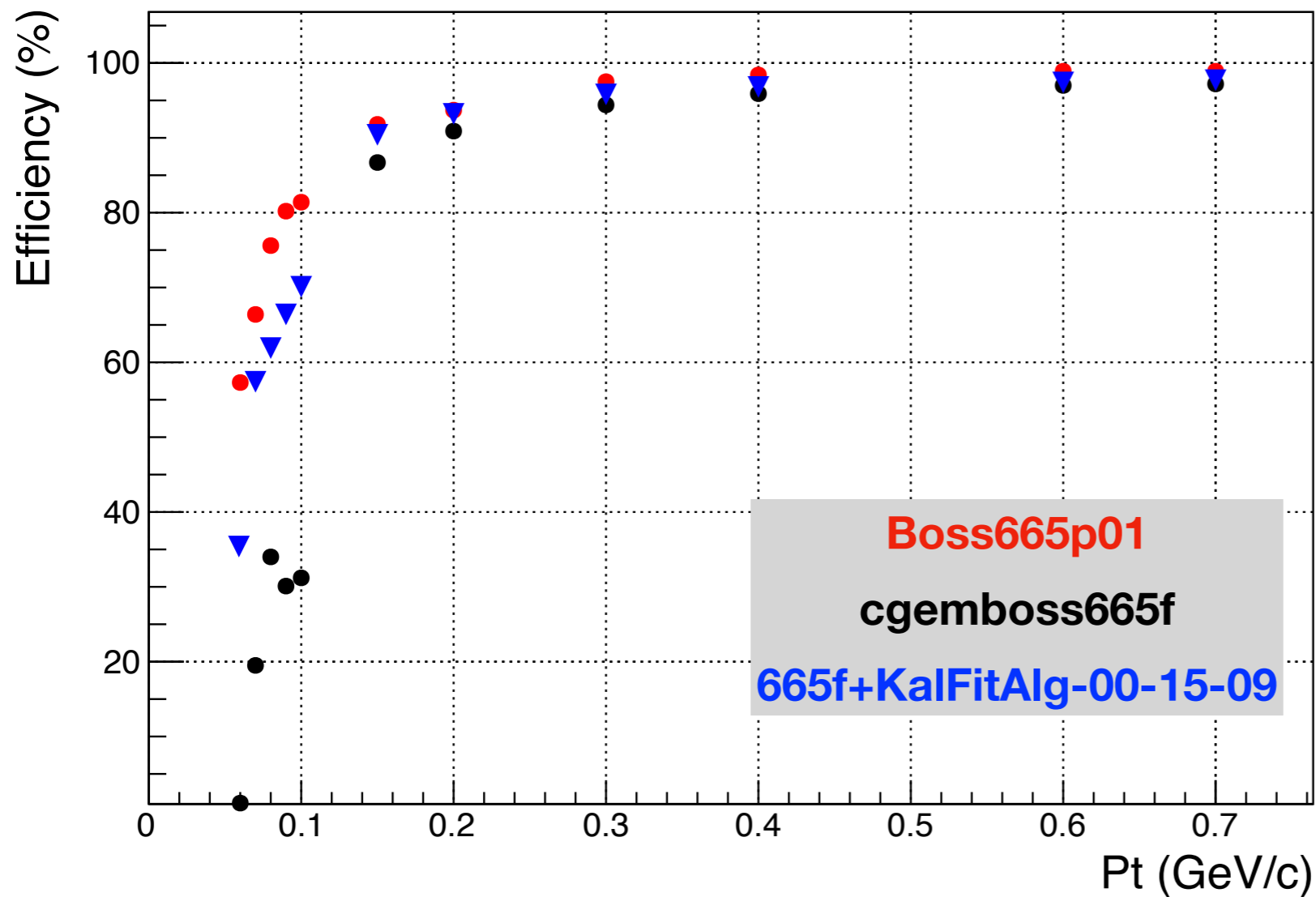
- 20000 pions
- fixpt generator
- $pt=[0.06, 0.07, 0.08, 0.09, 0.1, 0.15, 0.2, 0.3, 0.4, 0.6, 0.7]$ GeV/c
- $|\cos(\theta)| < 0.93$
- HoughTransAlg-00-00-15

- comparison w.r.t. Boss665p01
- same cuts applied:

```
if(!(*itTrk)->isMdcTrackValid()) continue;  
if(fabs(Rvz0) >= 10.0) continue;  
if(fabs(Rvxy0) >= 1.0) continue;  
if(fabs(cos(thetaTrk)) >= 0.93) continue;
```

KalFit chisq cuts and drift time checks

Efficiency comparison 3: KalFitAlg-00-15-09



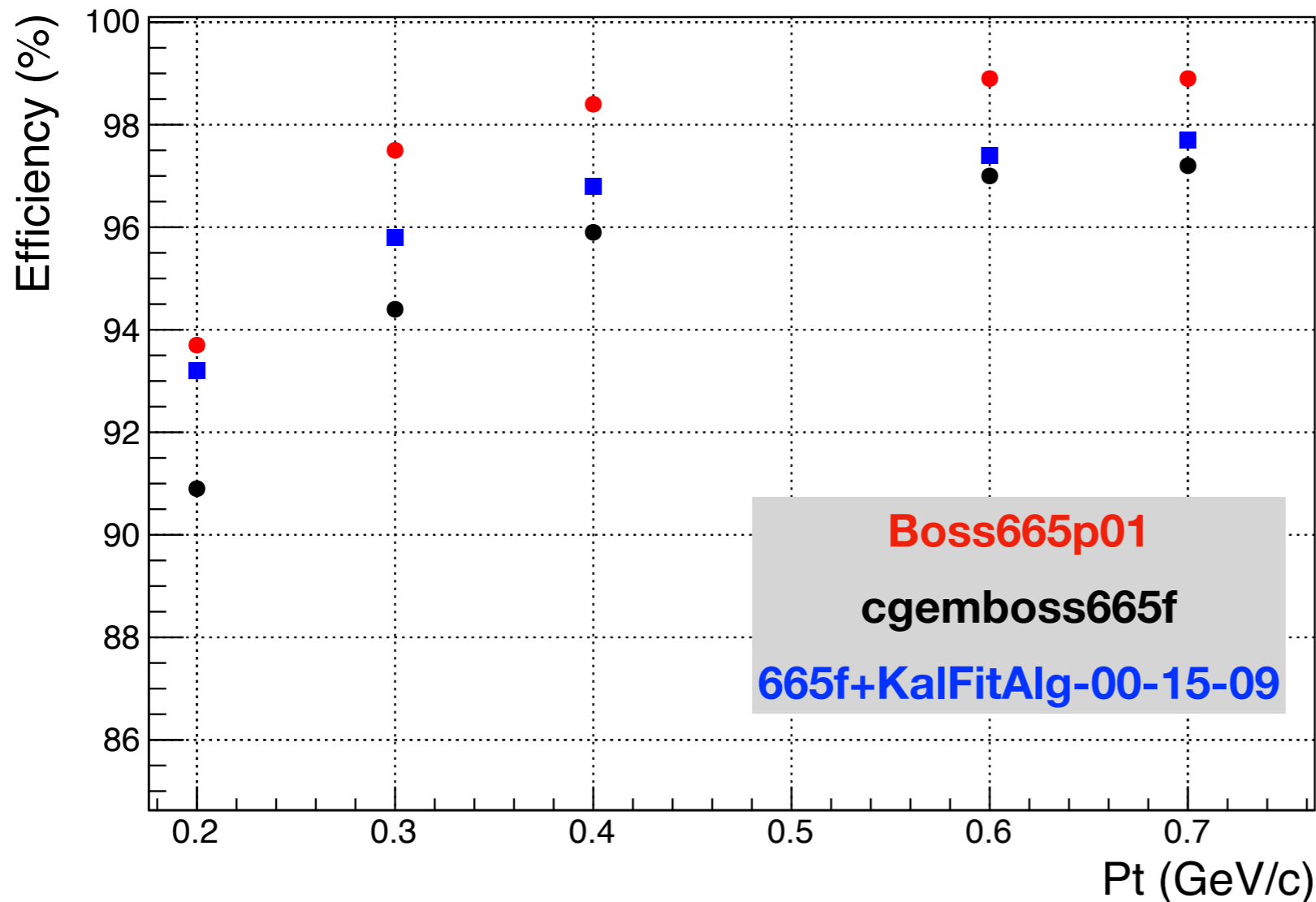
$$\text{eff} = \frac{\text{\#evt (1trk al least)}}{\text{\#evt gen}}$$

Chisq cuts:

```
KalFitAlg.dchi2cut_mid1 = 15; //layerid 4-11  
KalFitAlg.dchi2cut_mid2 = 20; //layerid 12-20  
KalFitAlg.dchi2cut_outer = 100; //layerid 20-43
```

Hough Drift time < 1500 ns

Efficiency comparison 3: KalFitAlg-00-15-09



ZOOM at higher pt

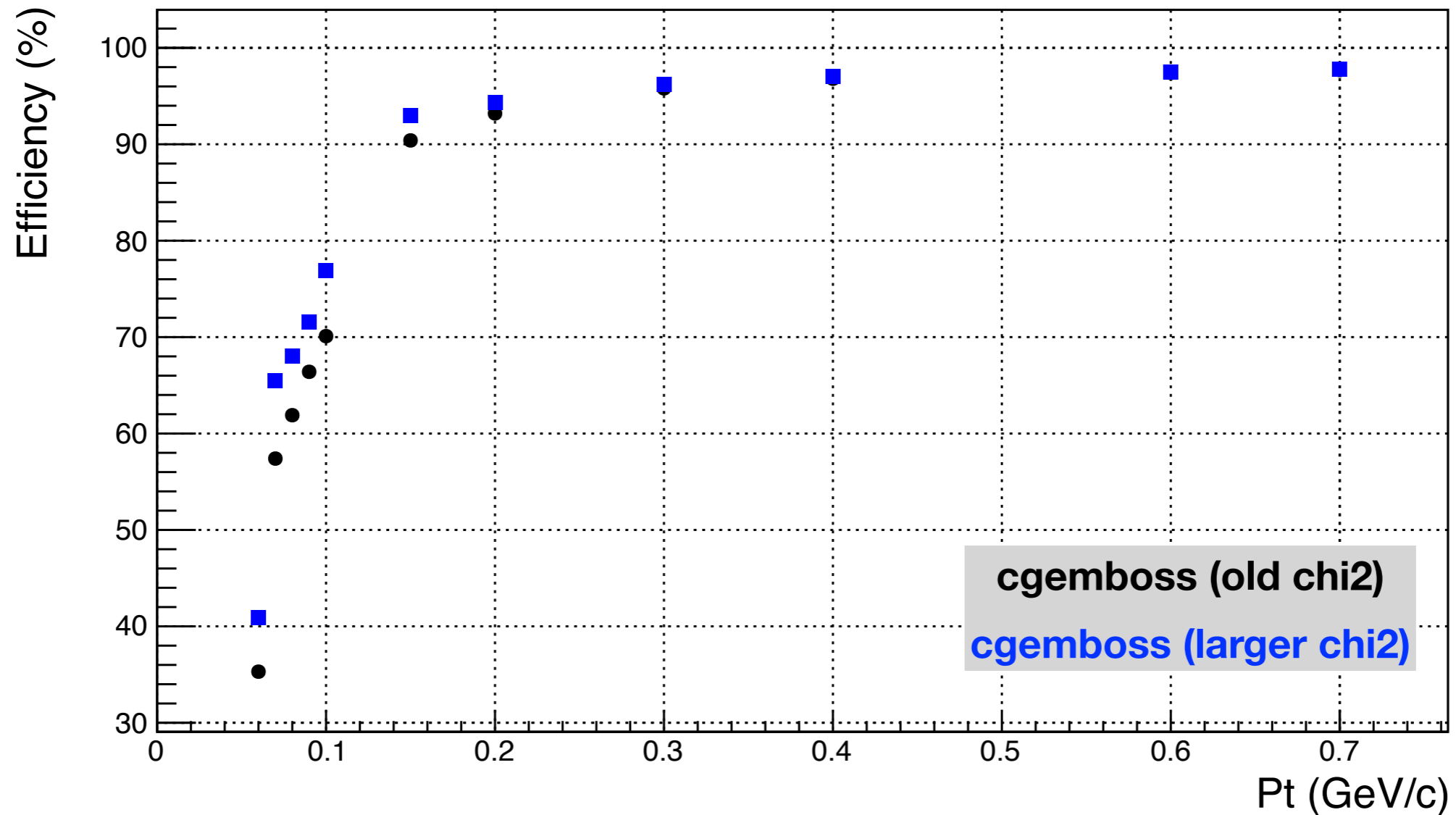
$$\text{eff} = \frac{\# \text{evt (1trk al least)}}{\# \text{evt gen}}$$

Chisq cuts:

```
KalFitAlg.dchi2cut_mid1 = 15; //layerid 4-11  
KalFitAlg.dchi2cut_mid2 = 20; //layerid 12-20  
KalFitAlg.dchi2cut_outer = 100; //layerid 20-43
```

Hough Drift time < 1500 ns

KalFitAlg-00-15-09 - larger chisq cuts

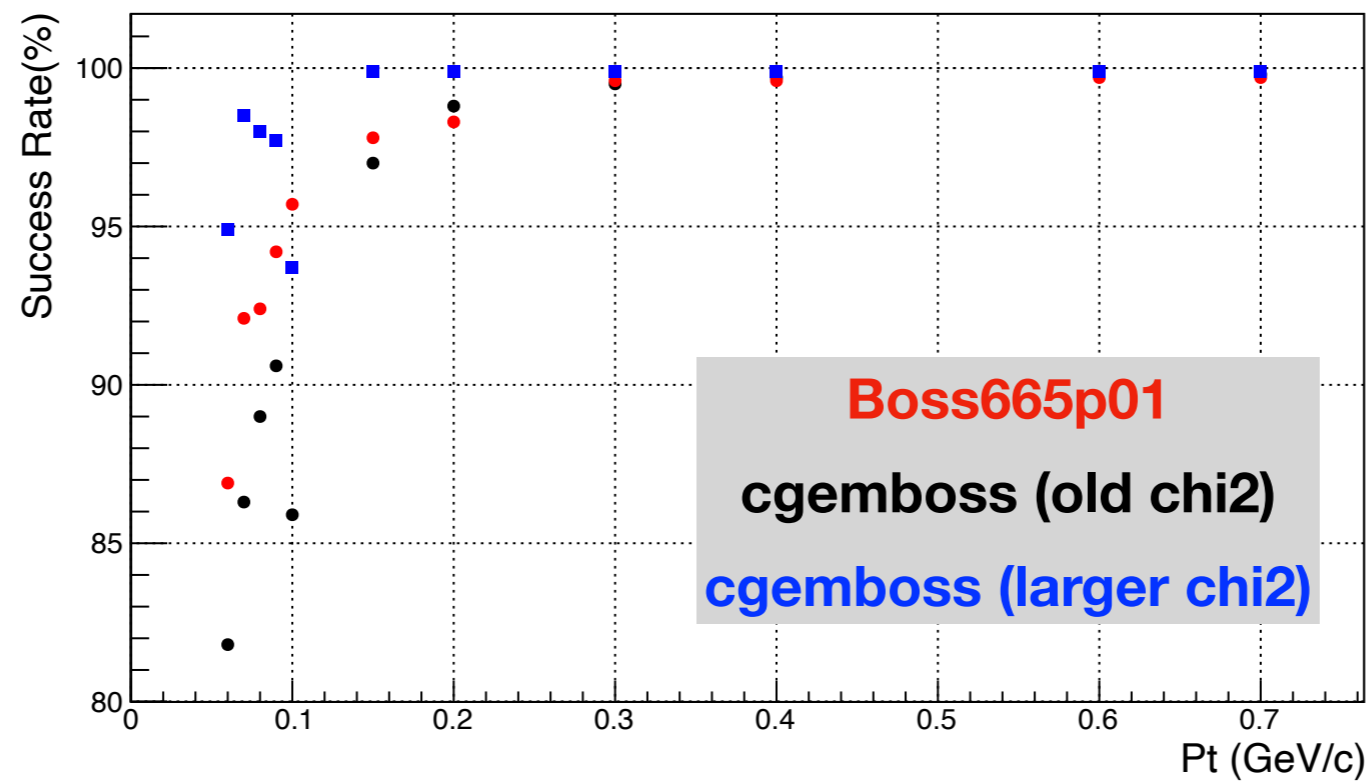
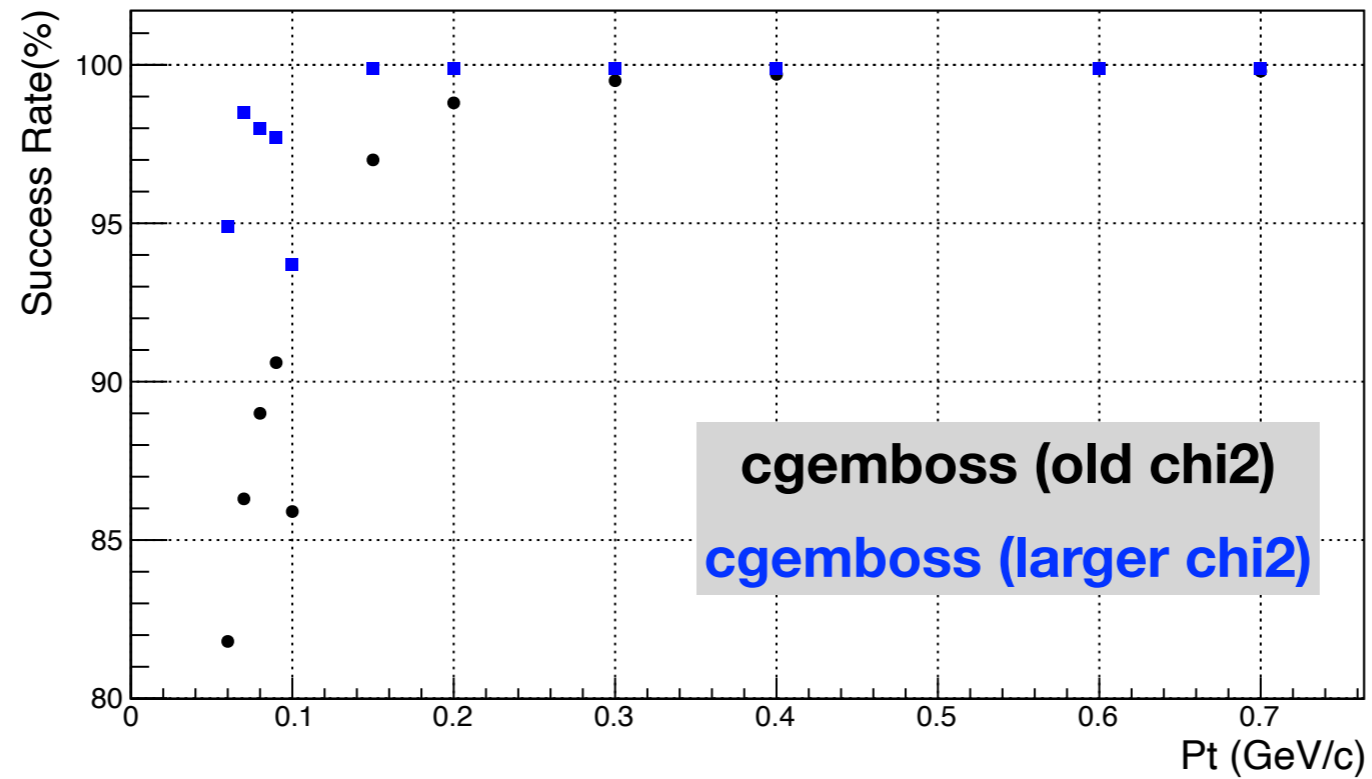


Chisq cuts:

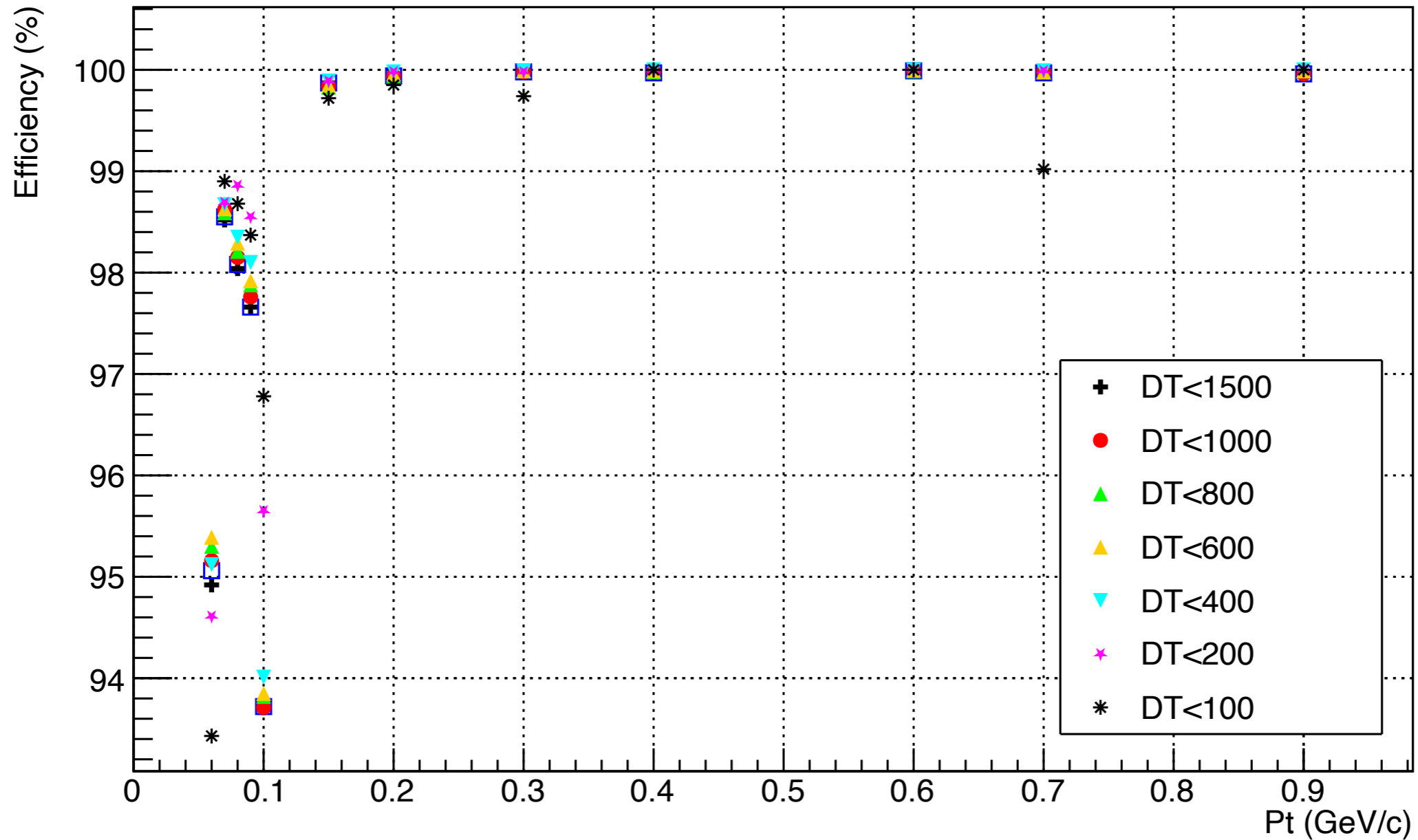
```
KalFitAlg.dchi2cut_mid1 = 100; //layerid 4-11  
KalFitAlg.dchi2cut_mid2 = 100; //layerid 12-20  
KalFitAlg.dchi2cut_outer = 100; //layerid 20-43
```

Hough Drift time < 1500 ns

KalFit success rate



KalFit success rate vs drift time cuts

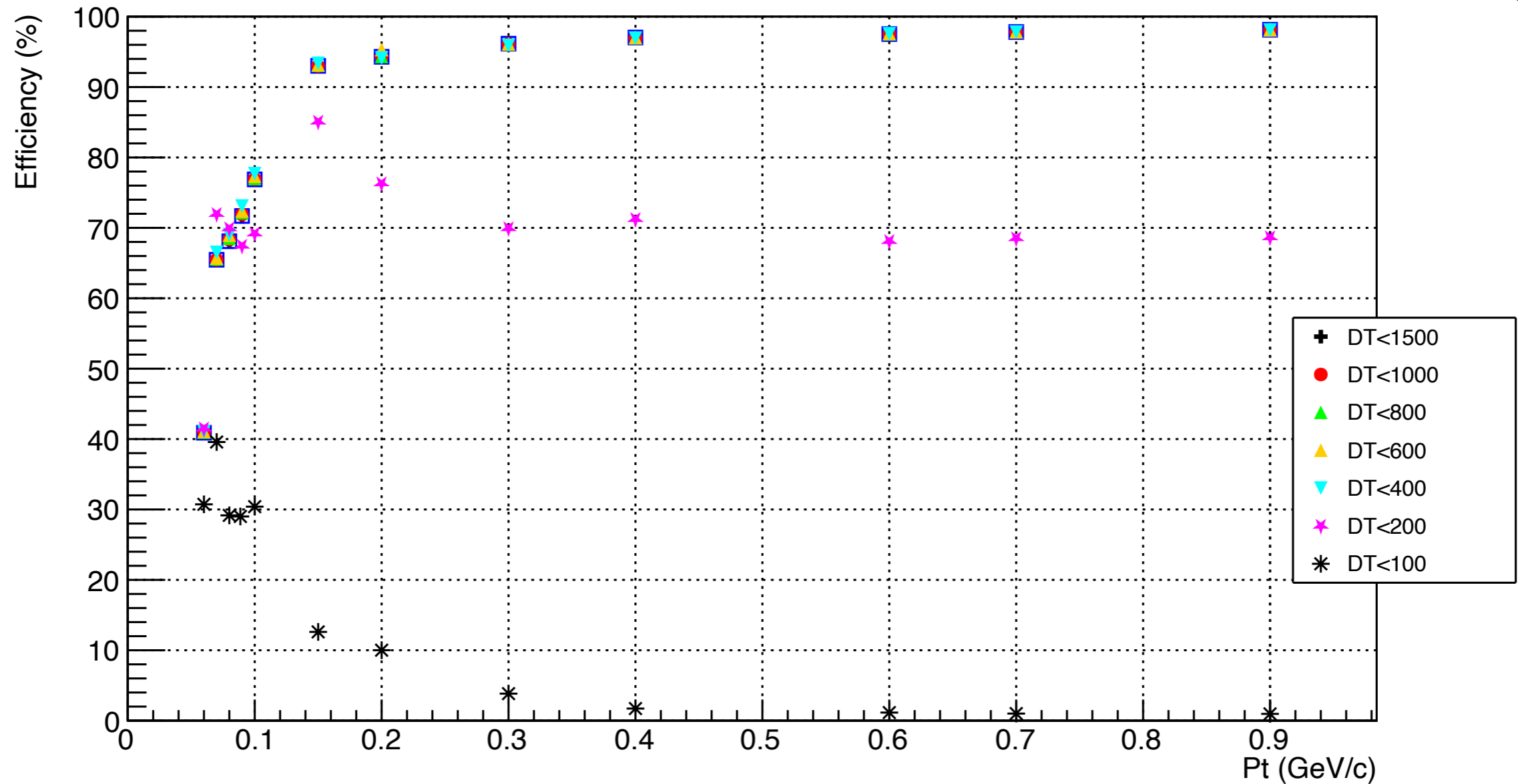


Chisq cuts:

```
KalFitAlg.dchi2cut_mid1 = 100; //layerid 4-11  
KalFitAlg.dchi2cut_mid2 = 100; //layerid 12-20  
KalFitAlg.dchi2cut_outer = 100; //layerid 20-43
```


KalFit efficiency vs drift time cuts

eff = $\frac{\text{\#evt (1trk al least)}}{\text{\#evt gen}}$



Chisq cuts:

```
KalFitAlg.dchi2cut_mid1 = 100; //layerid 4-11  
KalFitAlg.dchi2cut_mid2 = 100; //layerid 12-20  
KalFitAlg.dchi2cut_outer = 100; //layerid 20-43
```

