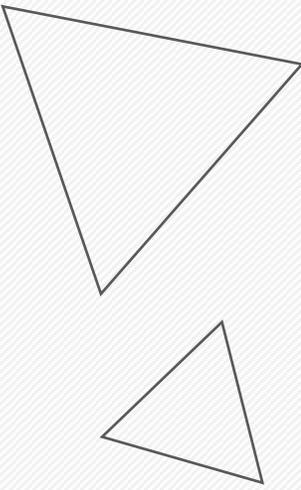


Test of HoughTransAlg-00-00-14

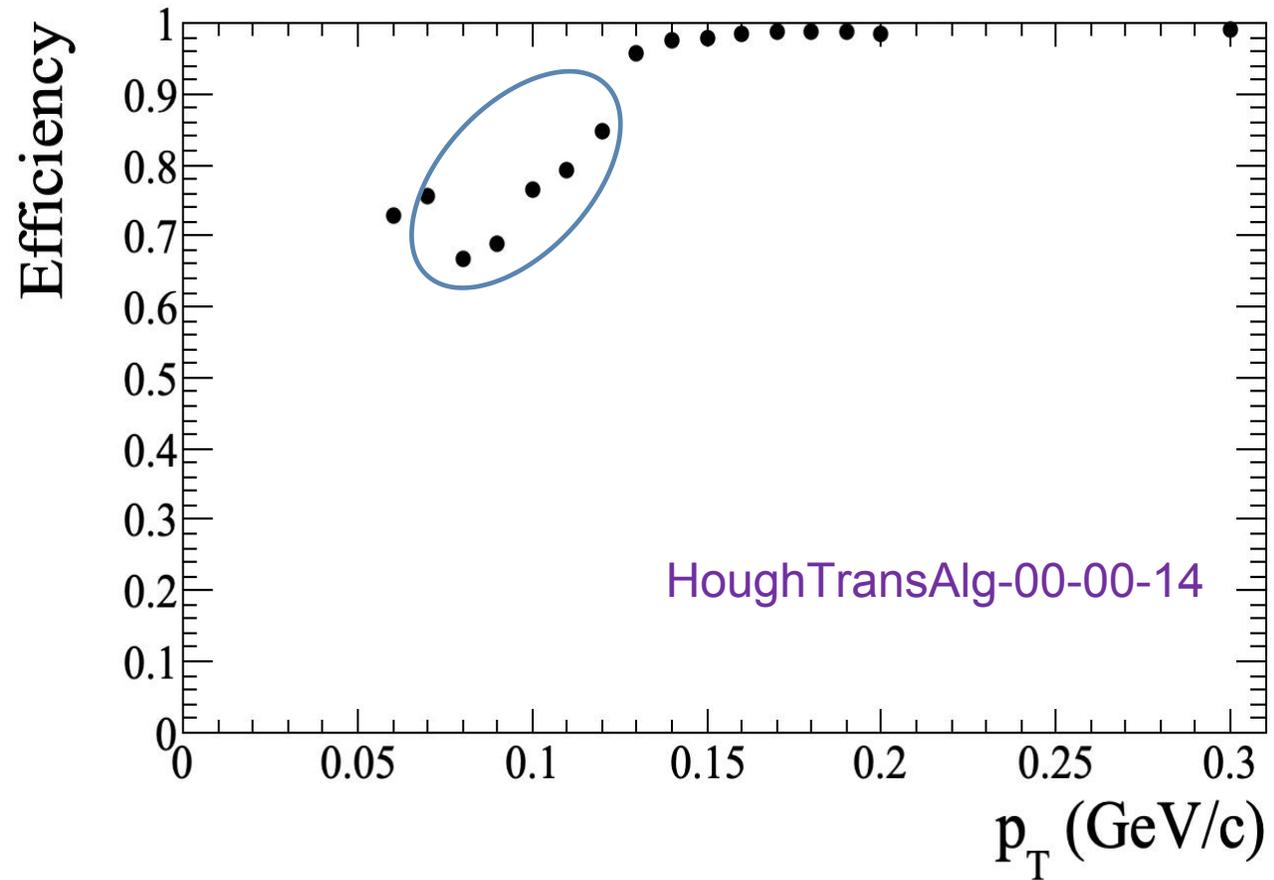
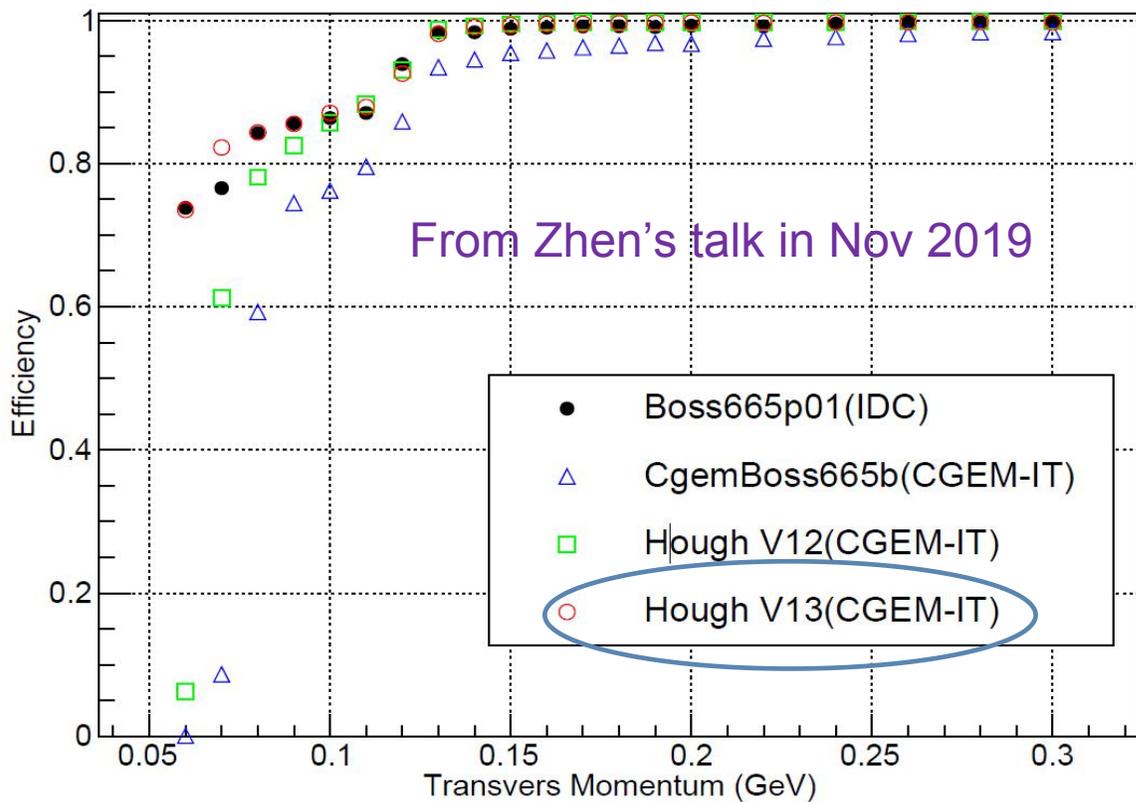
Tracking efficiency and Kalman Filter success rate

.....• Long LI (Shandong University) •.....
Liangliang Wang
Linghui WU
Yao ZHANG



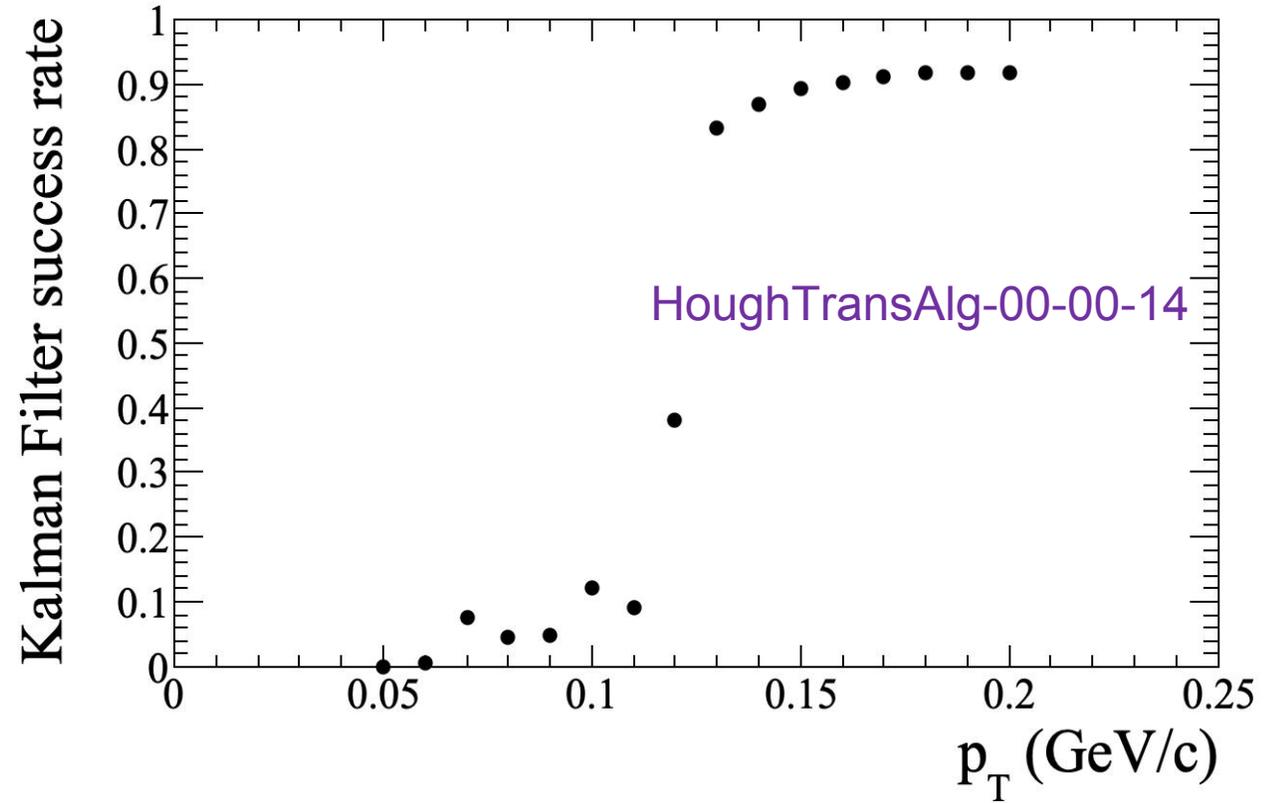
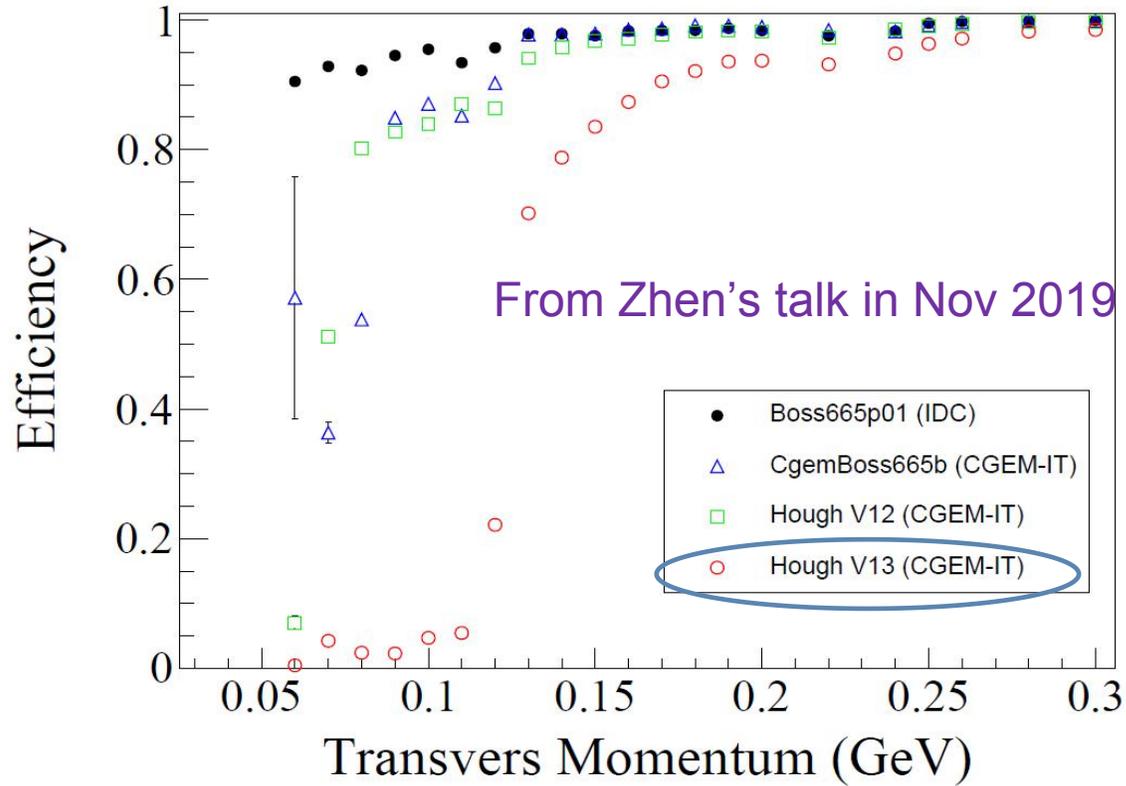
Tracking efficiency

Sample: single μ^-



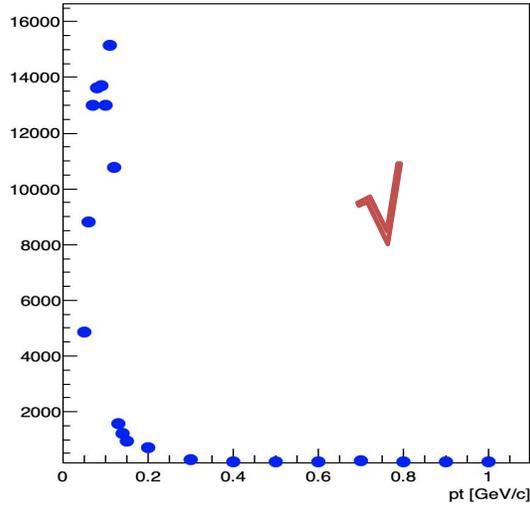
Kalman Filter success rate

Sample: single μ^-

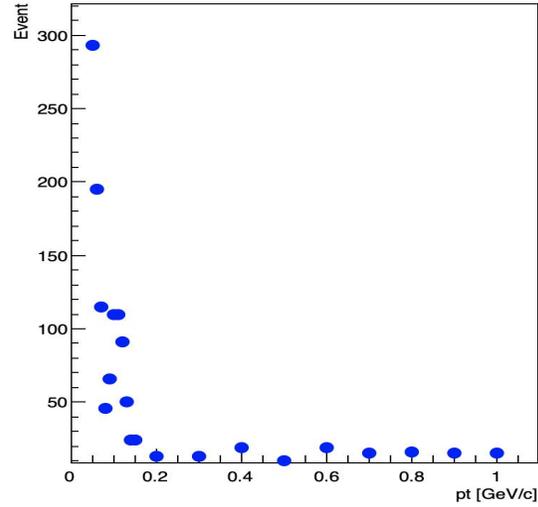


Classification of the kalman filter loss

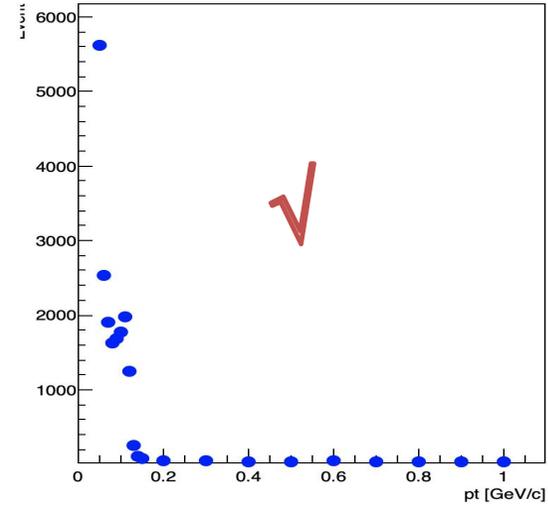
Dropped hits more than 6



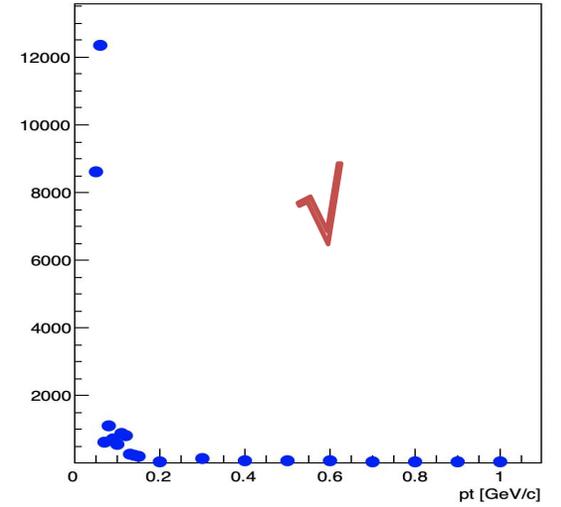
kappa change the sign



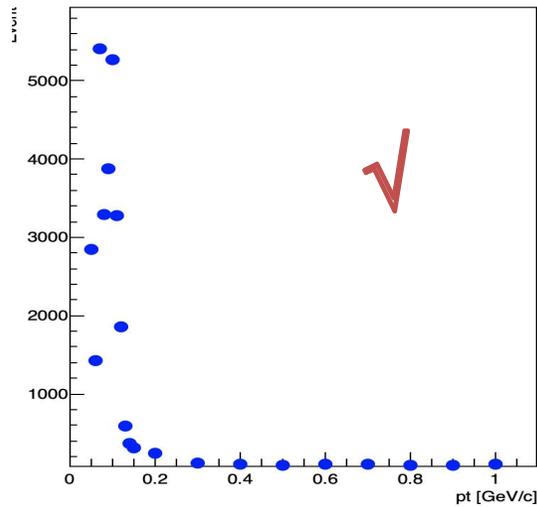
Hits on track less than 6



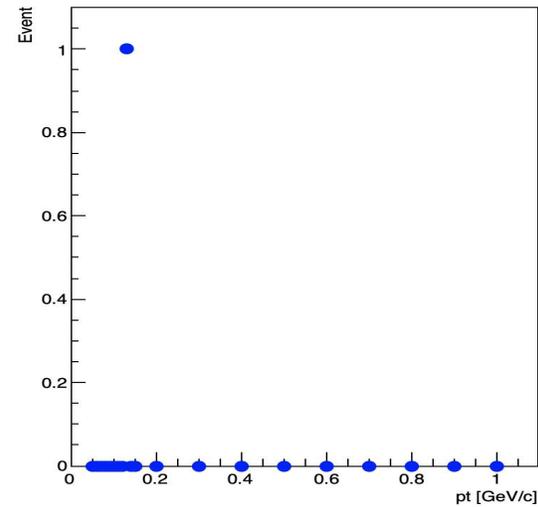
Hits on stereo wire less than 2



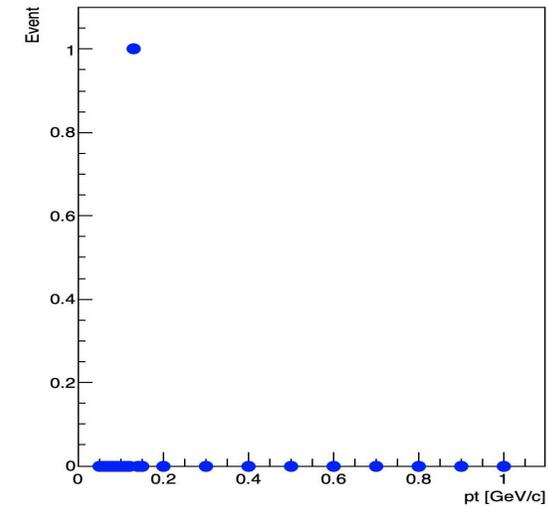
Hits on axis wire less than 3



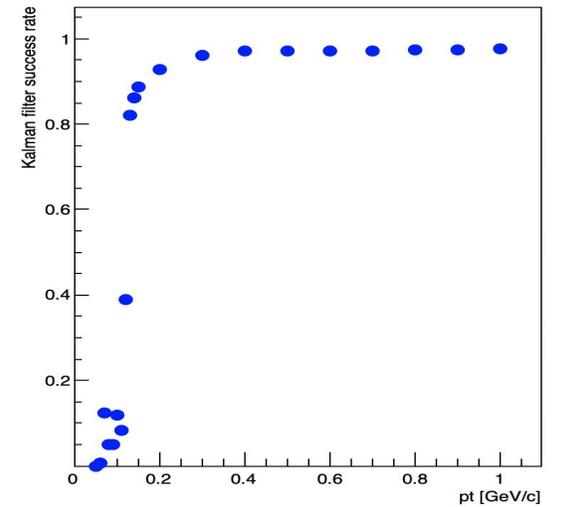
negative chi2



negative Error

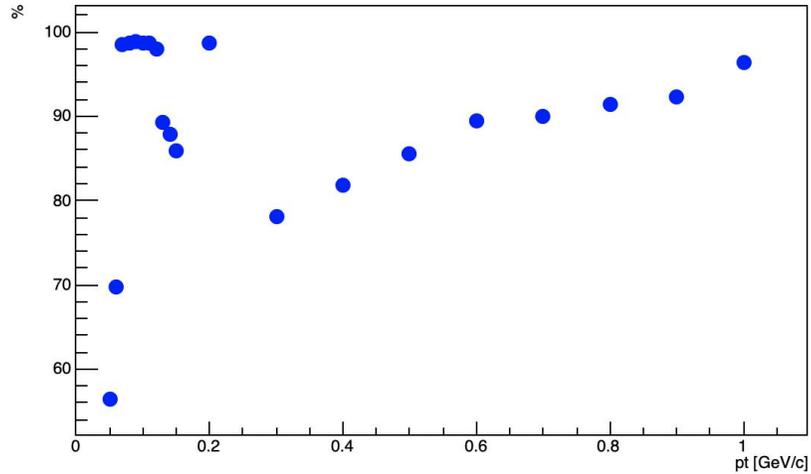


Efficiency

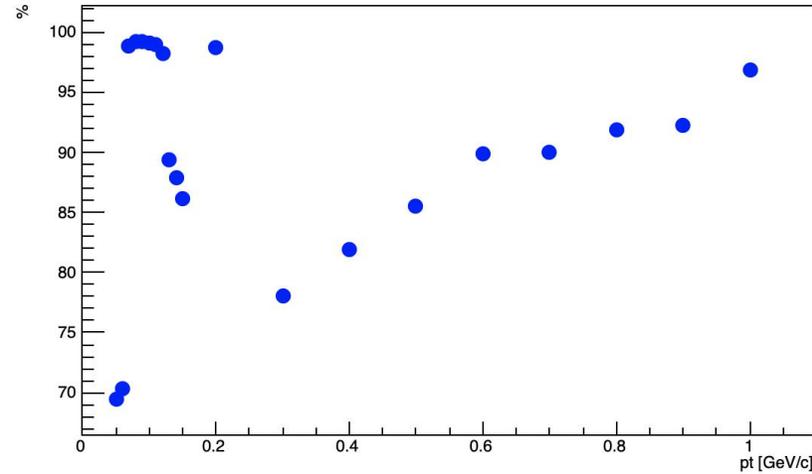


Main causes for the kalman filter loss

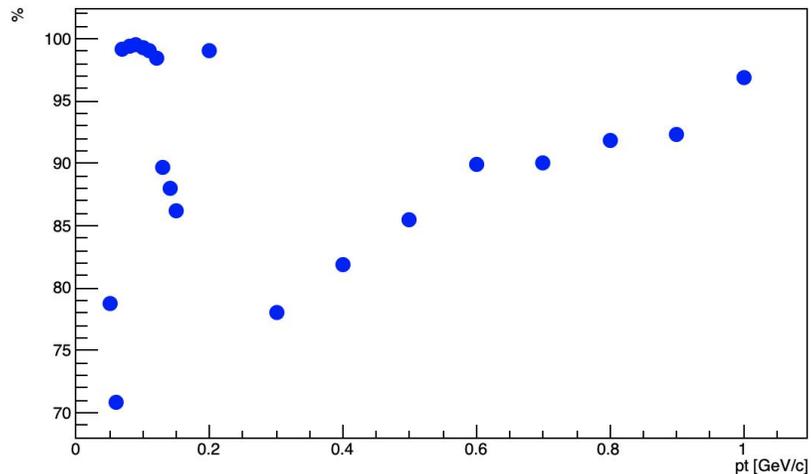
Case: 1



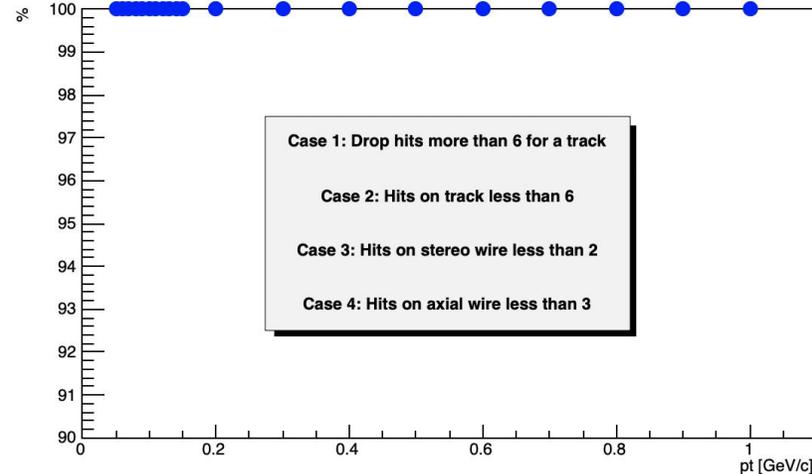
Case: 1 ∪ 4



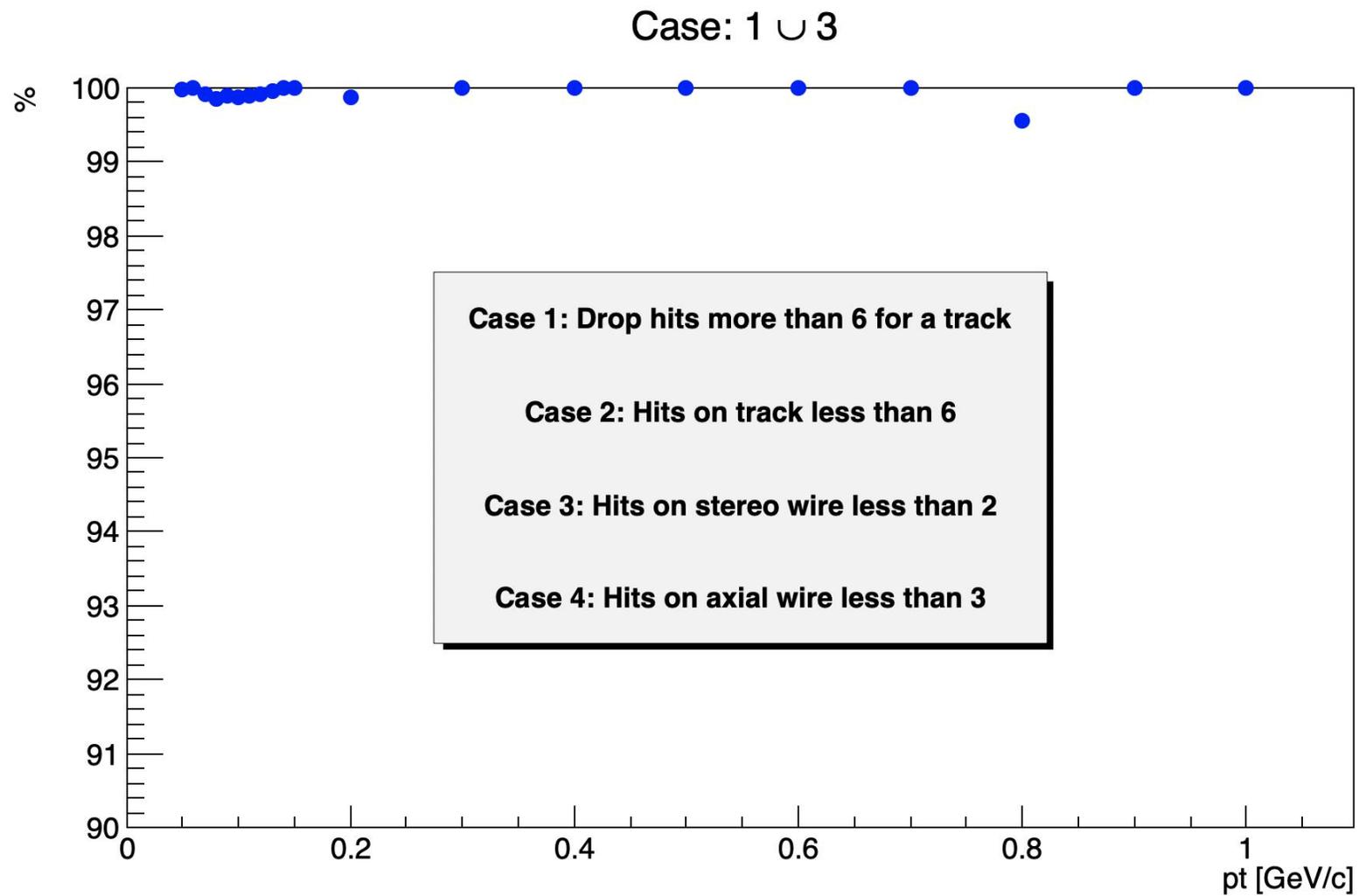
Case: 1 ∪ 2 ∪ 4



Case: 1 ∪ 2 ∪ 3 ∪ 4



$$\frac{\text{Kalman filter loss by case } x}{\text{total Kalman filter loss}} \times 100\%$$



- Some preliminary test of HoughTransAlg-00-00-14 was performed with simulated single muons
- In general, the efficiencies with HoughTransAlg-00-00-14 is comparable with Hough v13 and BOSS665p01, but between 70 and 120 MeV/c (p_T) it is lower with HoughTransAlg-00-00-14
- The Kalman Filter success rate is higher with HoughTransAlg-00-00-14 than Hough v13, but still much lower than BOSS665p01 at low p_T .
- The causes of the Kalman filter loss have been classified into 7 cases, case1 and case3 dominate.