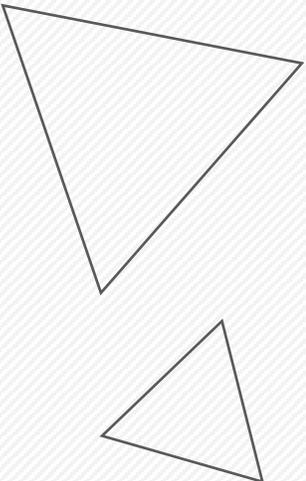


Check of single π^- reconstruction with CGEM+ODC

Liangliang Wang (IHEP), Long Li (Shandong University),
Linghui Wu (IHEP) and Yao Zhang (IHEP)



Assumptions in CGEM simulation

- 100% cluster efficiency
- Spatial resolution 130 μm in both X and V direction

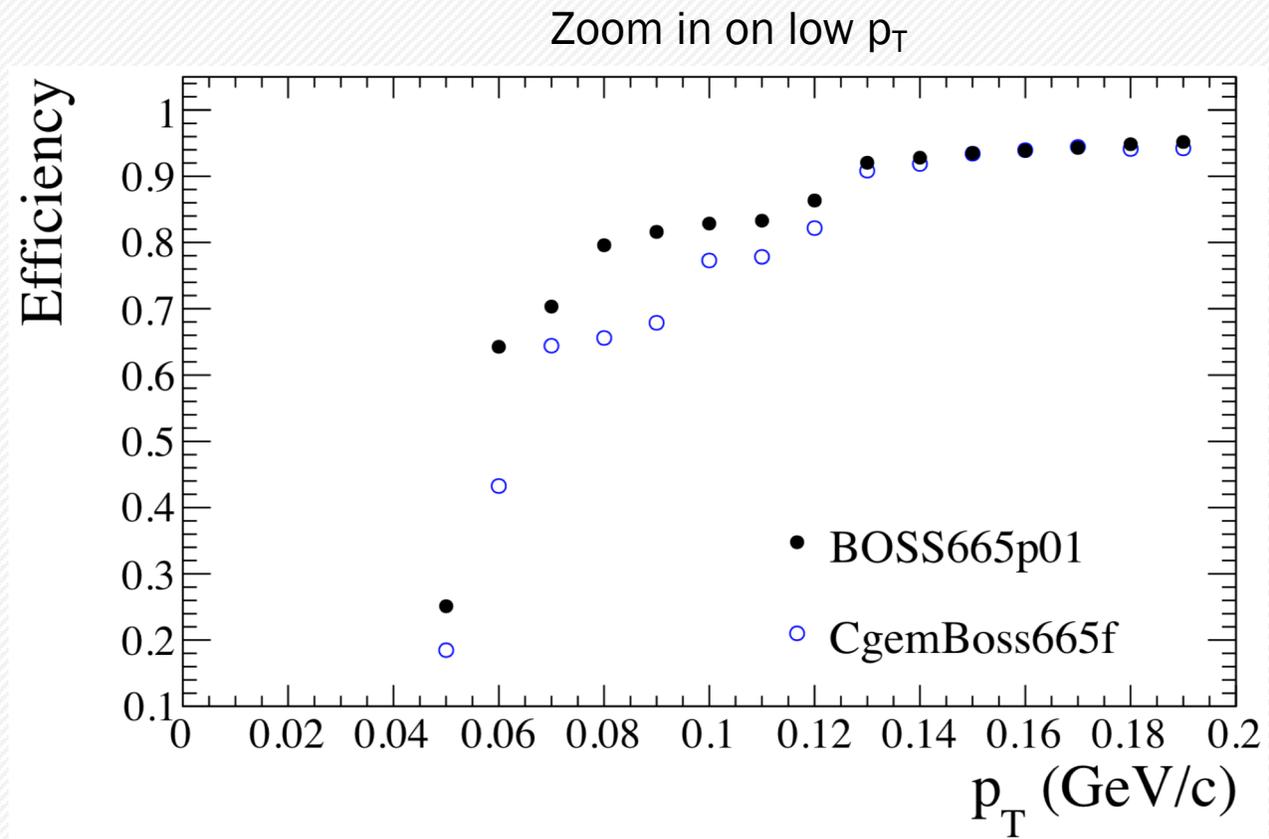
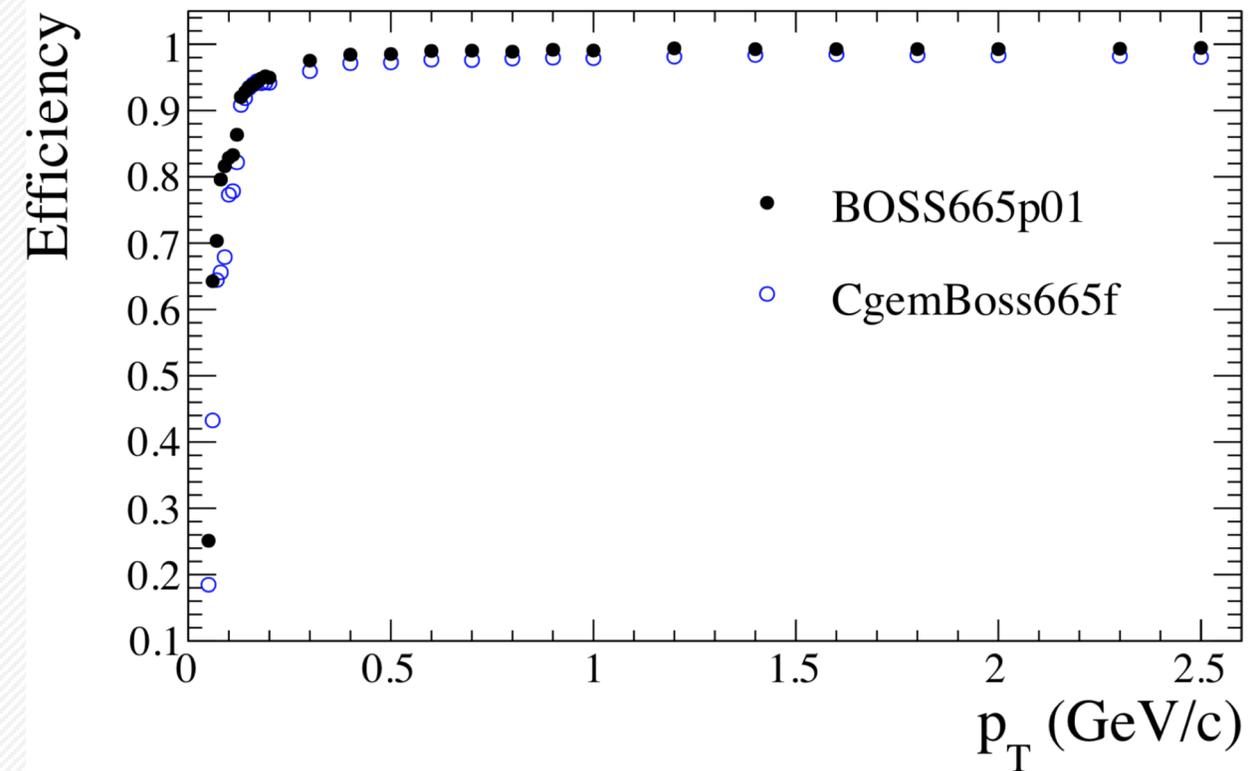
|| Good track and tracking efficiency

- Good track: $|dr| < 1.0\text{cm}$, $|dz| < 10\text{cm}$, $|\cos\theta| < 0.93$, correct charge
- Tracking efficiency for single track events:

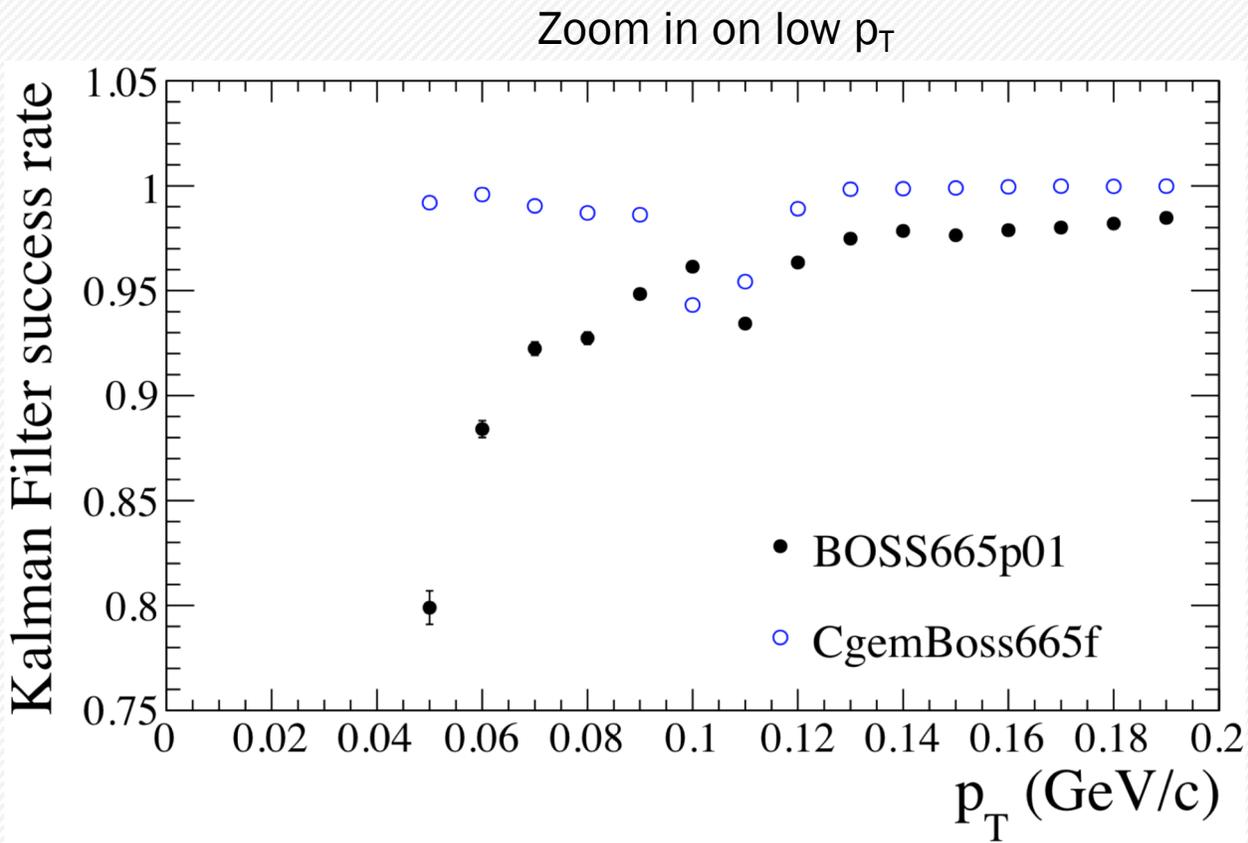
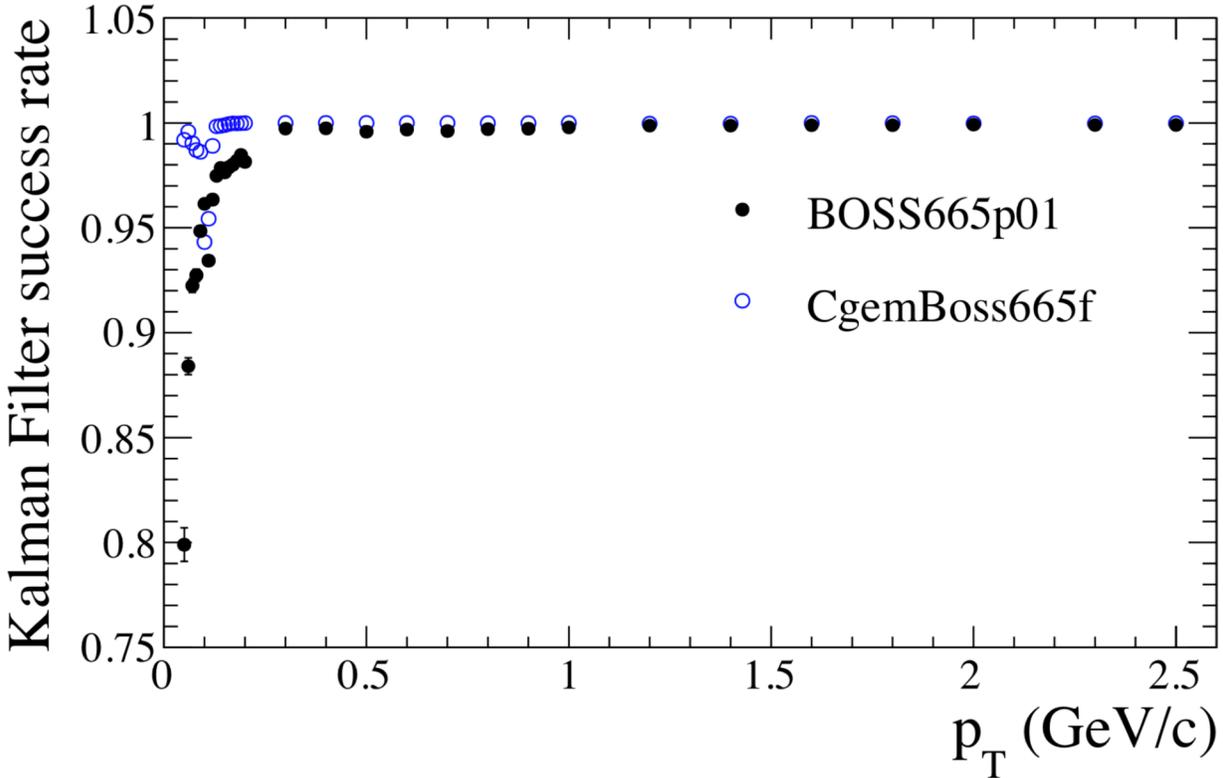
$$\varepsilon = N_{\text{good}}/N_{\text{gen}}$$

where N_{good} is the number of events with one or more good tracks reconstructed,
 N_{gen} is the number of events generated/simulated

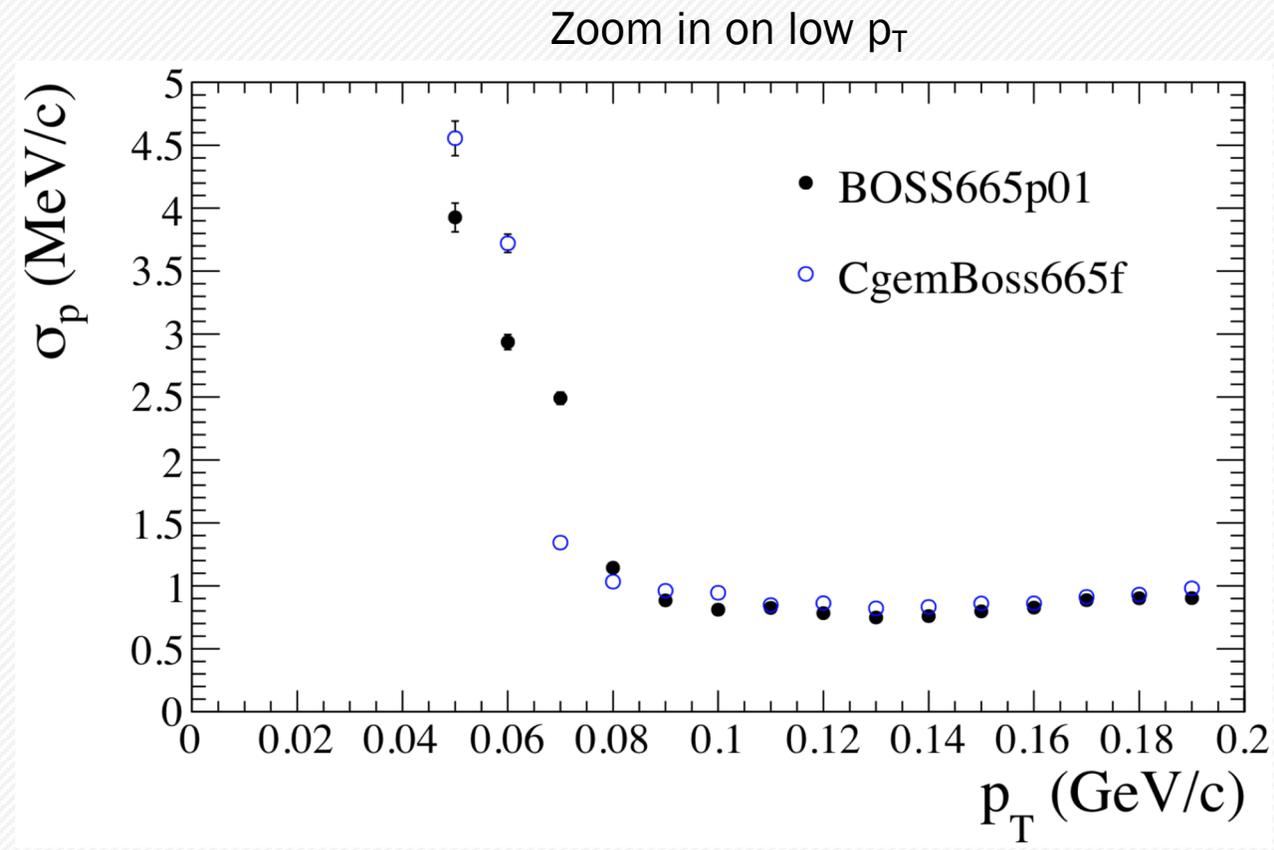
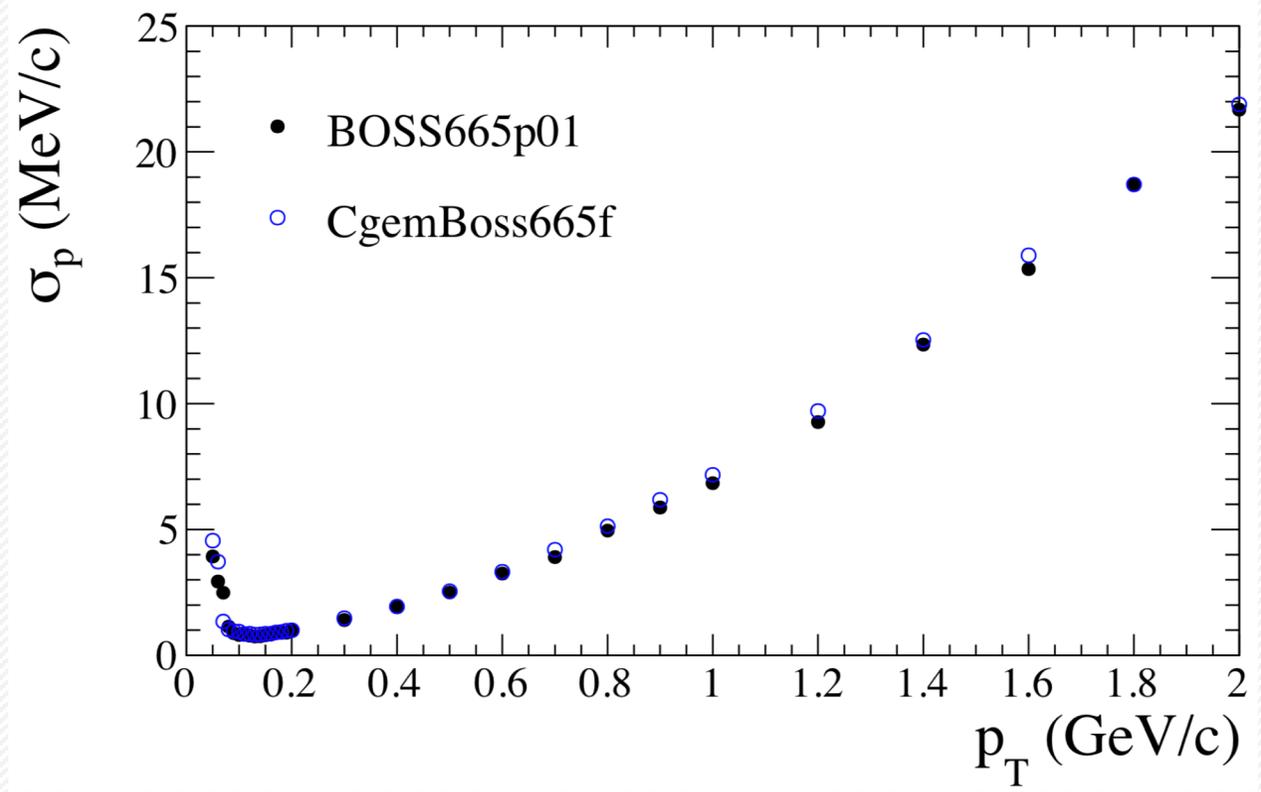
Tracking efficiency for single π^-



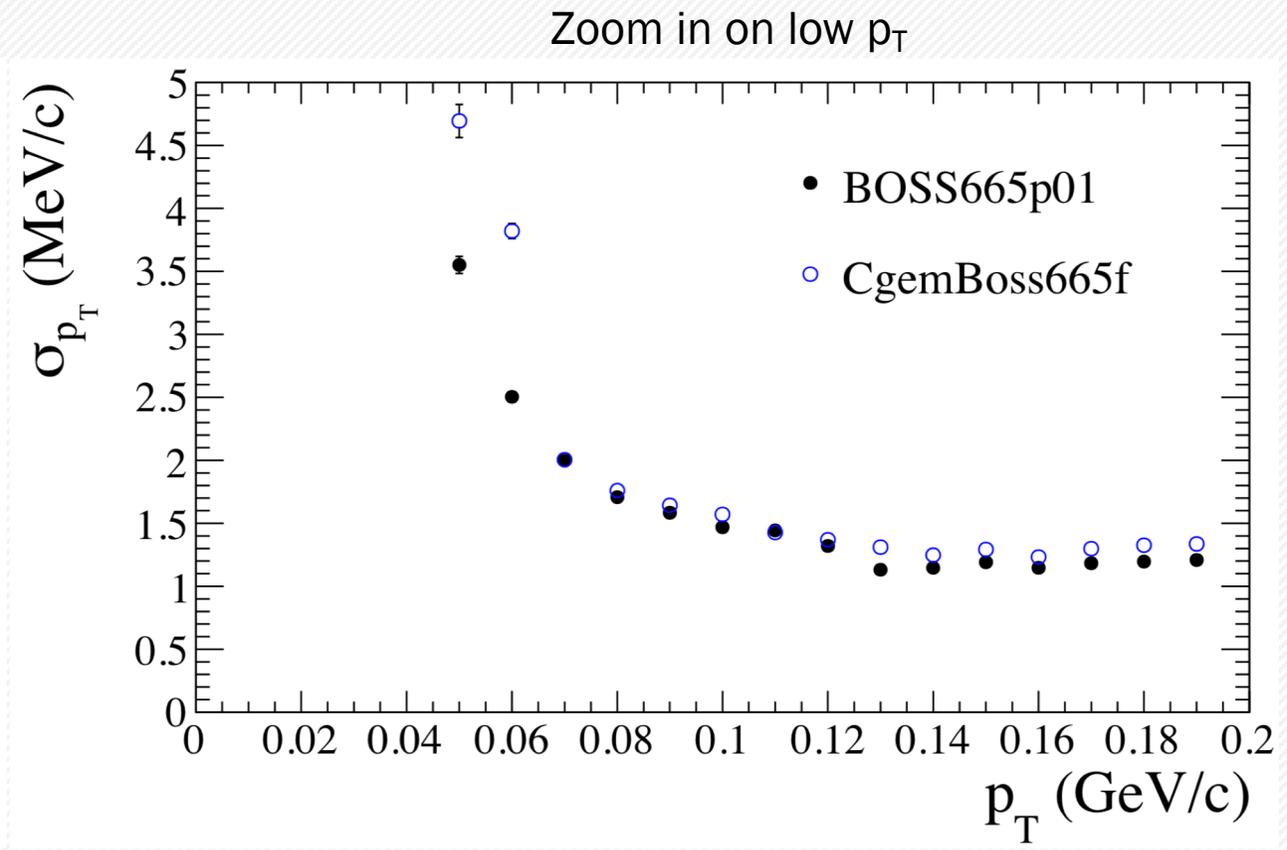
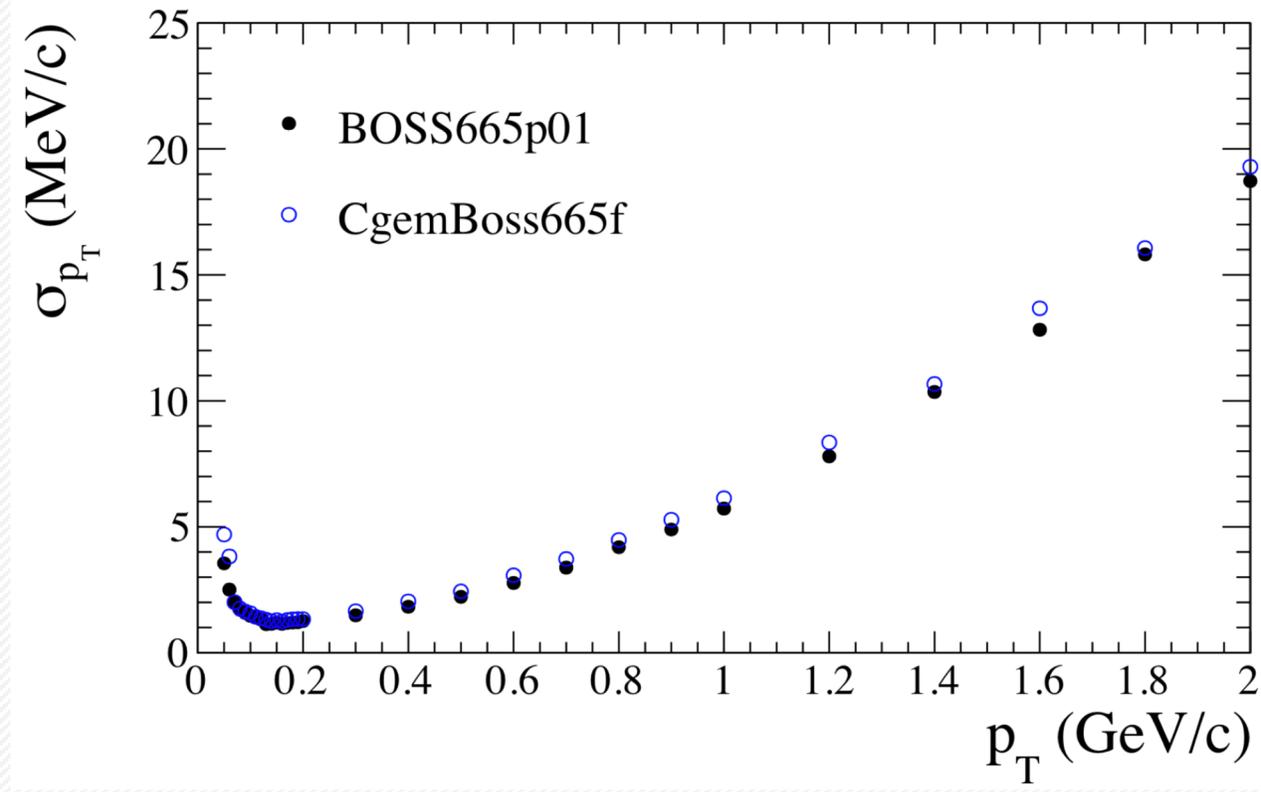
|| Kalman filter success rate for good π^- track



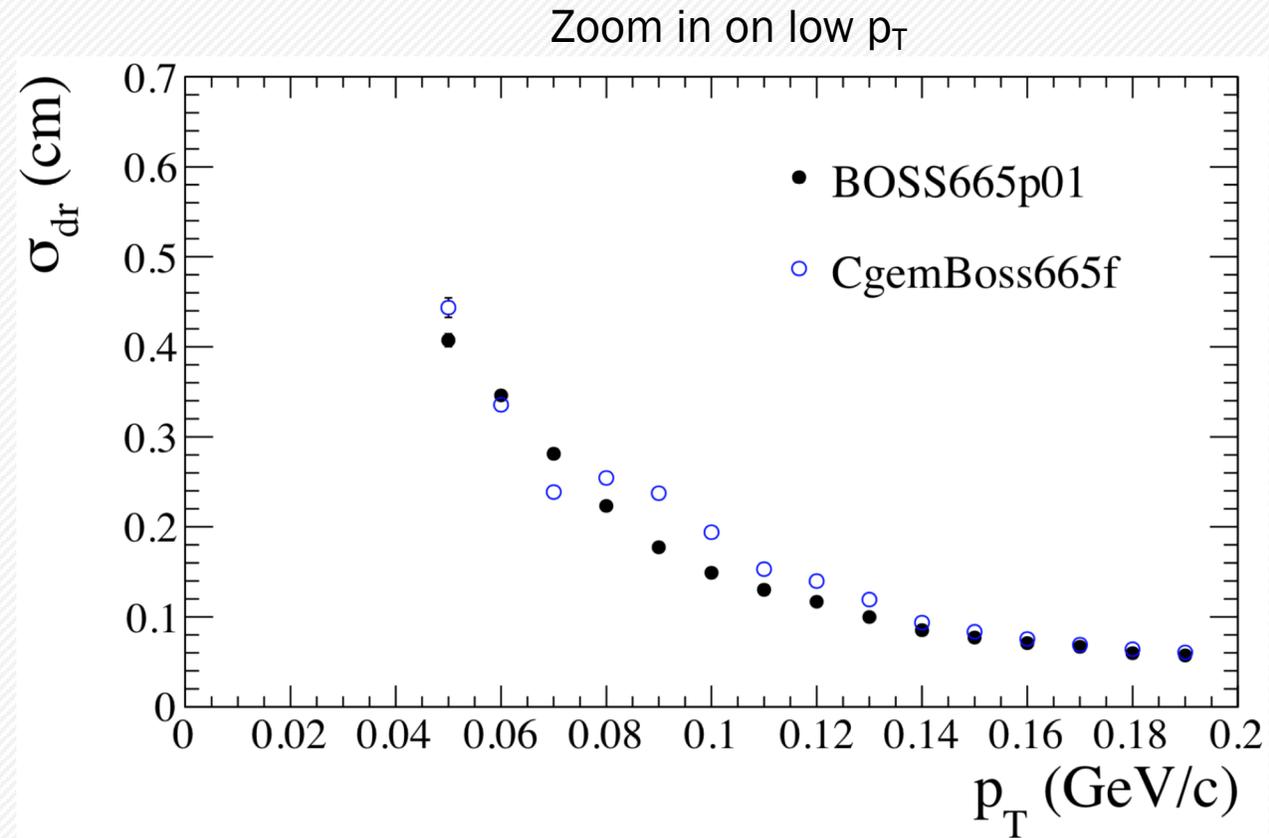
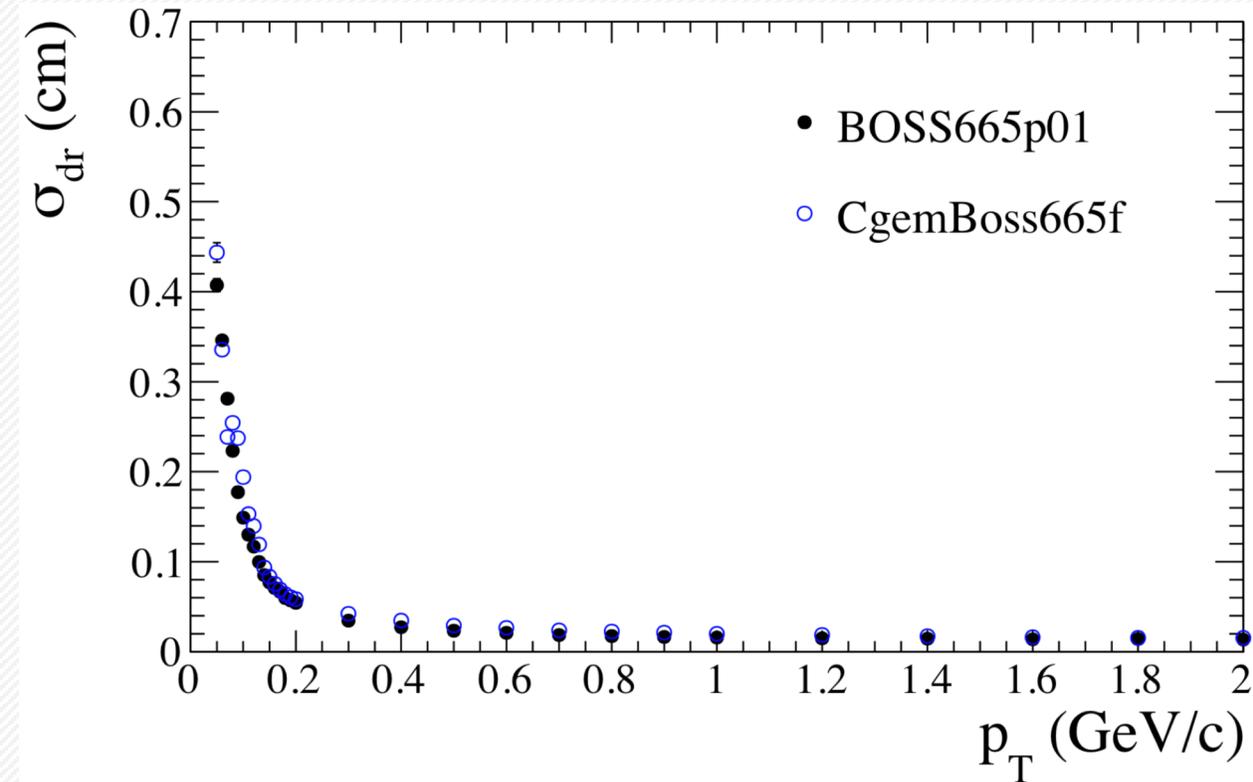
III Momentum resolution for π^- (after Kalman filter)



Transverse momentum resolution for π^- track (after Kalman filter)

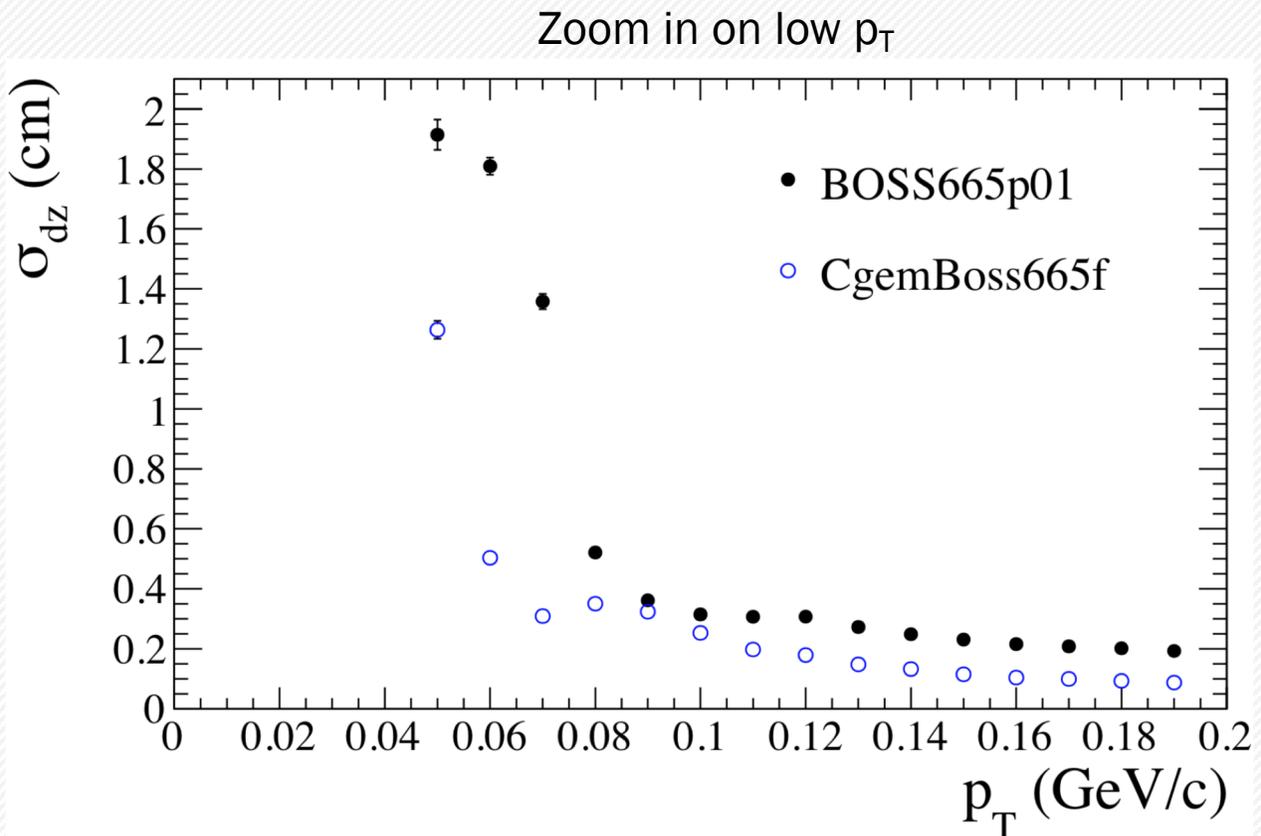
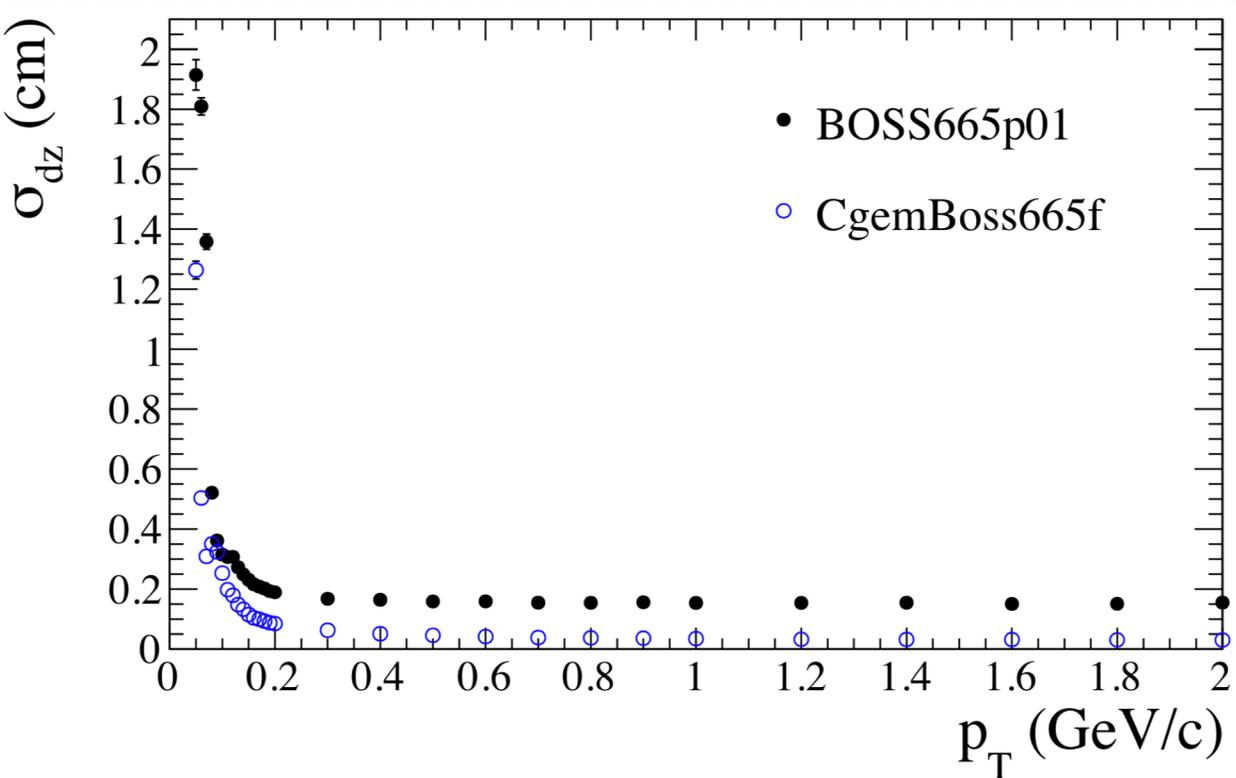


III Transverse vertex resolution for π^- track (after Kalman filter)



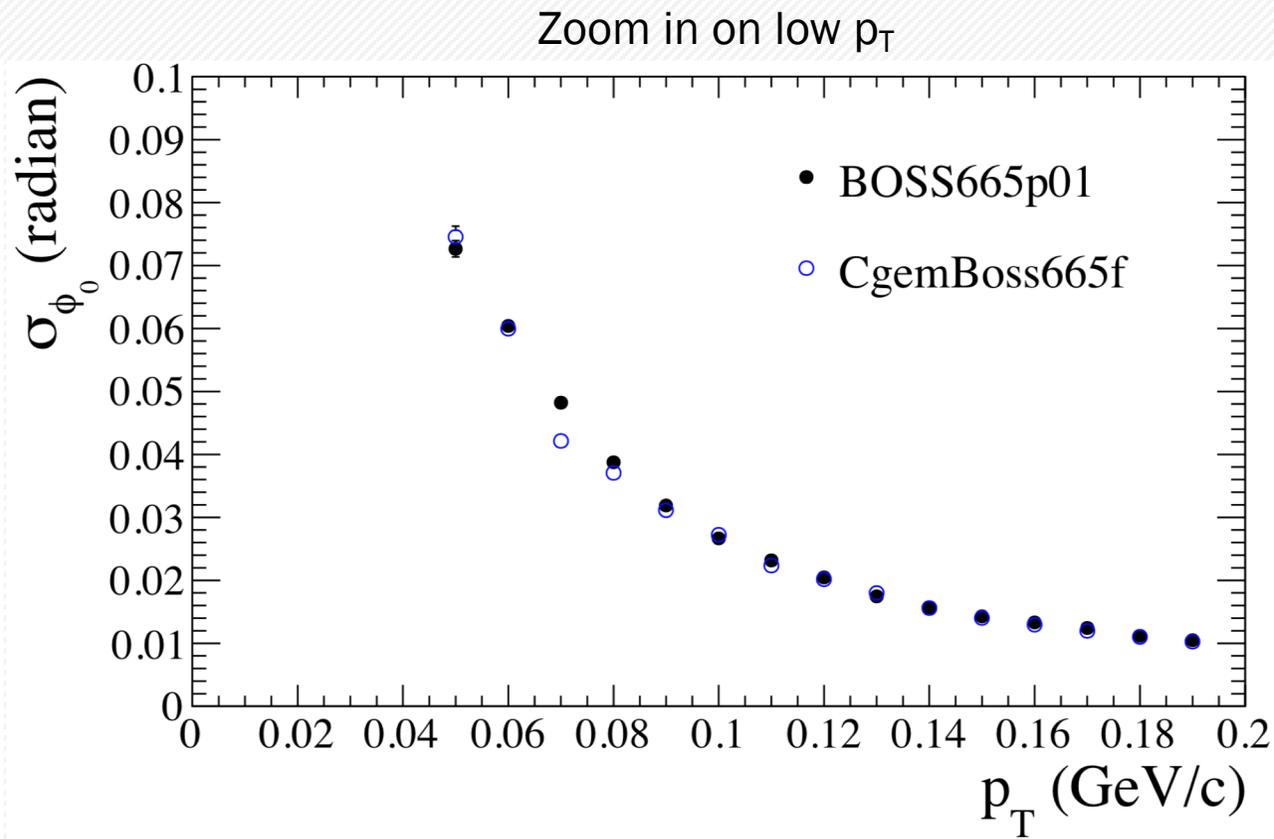
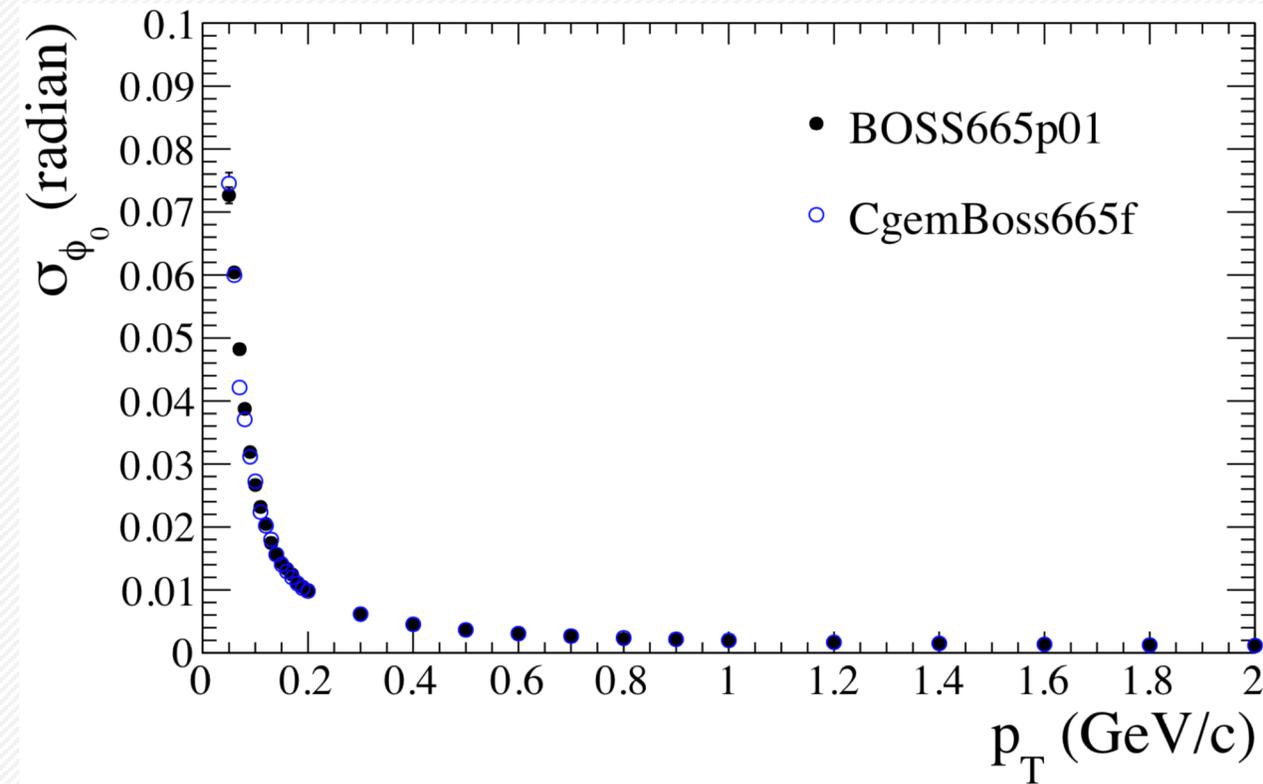


Axial vertex resolution (in z) for π^- track (after Kalman filter)

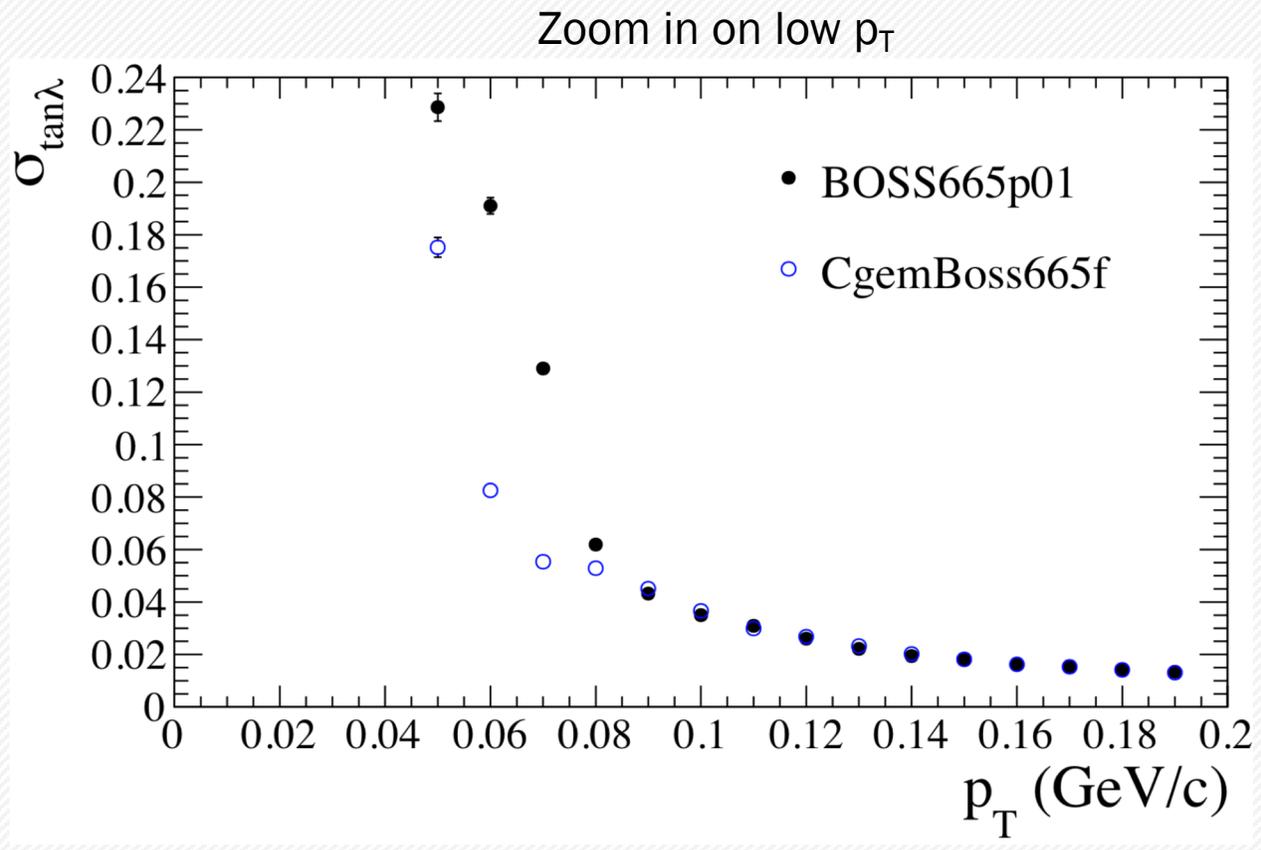
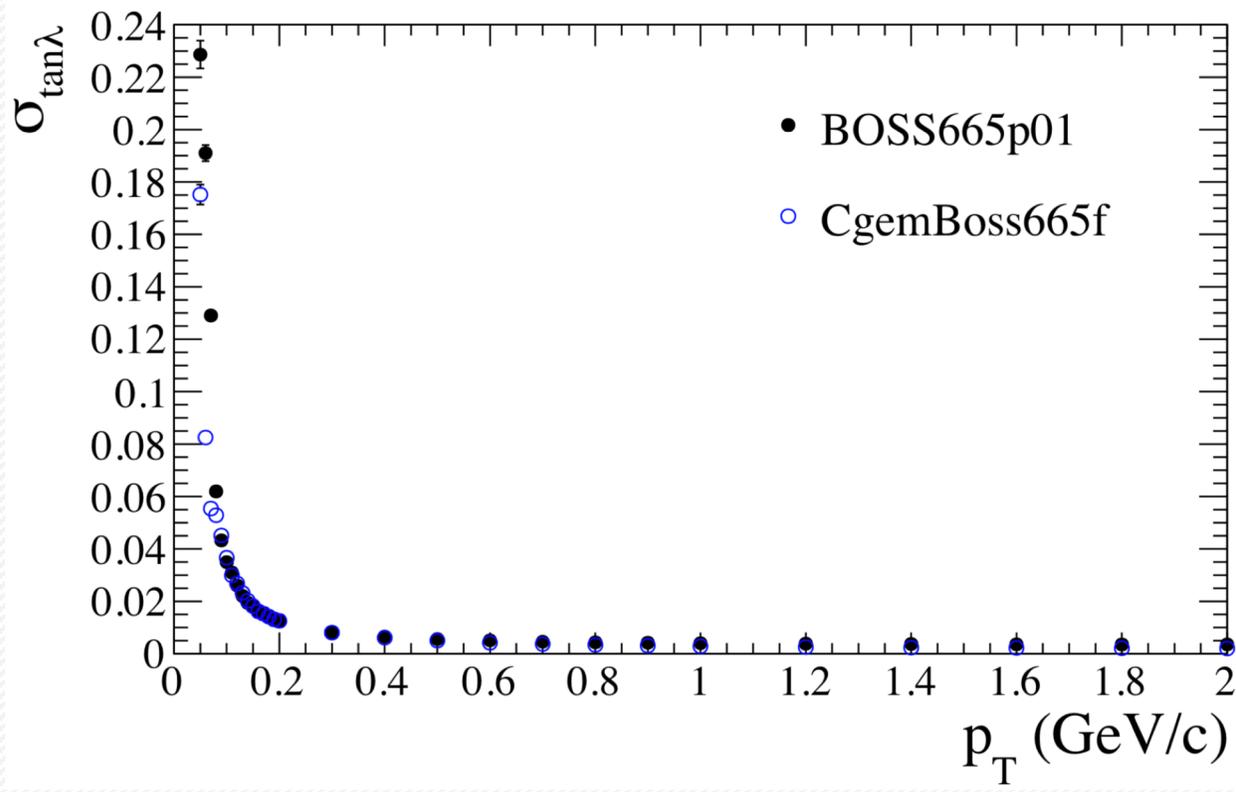




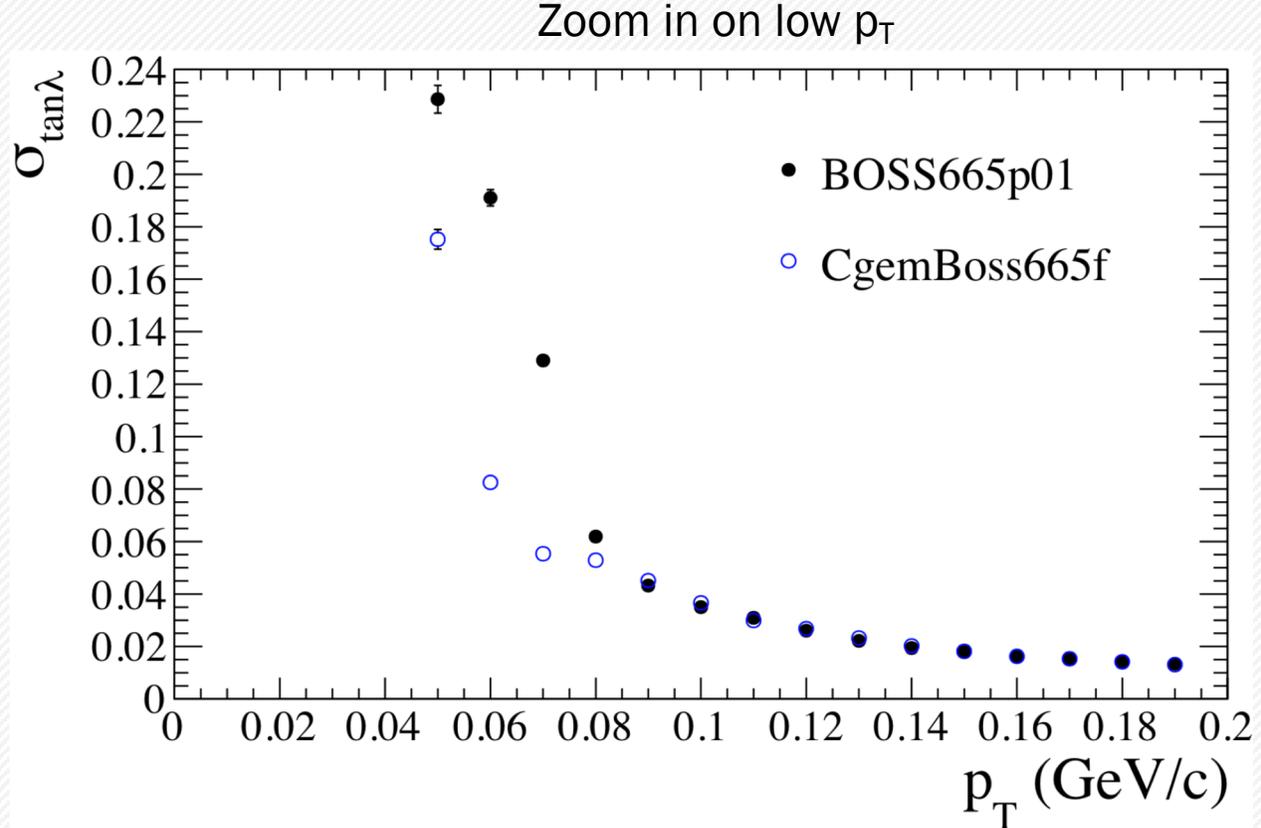
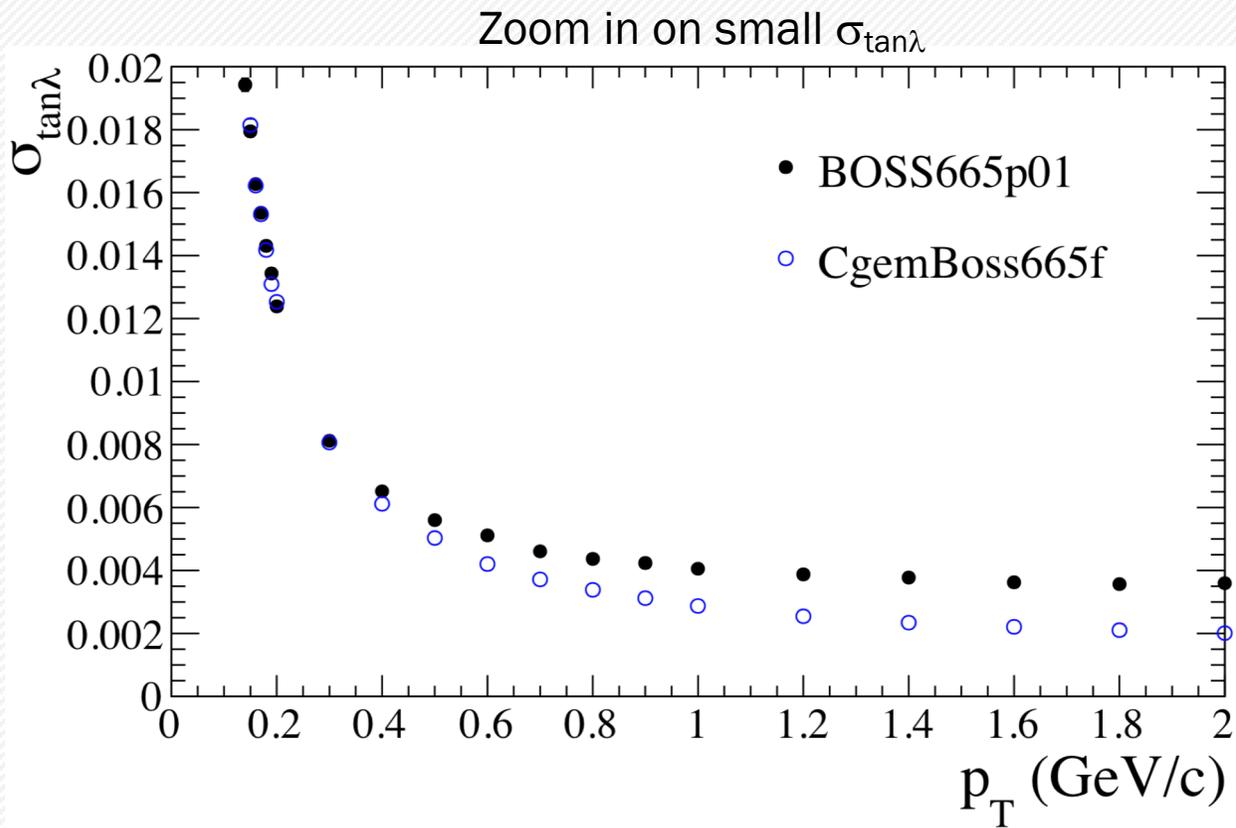
Transverse angle resolution for π^- track (after Kalman filter)



III Dip angle resolution for π^- track (after Kalman filter)

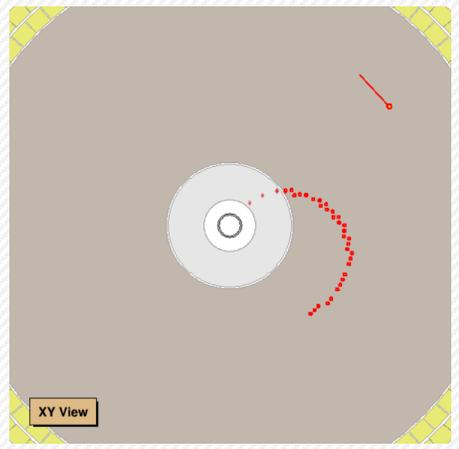


III Dip angle resolution for π^- track (after Kalman filter) (conti.)



Single π^- with $p_T=60$ MeV/c in CGEM+ODC (100 events checked)

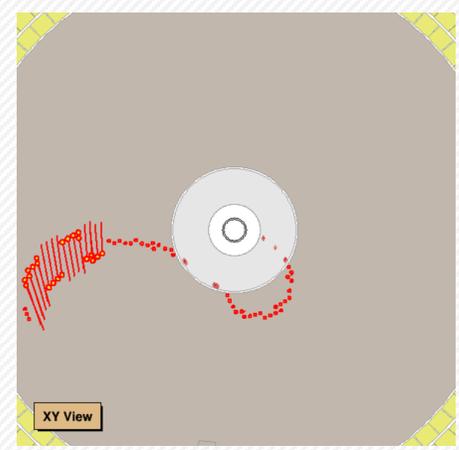
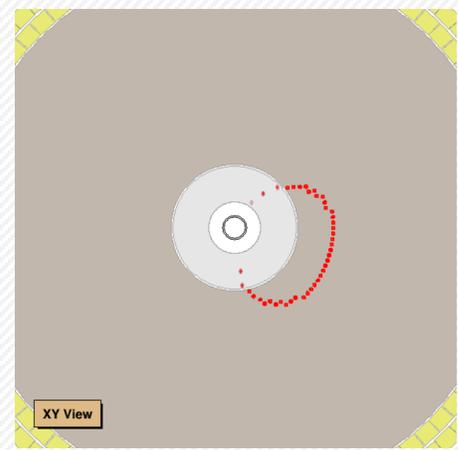
Normal $\sim < 60\%$



kink $\sim > 20\%$

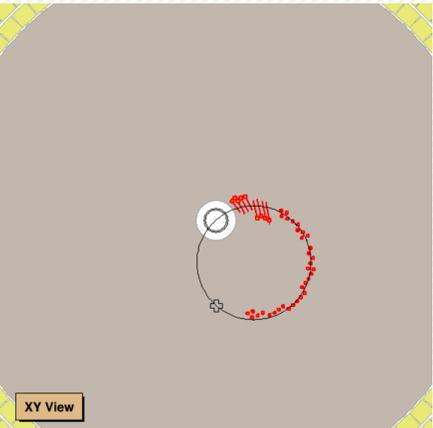


secondaries $\sim > 20\%$

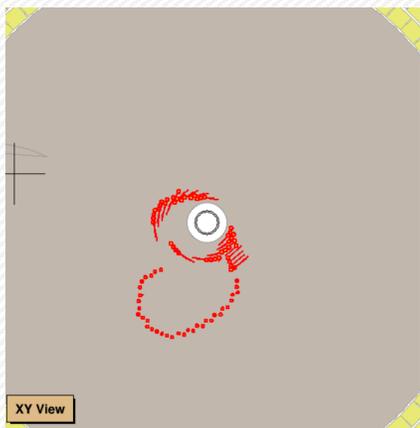
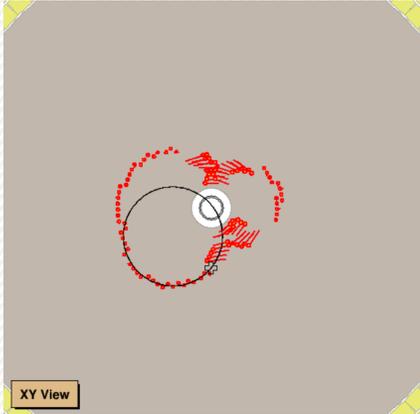


Single π^- with $p_T=60$ MeV/c in MDC (100 events checked)

Normal 92/100



kink 2/100



secondaries 6/100

