

Update on pixel TPC simulation

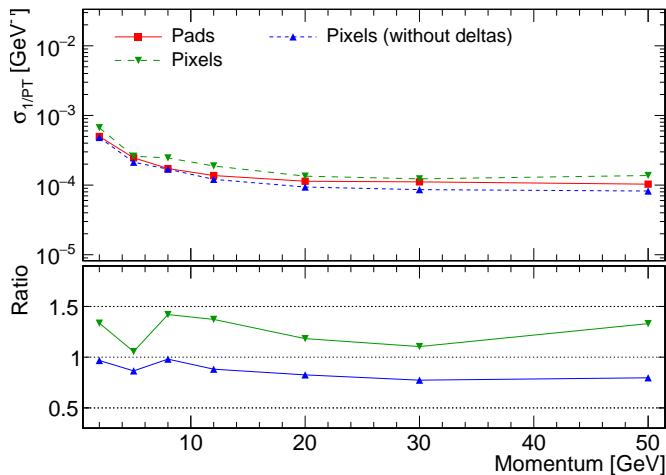
Kees Ligtenberg

Lepcol meeting

October 21, 2019



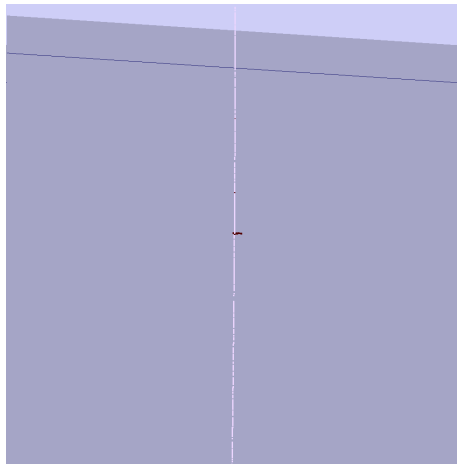
TPC momentum resolution



Tracks all in exactly the same direction: $\phi = 0.01$ and $\theta = 85^\circ$

Delta Hits removal

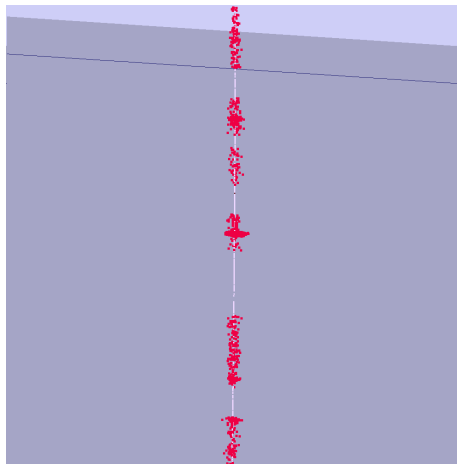
Simulation



Simulation of track (light pink) with delta hit (brown)

Delta Hits removal

Digitisation



Digitisation of track

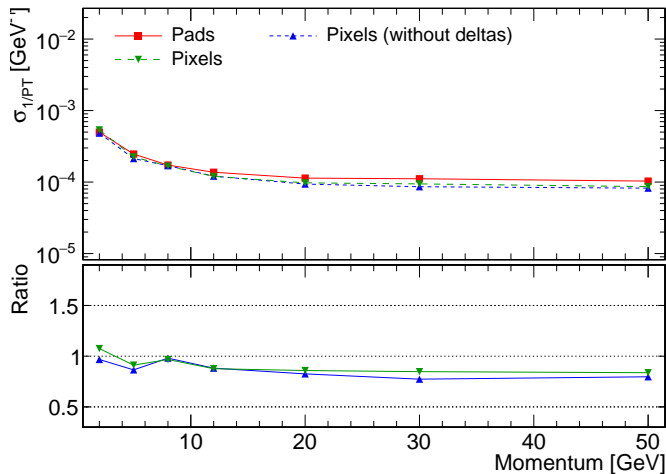
Delta Hits removal

Track fitting



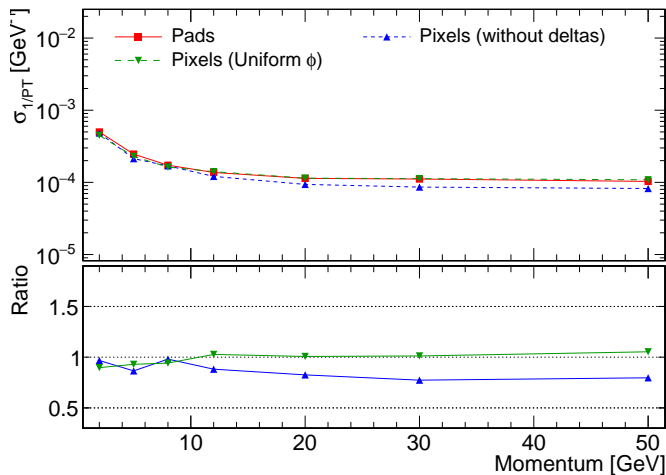
Remove hits if local density is more than 100 per 1.5^2mm^2

TPC momentum resolution



Tracks all in exactly the same direction: $\phi = 0.01$ and $\theta = 85^\circ$

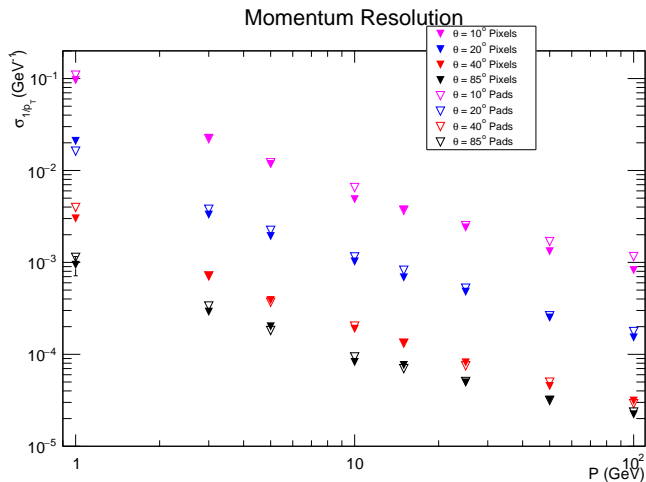
TPC momentum resolution



Tracks uniformly distributed in ϕ , and $\theta = 85^\circ$

Full track with silicon

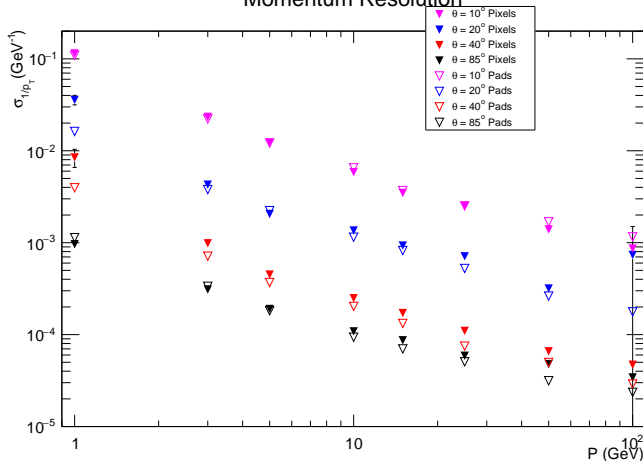
without delta's



Full track with silicon

with delta electrons

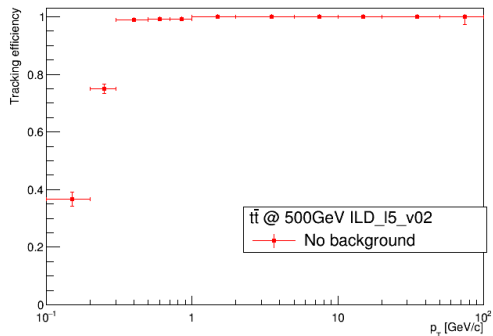
Momentum Resolution



Under investigation

Efficiency

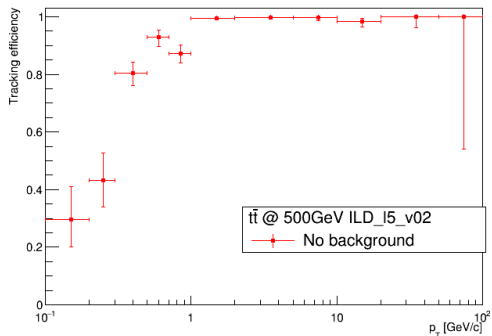
Pads



Efficiency of all tracks in a $t\bar{t}$ event

Efficiency

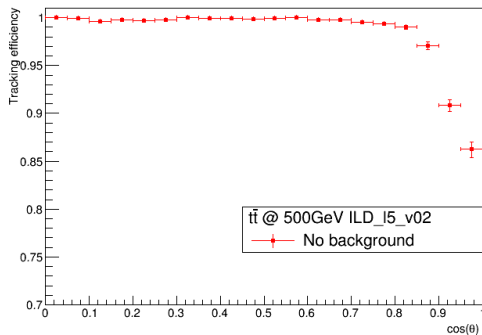
Pixels



Efficiency of all tracks in a $t\bar{t}$ event

Efficiency

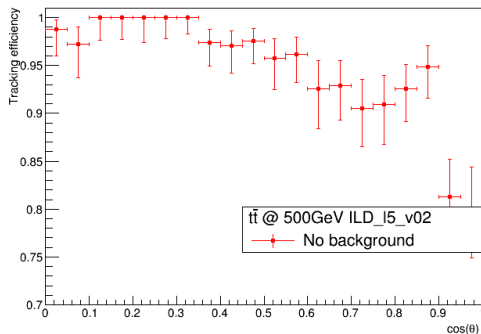
Pads



Efficiency of all tracks in a $t\bar{t}$ event

Efficiency

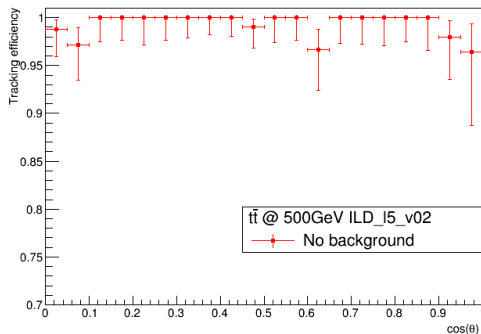
Pixels



Efficiency of all tracks in a $t\bar{t}$ event

Efficiency

Pixels with $P_T > 1$ GeV



Efficiency of all tracks in a $t\bar{t}$ event