

Status of the TOF 30 AGeV analysis.

Data set:

390k STD+ (APR02) (7% 30 AGeV)

Event selection:

- $\text{vertex_fit.iflag} = 0$
- $\text{abs}(\text{vertex_fit.z} - Z_{\text{target}}) < 1\text{cm}$
- $(N_{\text{TOFhits}})_{\pi} > 3$

Track quality cuts:

- $\text{track.px} > 0$.
- global tracks MTPC matched with VT1/VT2
- $\text{track.iflag} = 0$
- last point (tuned a bit for 30 AGeV)

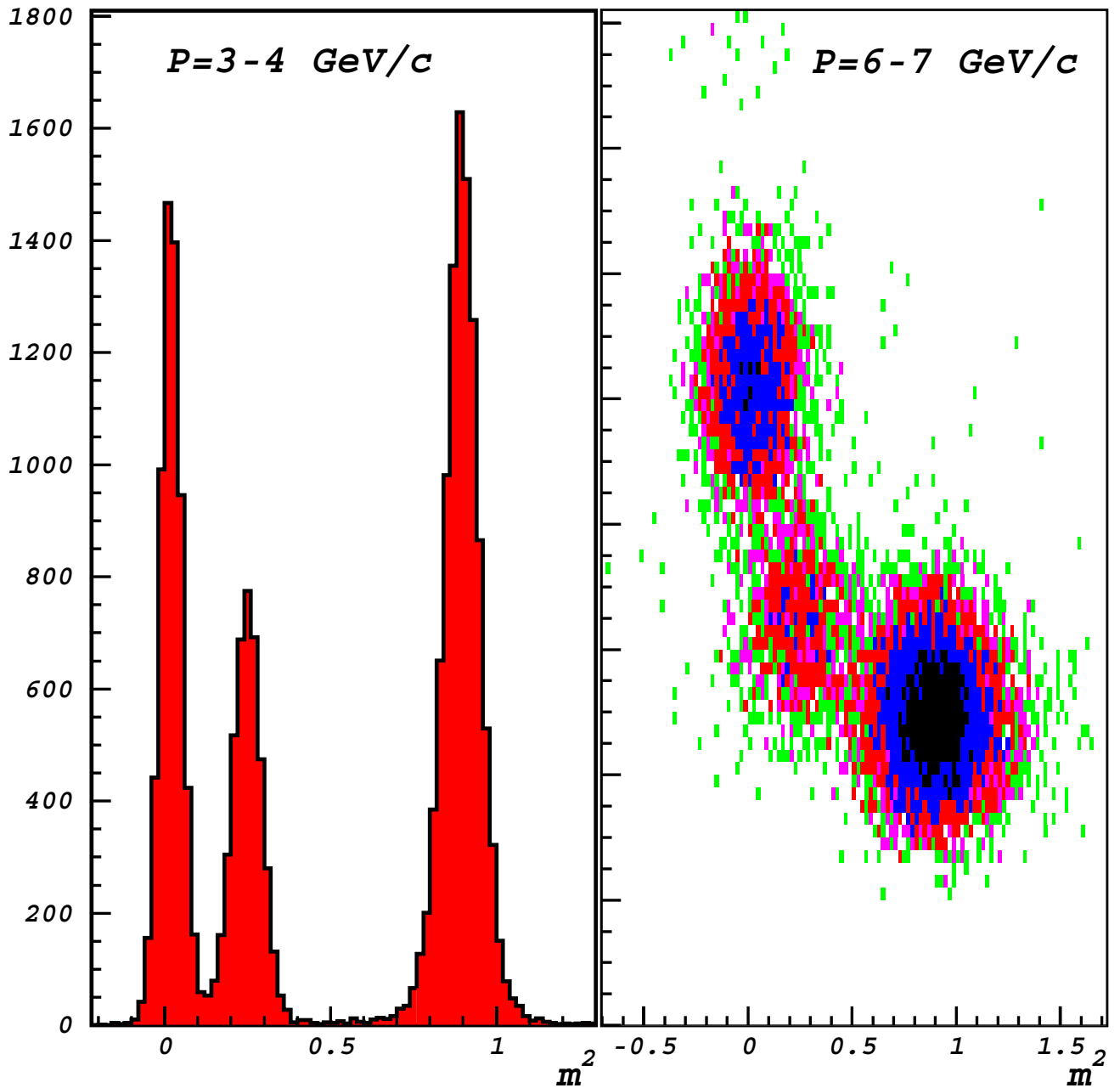
TOF cuts:

- multyhits
- edge cut (1mm)
- QDC cut ($0.8 < \text{QDC} < 1.6$)(1.75 for low momentum)

TOFL eff. = 70%

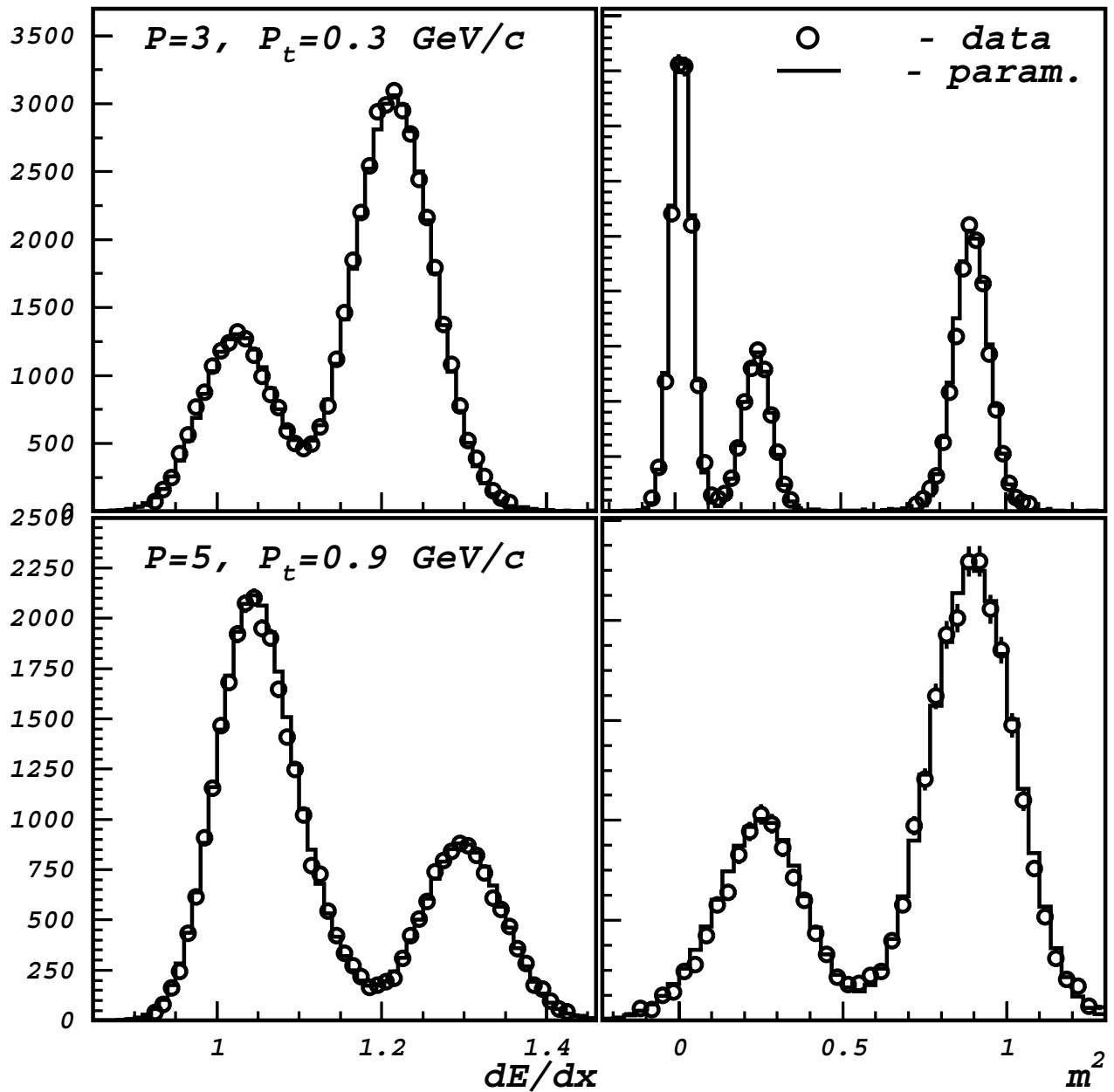
TOF performance (30 AGeV)

- Calibration done ($\sigma_{TOF} < 80$ ps)
- Corrected TOF avail. (by plugin)
- Constants should be OK for the 20 AGeV data

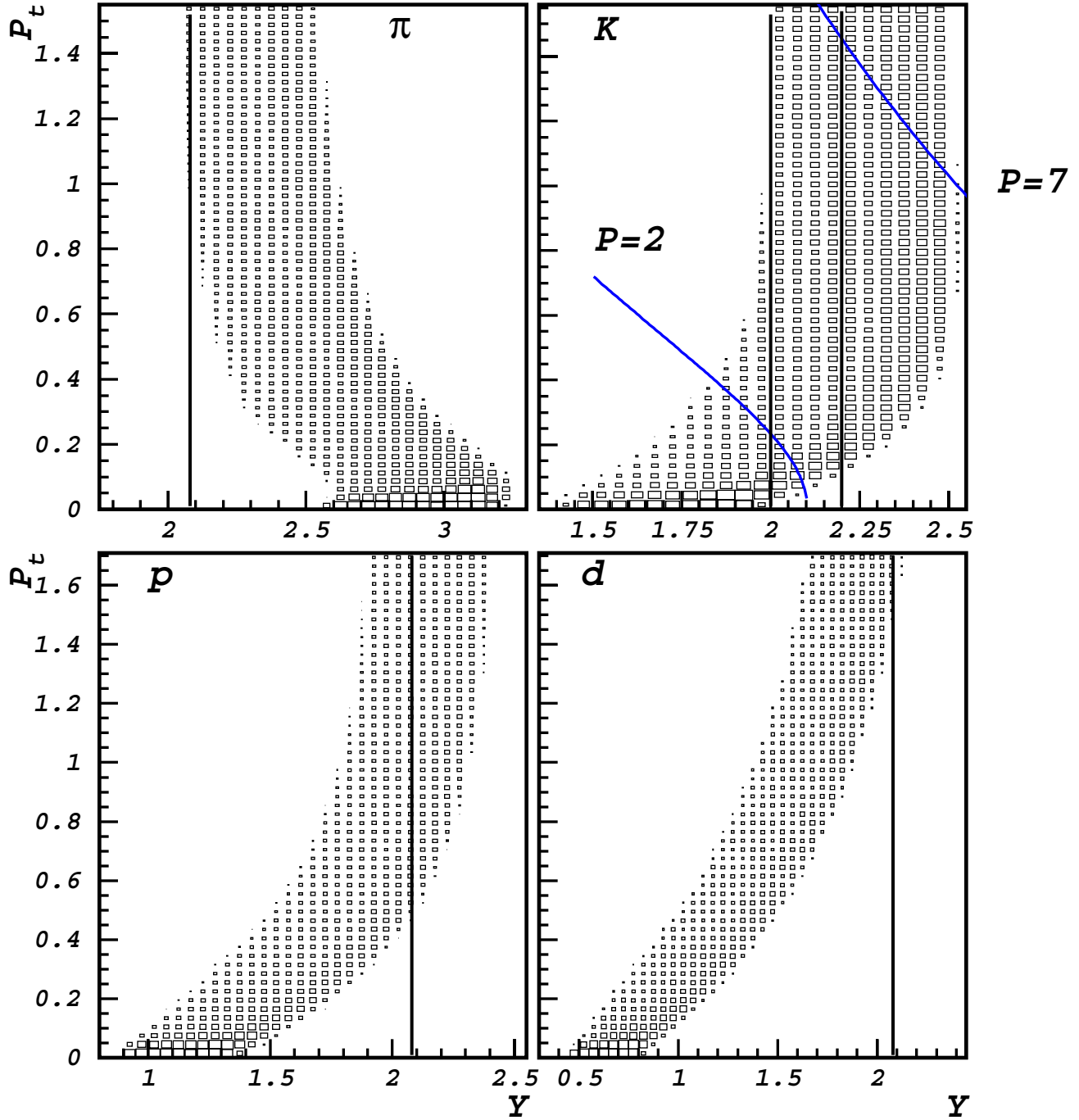


Analysis procedure (30 AGeV)

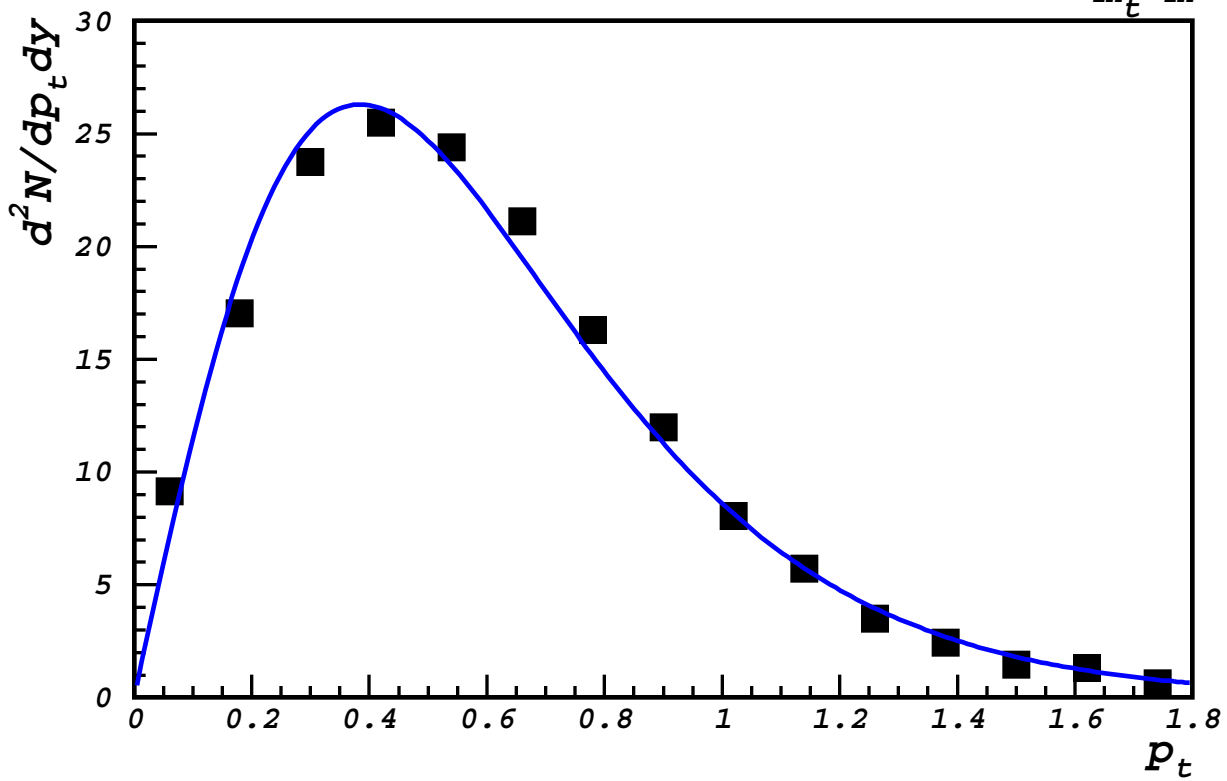
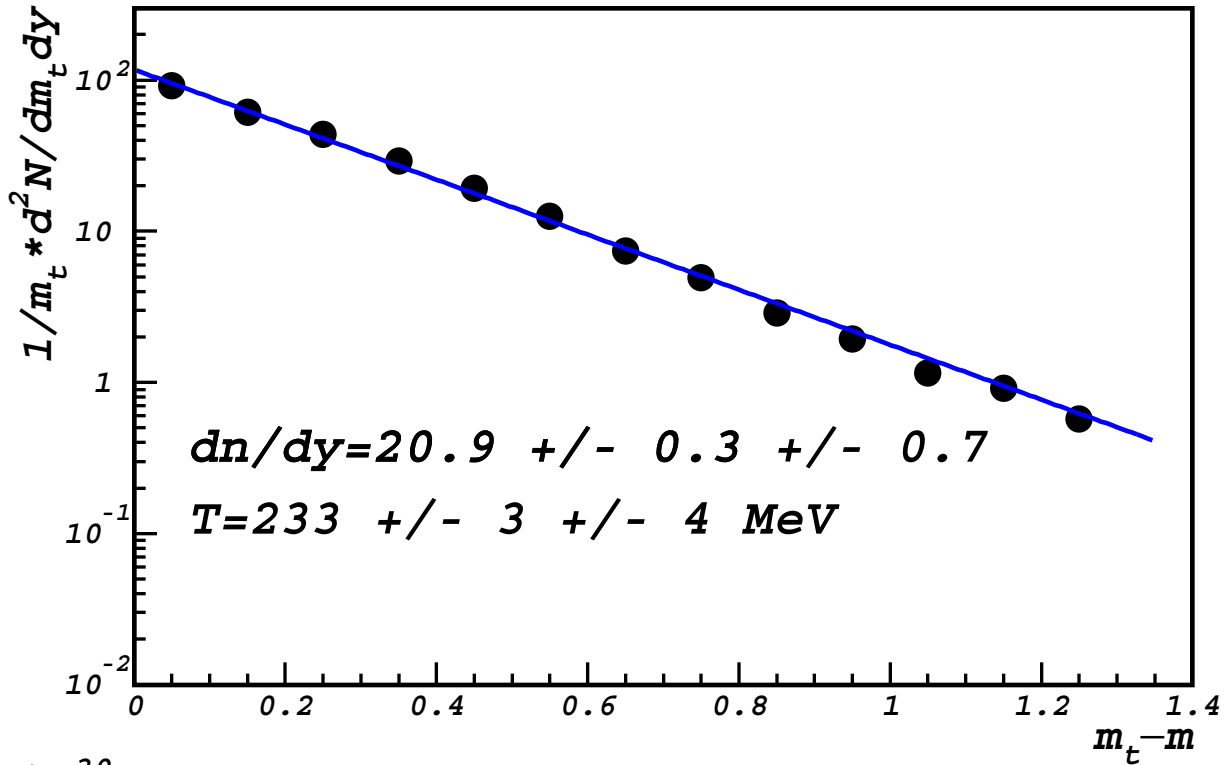
- Track & TOF quality cuts
- $(P - P_t)$ binning ($\Delta P=1, \Delta P_t=0.2$ GeV/c)
- $(dE/dx-m^2)$ - parameterisation
- Corrections eval.



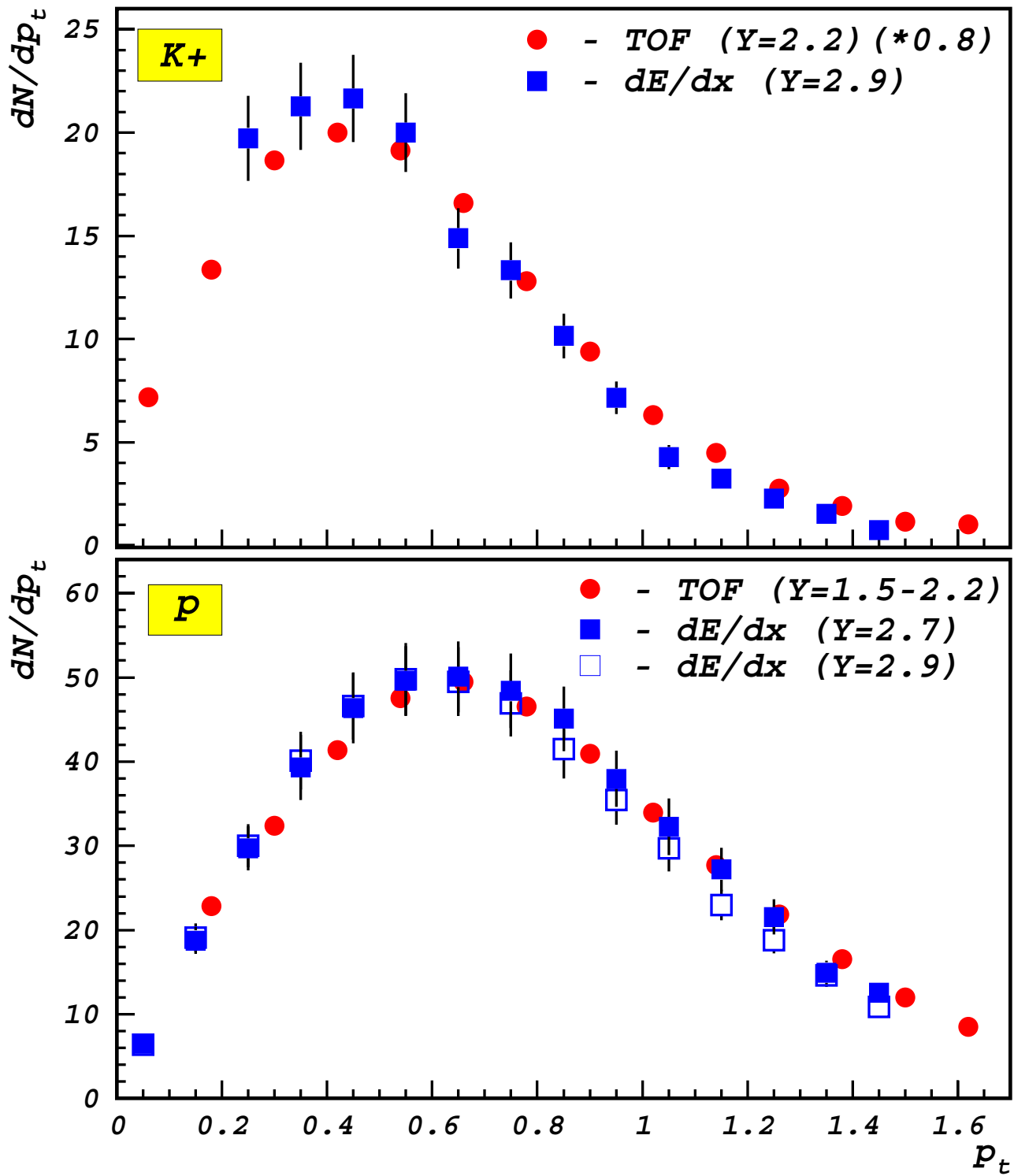
TOF acceptance (30 GeV)



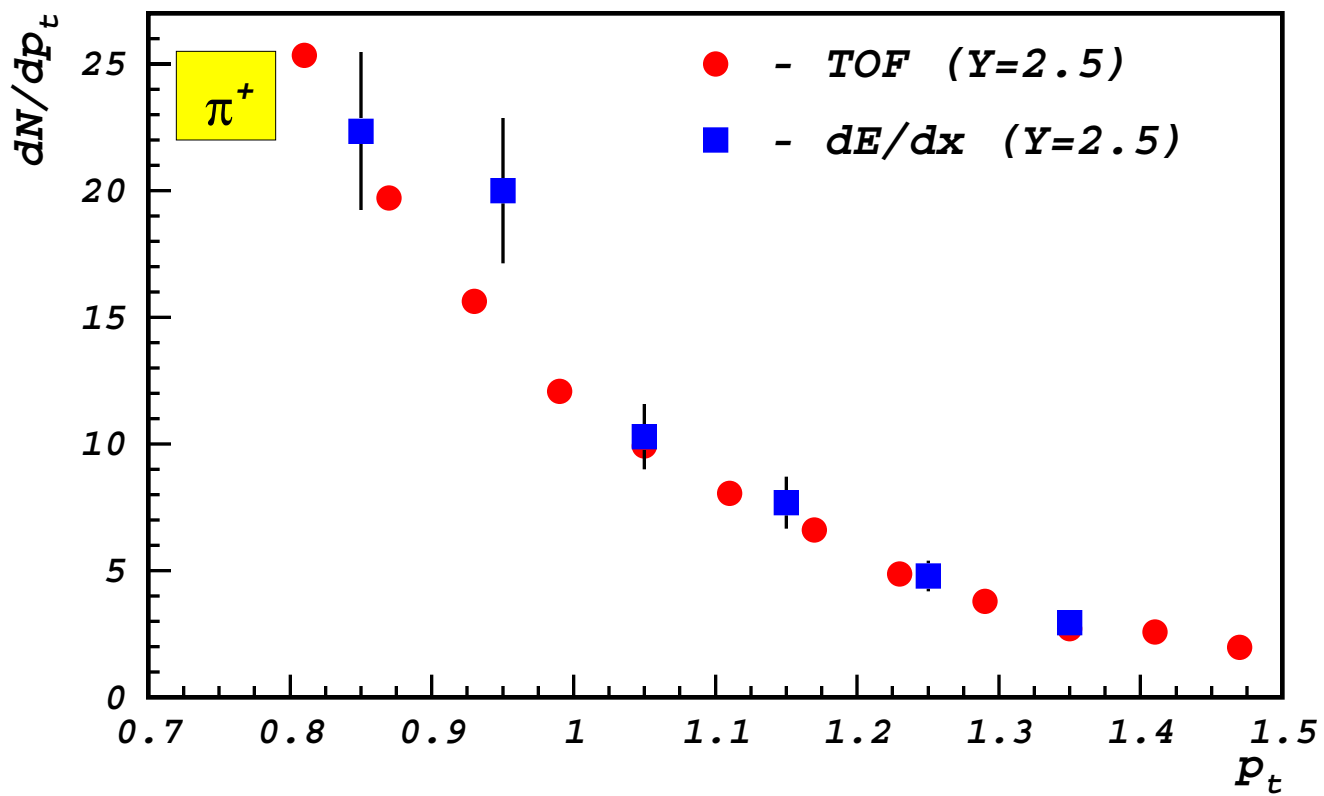
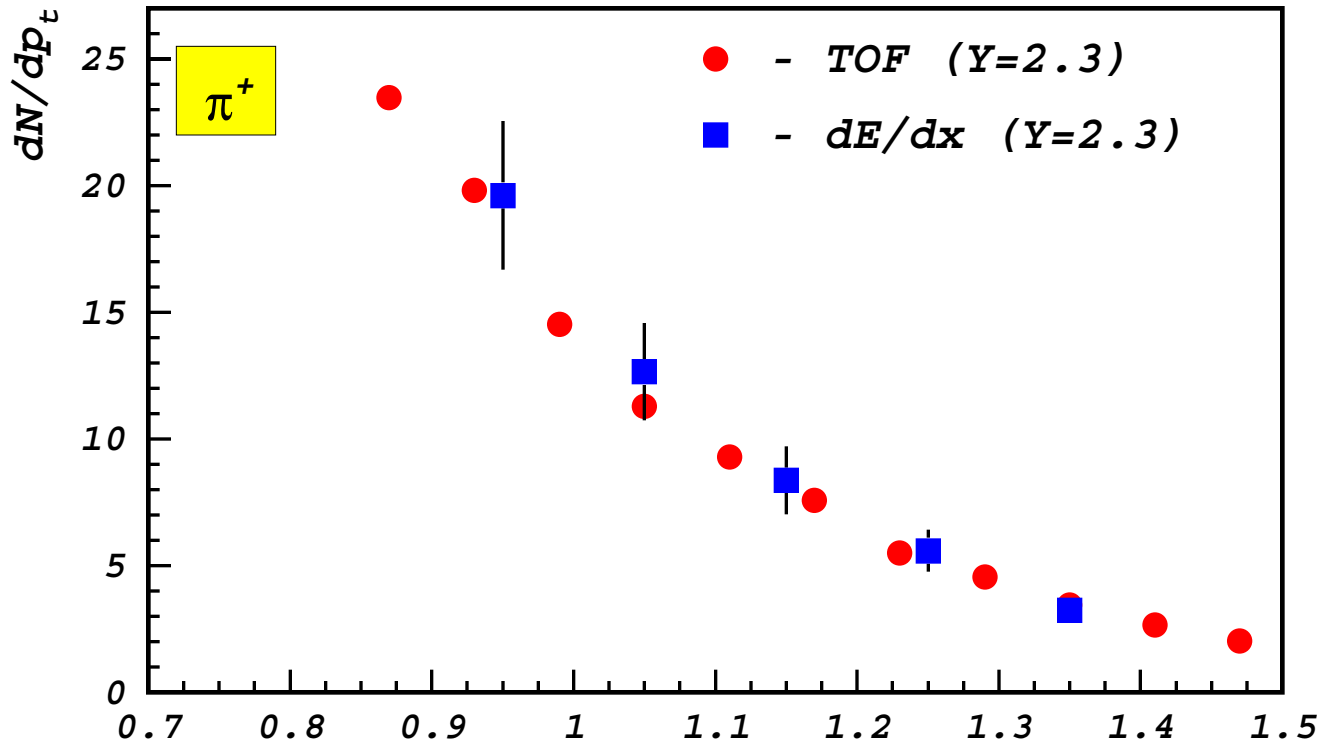
TOF (30 AGeV). Kaon+ (2.0 < Y < 2.2)



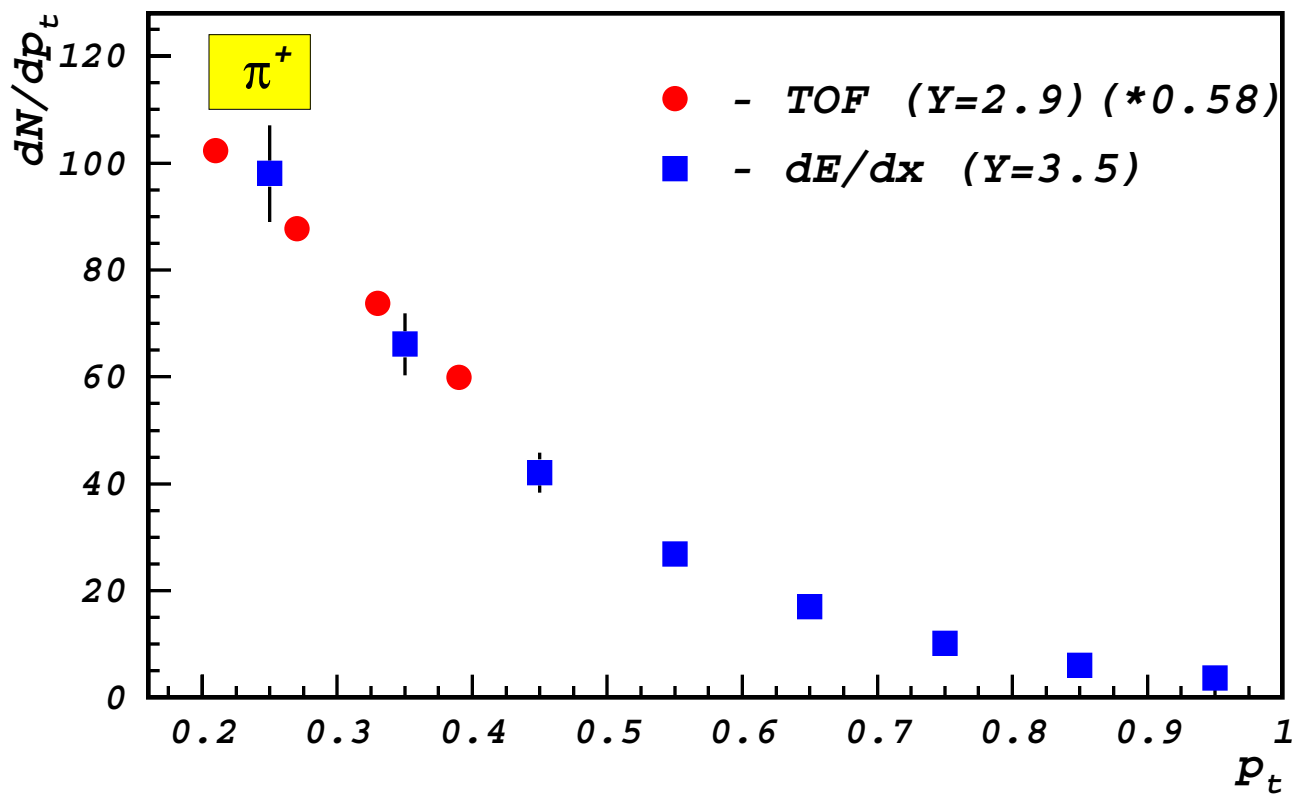
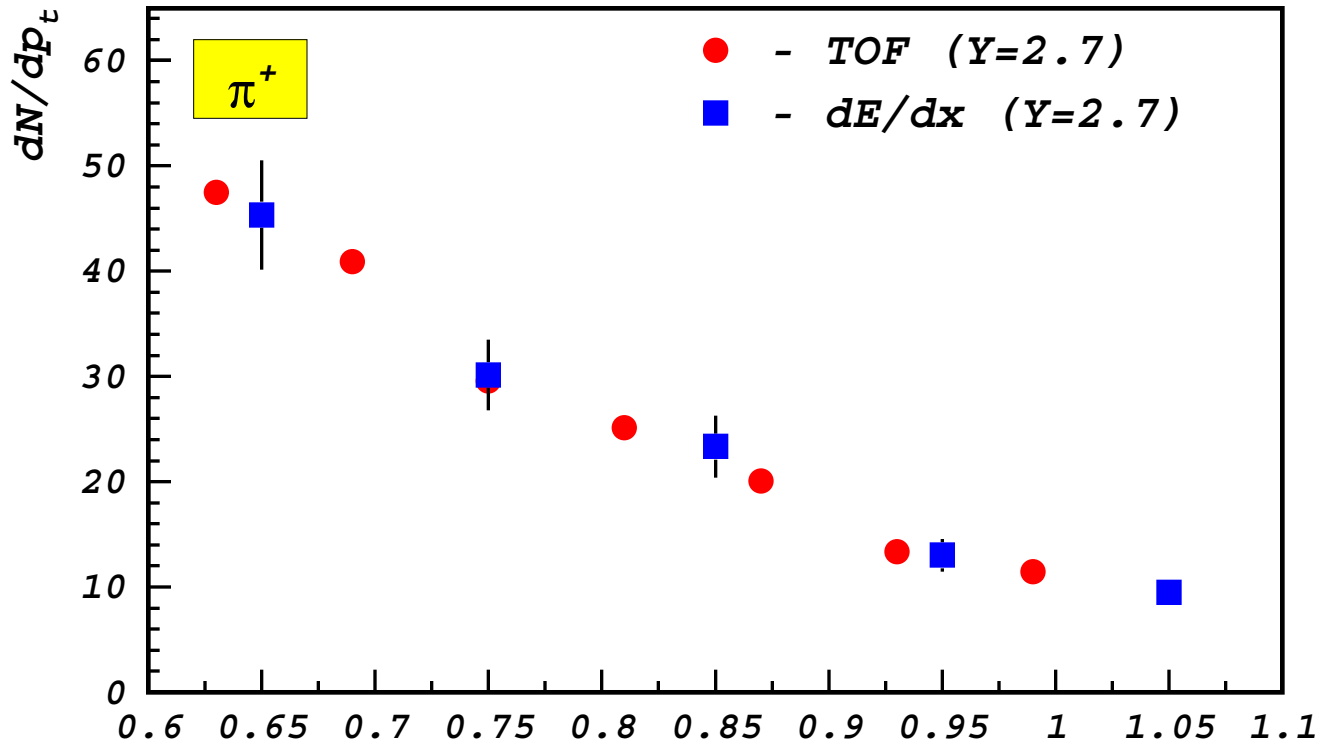
TOF-dE/dx comparison (30 GeV)



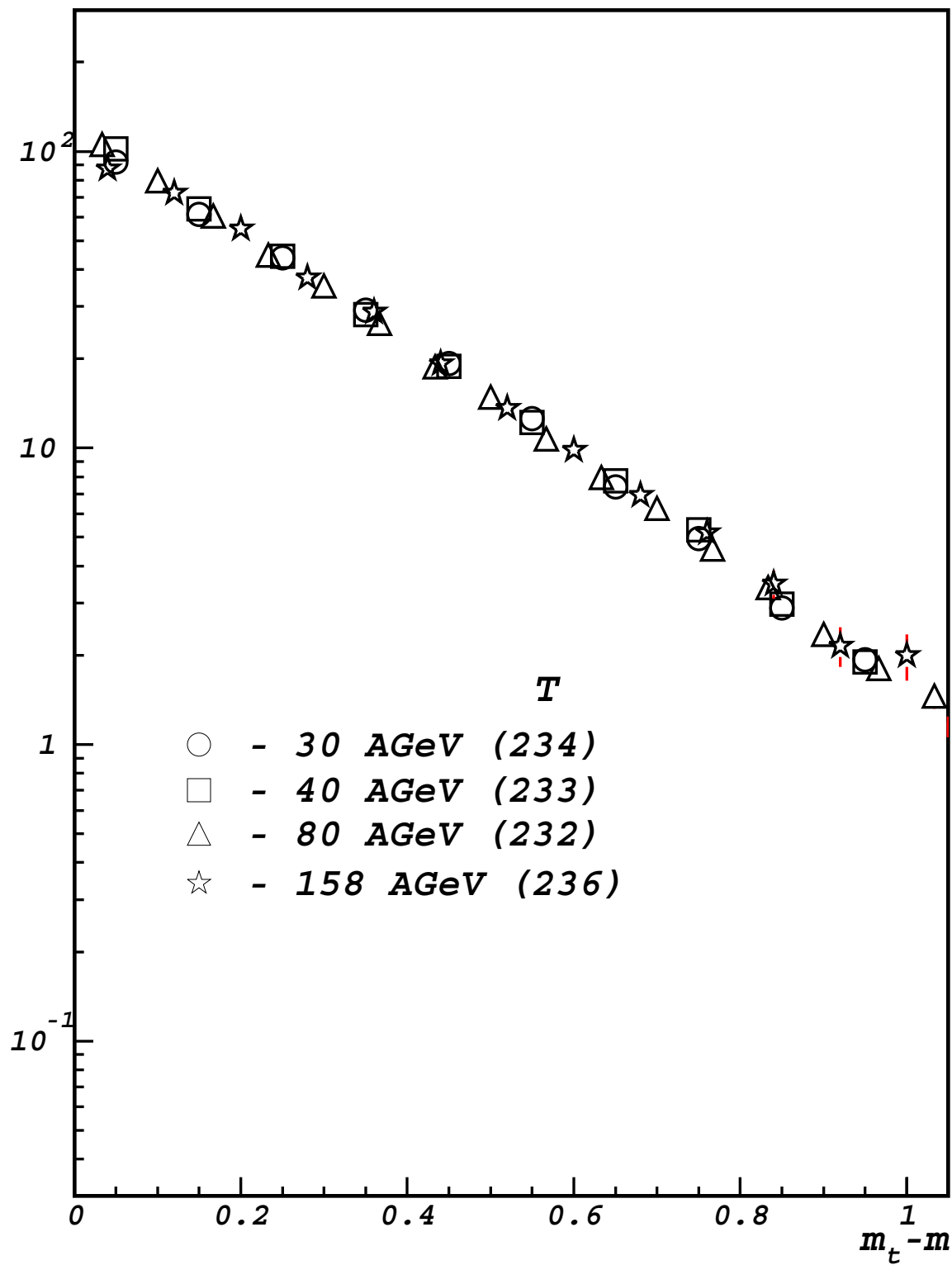
TOF-dE/dx comparison (30 GeV)



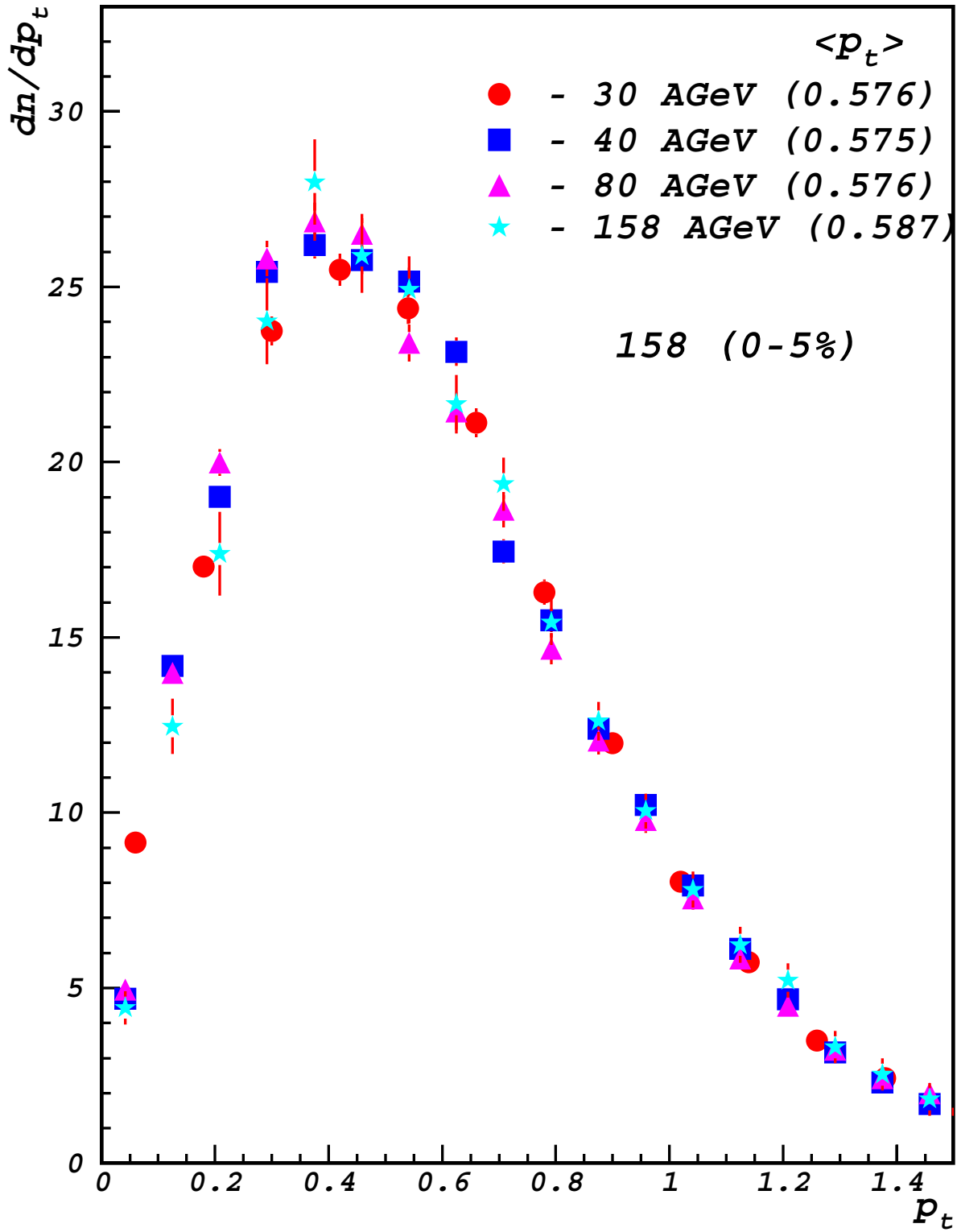
TOF-dE/dx comparison (30 GeV)



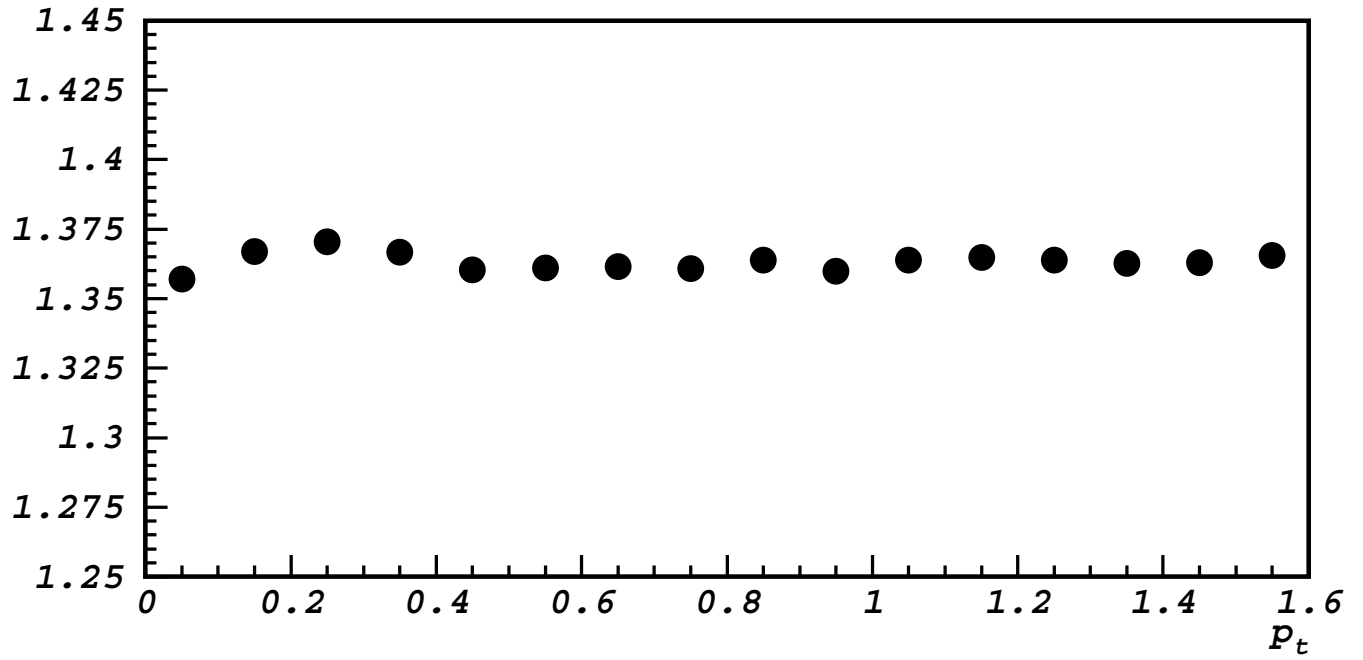
K⁺ m_t-spectra (30-158 AGeV) at midrap.



K⁺ p_t-spectra (30-158 AGeV) at midrap.



Corr. factor (TOF cuts, midrapid.)



Correction	$\Delta dn/dy(\%)$	$\Delta T(\text{MeV})$
Identification	1%	1.5
TOF quality cuts	1.5%	2.3÷3
Decay (GEANT)	0	0
$N_{hit} > 3$ cut (*)	1÷2 %	2
Total	≈ 0.7	5

(*) Variation of \mathbf{p} , $\mathbf{K}+$ yield at $N_h > 4,5,6,7\dots$

Summary:

- 30 AGeV K⁺ analysed
- K⁺ yield is the same as at 40 AGeV
- Slope parameter (K⁺)-spectra seems to be constant at 30-158 GeV

To Do:

- **p** spectra (feeddown)
- **d** spectra
- **B₂**-business...
- Preparation for the 20 AGeV analysis (calibration, acceptance, etc.)