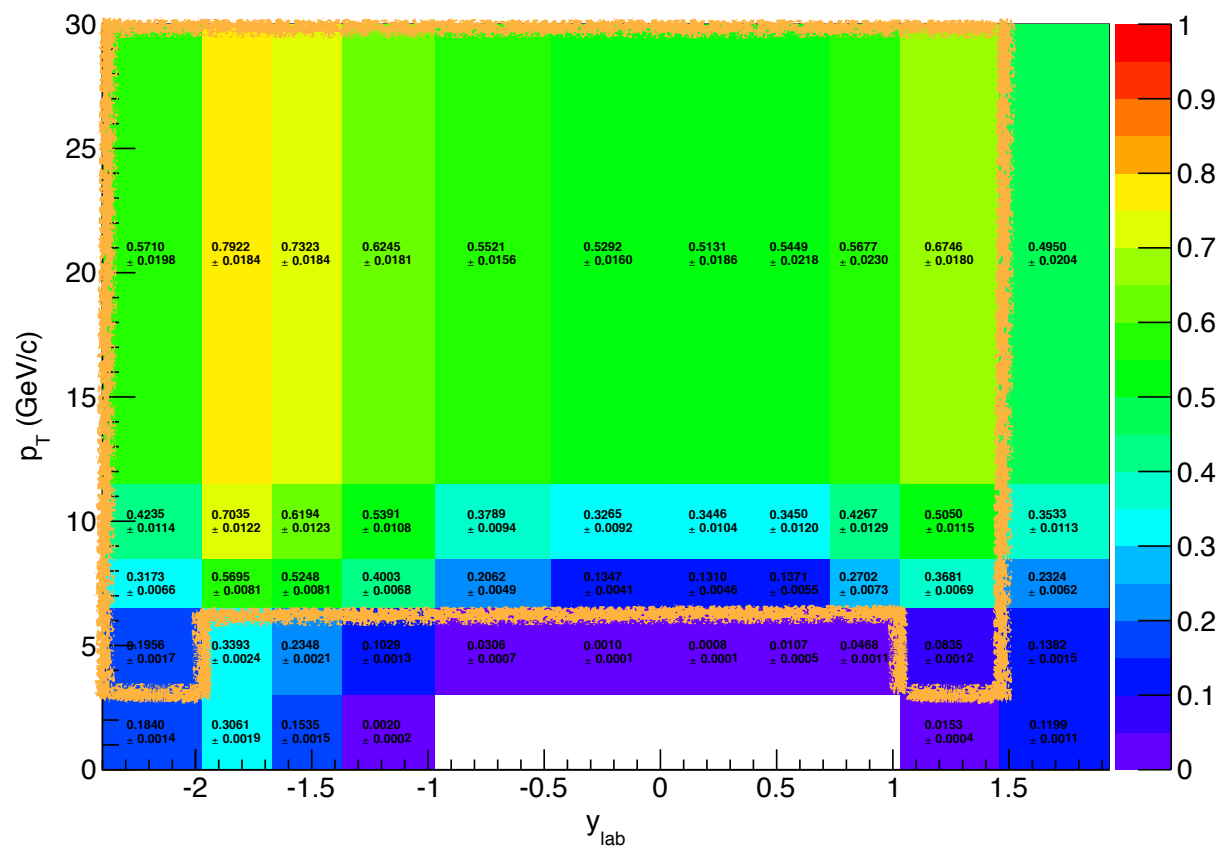# J/ψ in pPb
– double differential binning & multiplicity dependence

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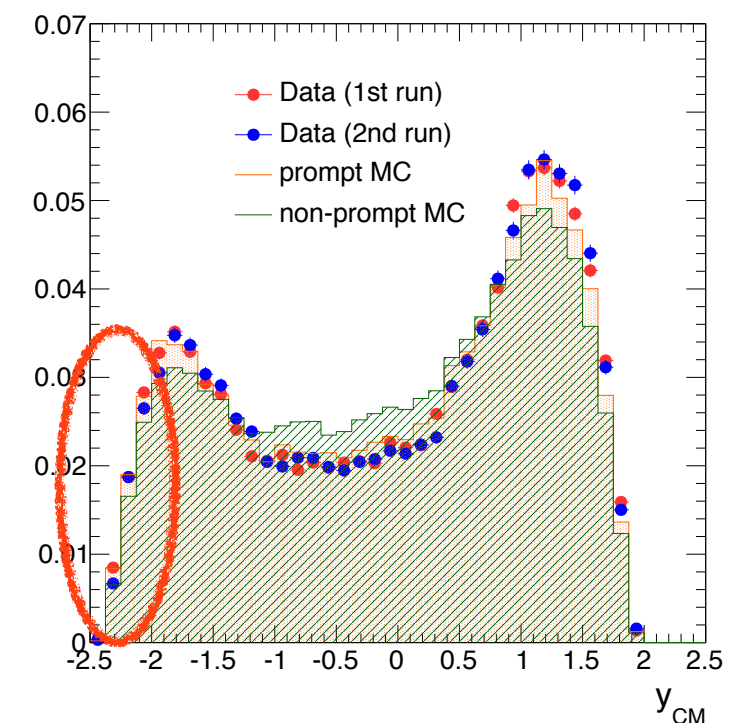## Double differential binning for R_{FB}

- 5 $|y_{CM}|$ bins : 0, 0.5, 0.9, 1.2, 1.5, 1.93
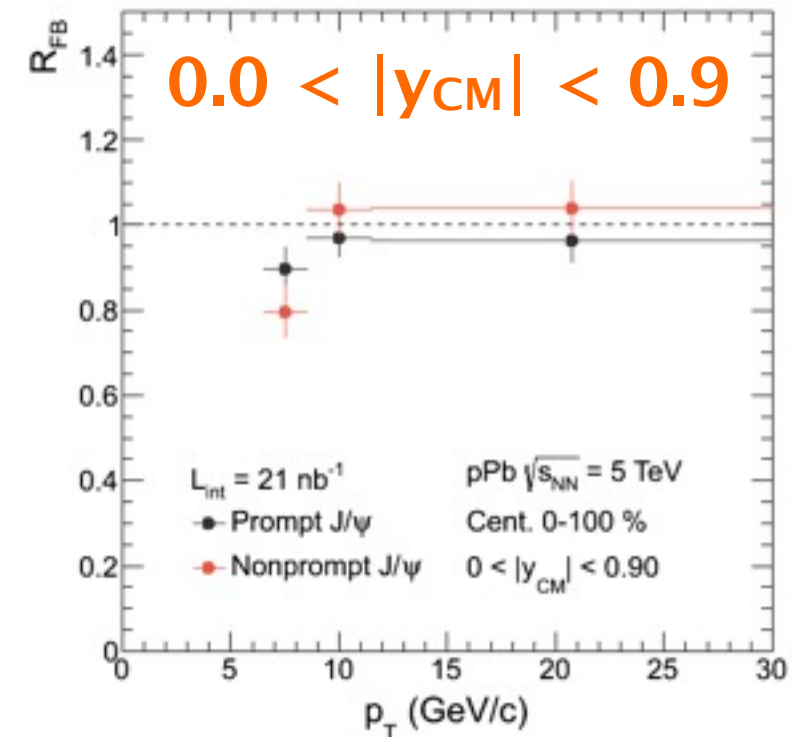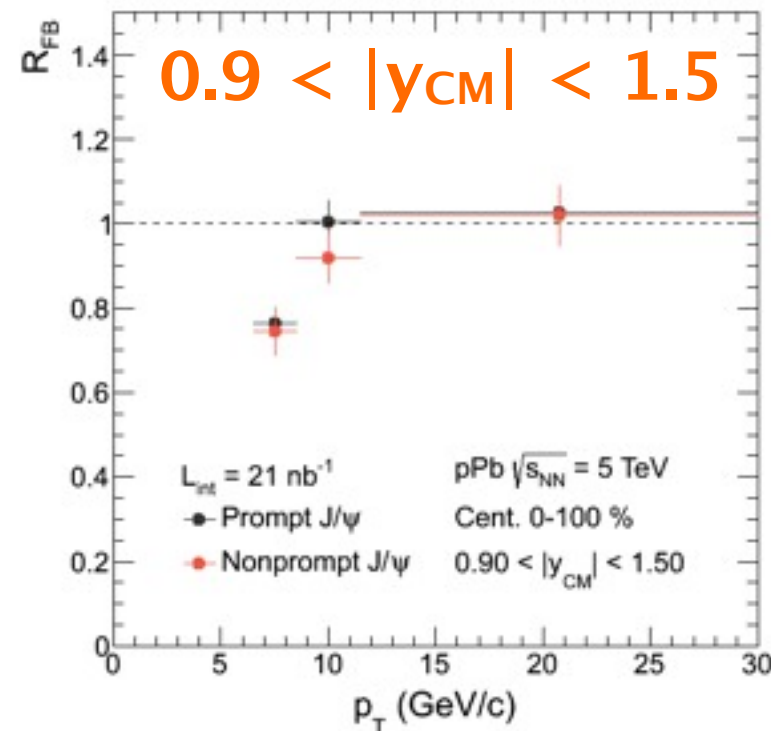- 4 p_T bins : (3), 6.5, 8.5, 11.5, 30 GeV/c

e.g.) Acceptance ———— : For R_{FB}

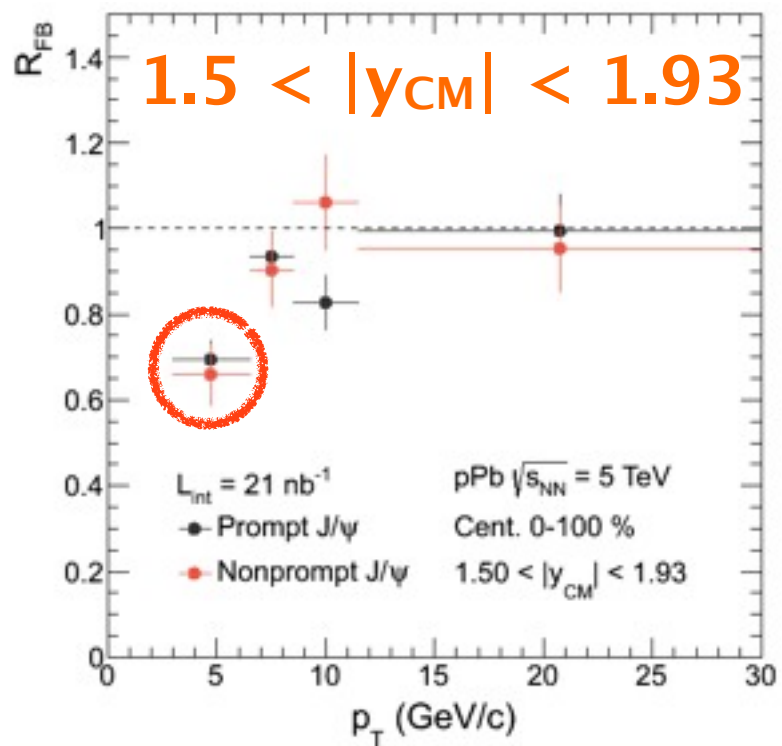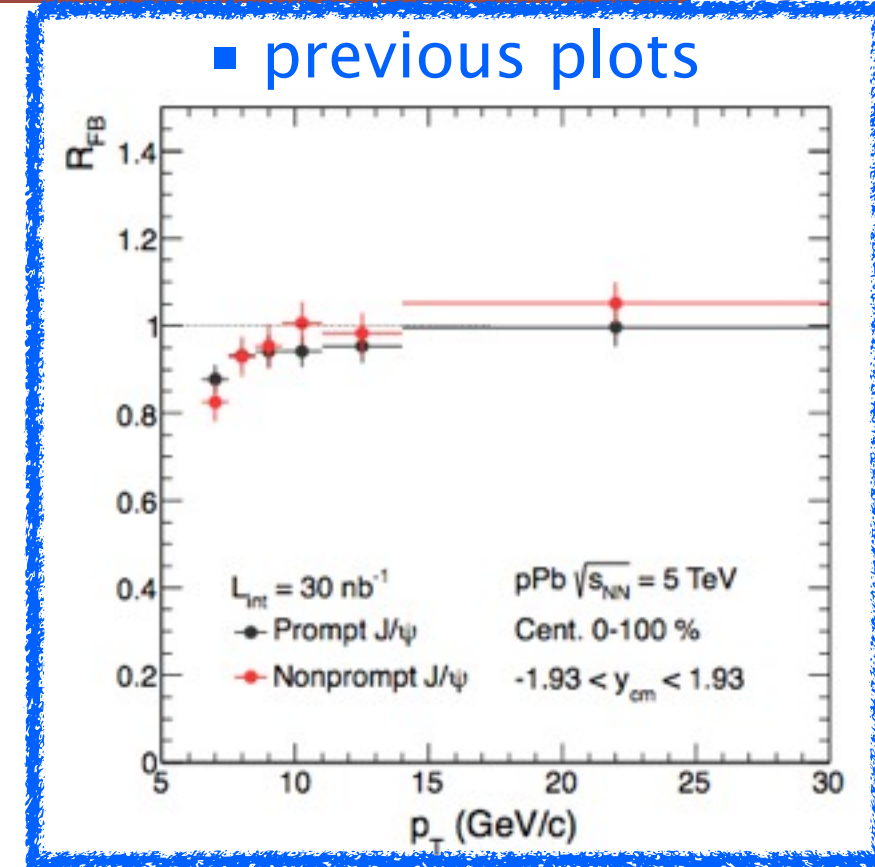| y_{CM}	[1st run] y_{lab}	[2nd run] y_{lab}
1.93	-2.4	2.4
1.5	-1.97	1.97
1.2	-1.67	1.67
0.9	-1.37	1.37
0.5	-0.97	0.97
0.0	-0.47	0.47
-0.5	0.03	-0.03
-0.9	0.43	-0.43
-1.2	0.73	-0.73
-1.5	1.03	-1.03
-1.93	1.46	-1.46

- single muon eta cut $-2.4 < y_{CM} < 1.93$ (according to MC)
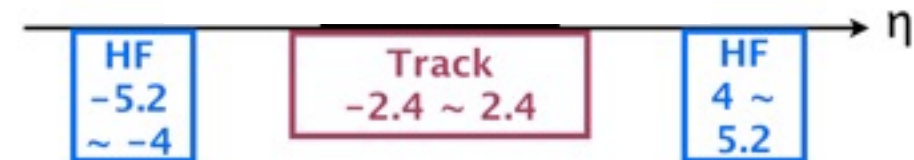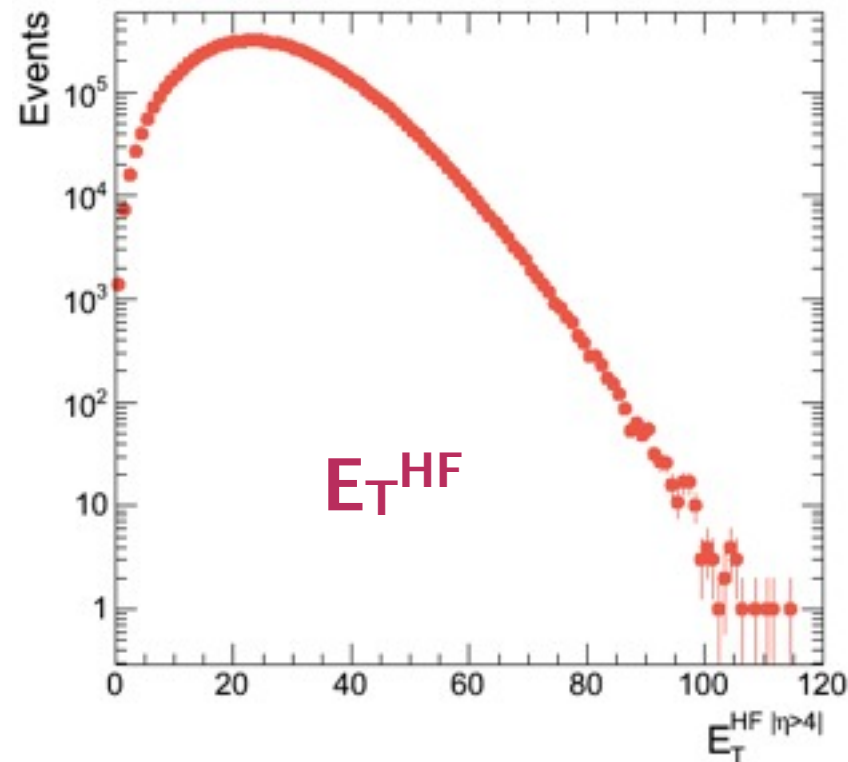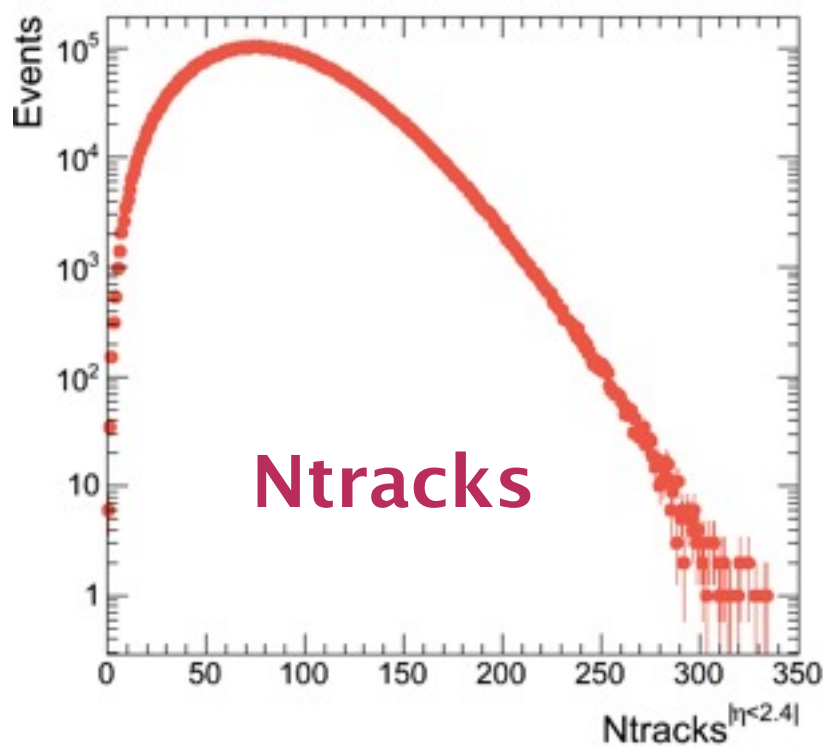
R_{FB} vs p_T

- **R_{FB} smaller for lower p_T**
- Fitting procedure is still going on!

■ previous plots

$1.5 < |y_{CM}| < 1.93$

$0.9 < |y_{CM}| < 1.5$

$0.0 < |y_{CM}| < 0.9$

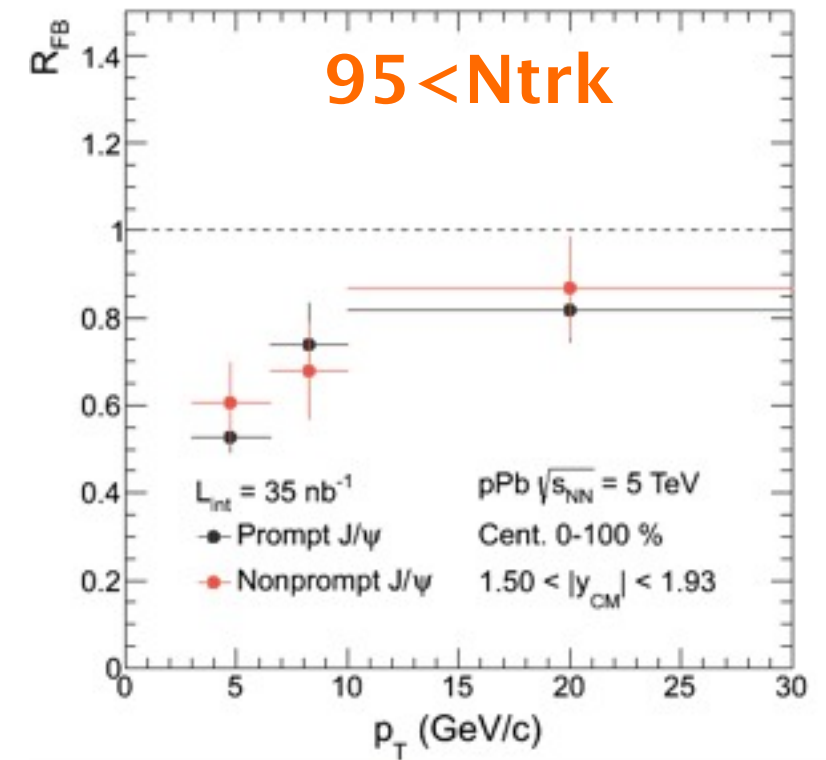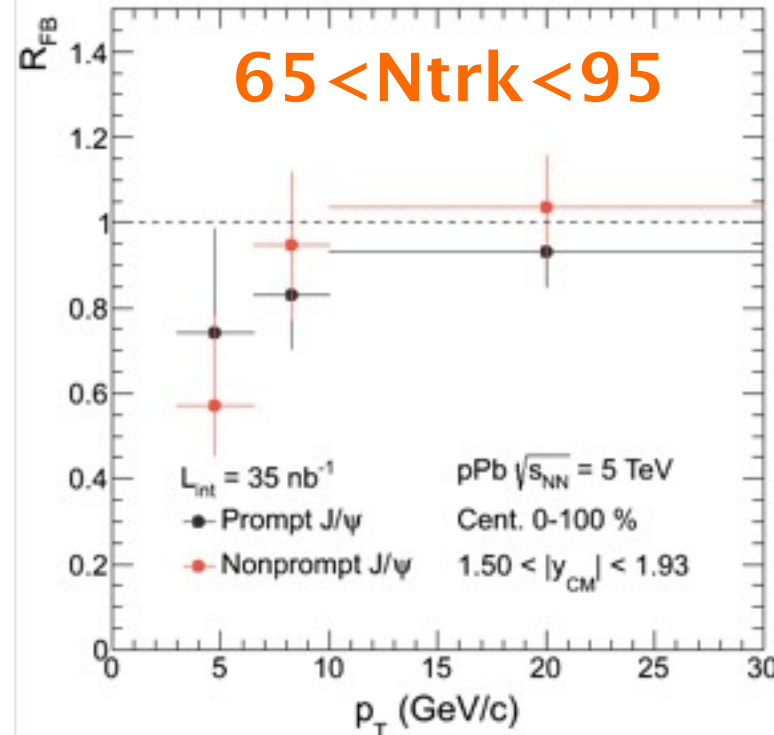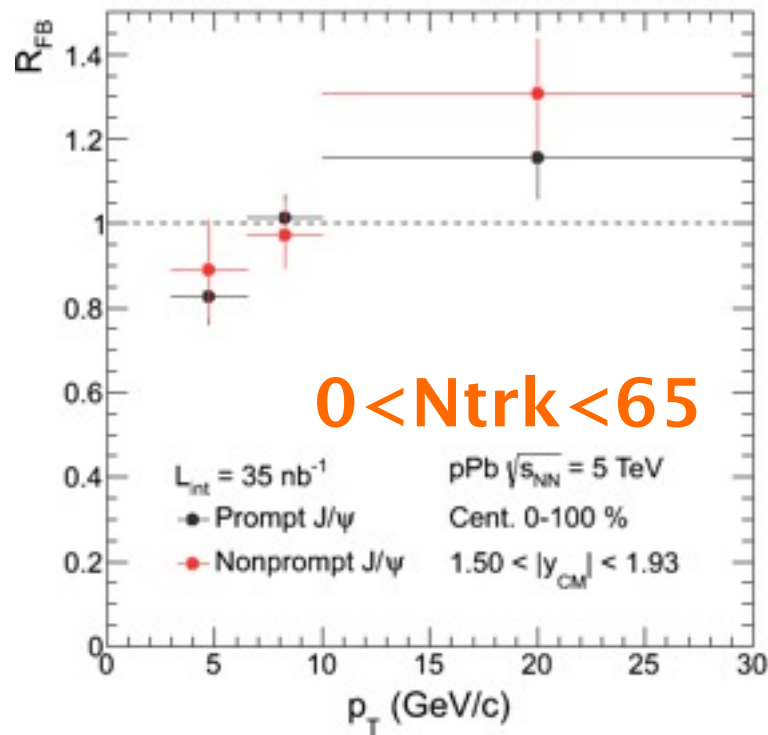- ⦀ **Two variables for multiplicity**
  - ■ **1. $N_{tracks}^{|\eta<2.4|}$** (binning : 0, 65, 95, 350)
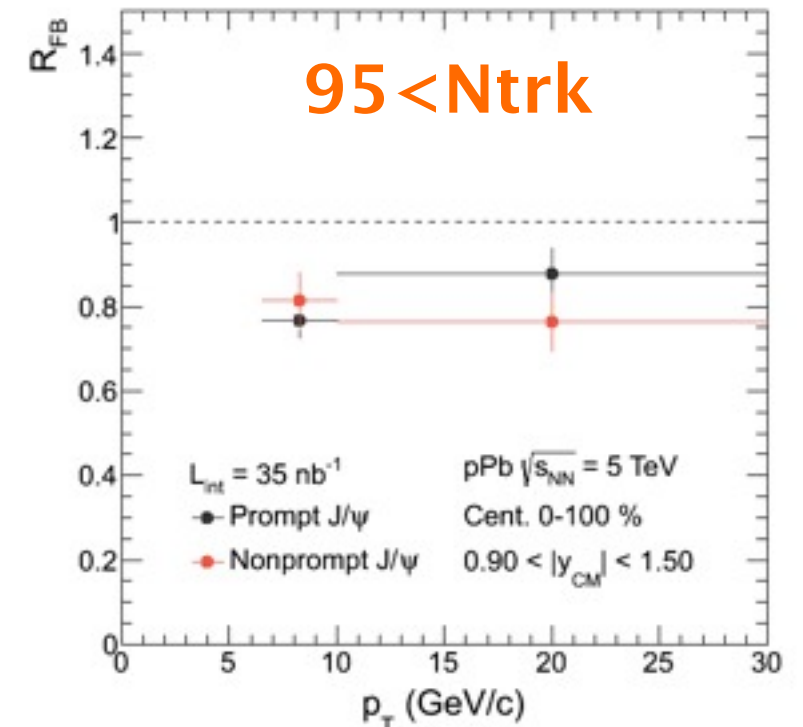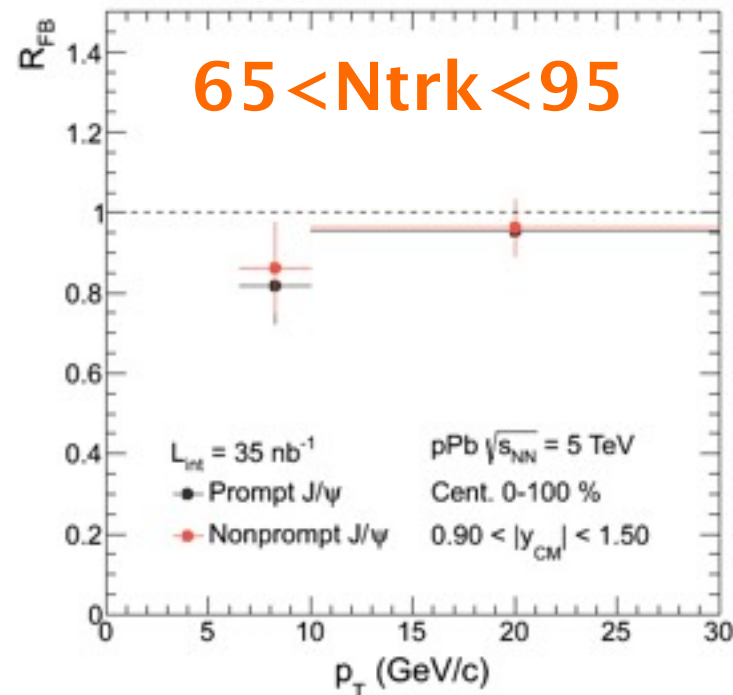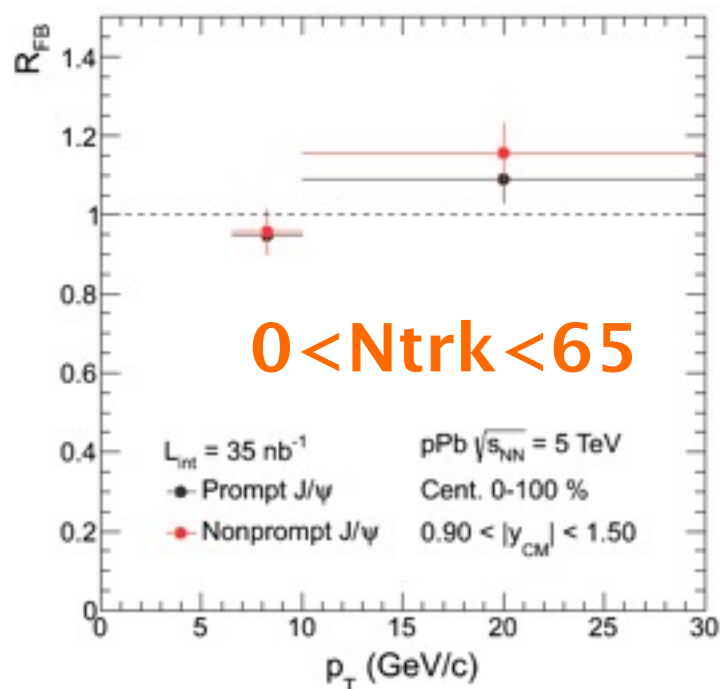 - ■ **2. $E_T^{HF\ |\eta>4|}$** (binning : 0, 20, 30, 120 GeV) – Yongsun

- ■ Fraction for each bins are 30%, 30%, and 40% in <u>muon sample.</u>
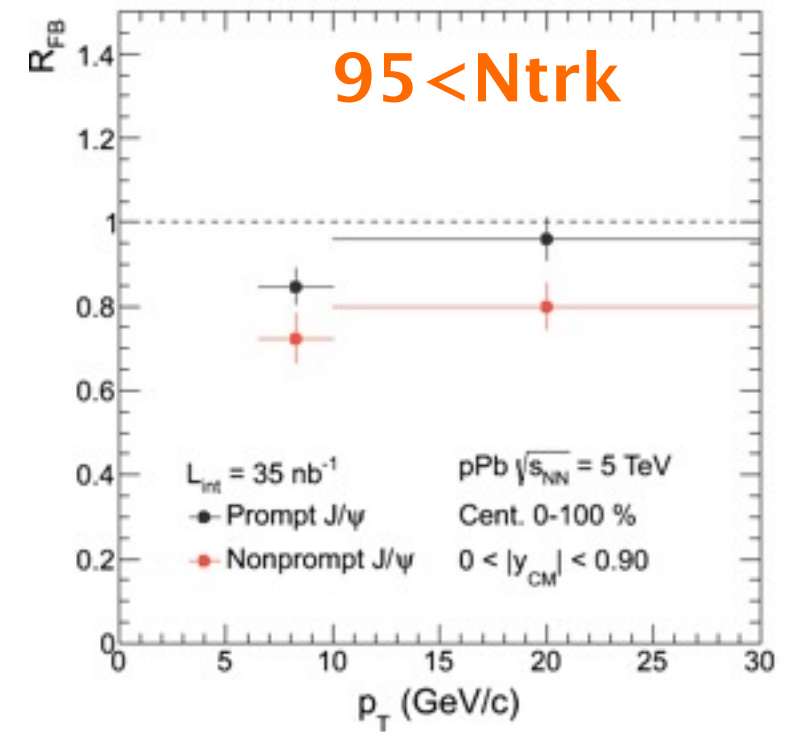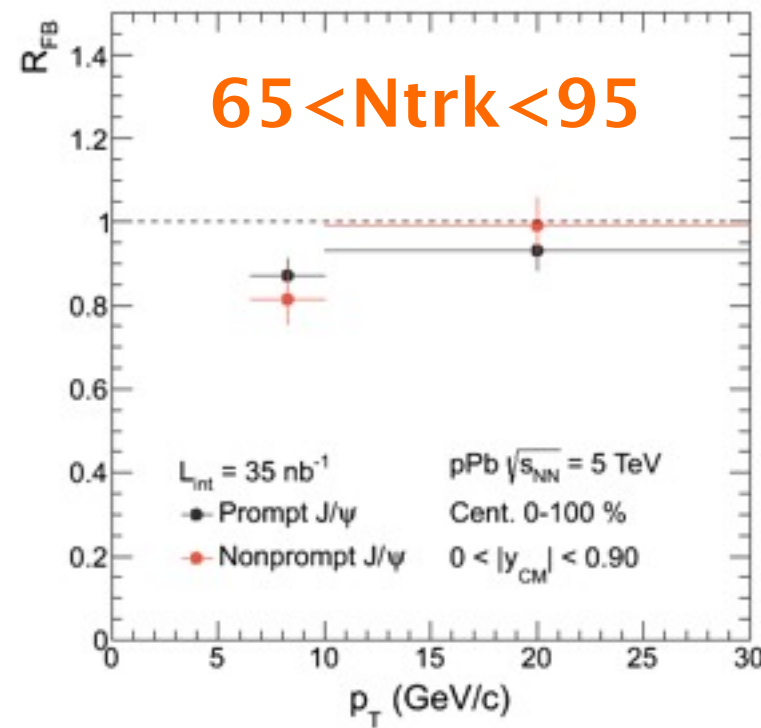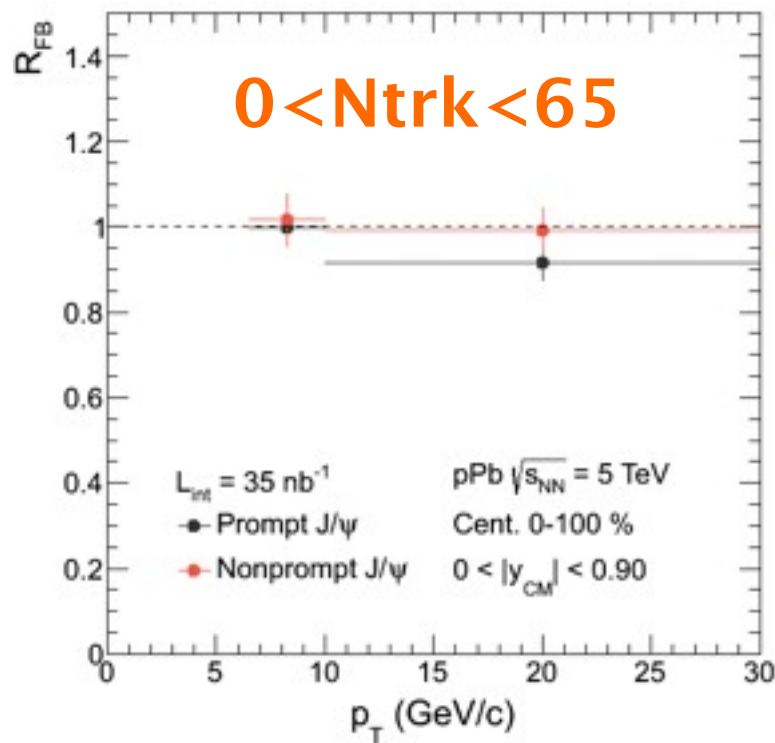- ■ Fraction in min–bias sample will be checked soon.

- $1.5 < |y_{CM}| < 1.93$, $3.0 < p_T < 30.0$ GeV/c

- $0.9 < |y_{CM}| < 1.5$, $6.5 < p_T < 30.0$ GeV/c

⊕ **0<|y$_{CM}$|<0.5, 6.5 < p$_T$ <30.0 GeV/c**

- R$_{FB}$ becomes smaller for lower p$_T$?
- R$_{FB}$ becomes smaller for higher multiplicity ?

- Fitting procedure is still going on!

- **work for the fitting & check R_{FB} vs rapidity**

- **Ctau Error range should be considered in efficiency calculation**

- **MC weighting from T&P – Kisoo**

- **Systematic uncertainties**

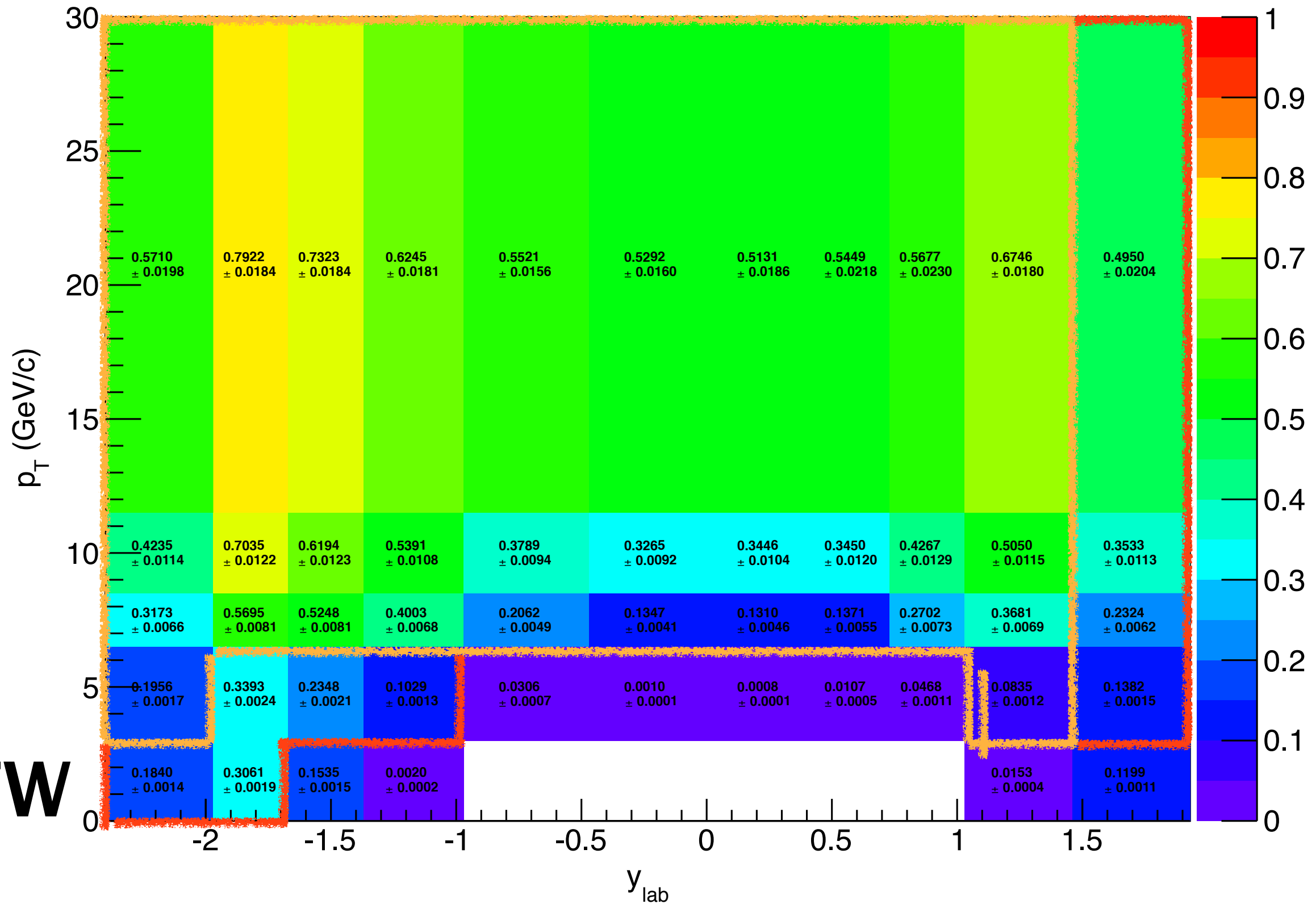# Backup

Acceptance (prompt)

Efficiency (prompt)   ———— : For R_{FB} ———— : For cross-section
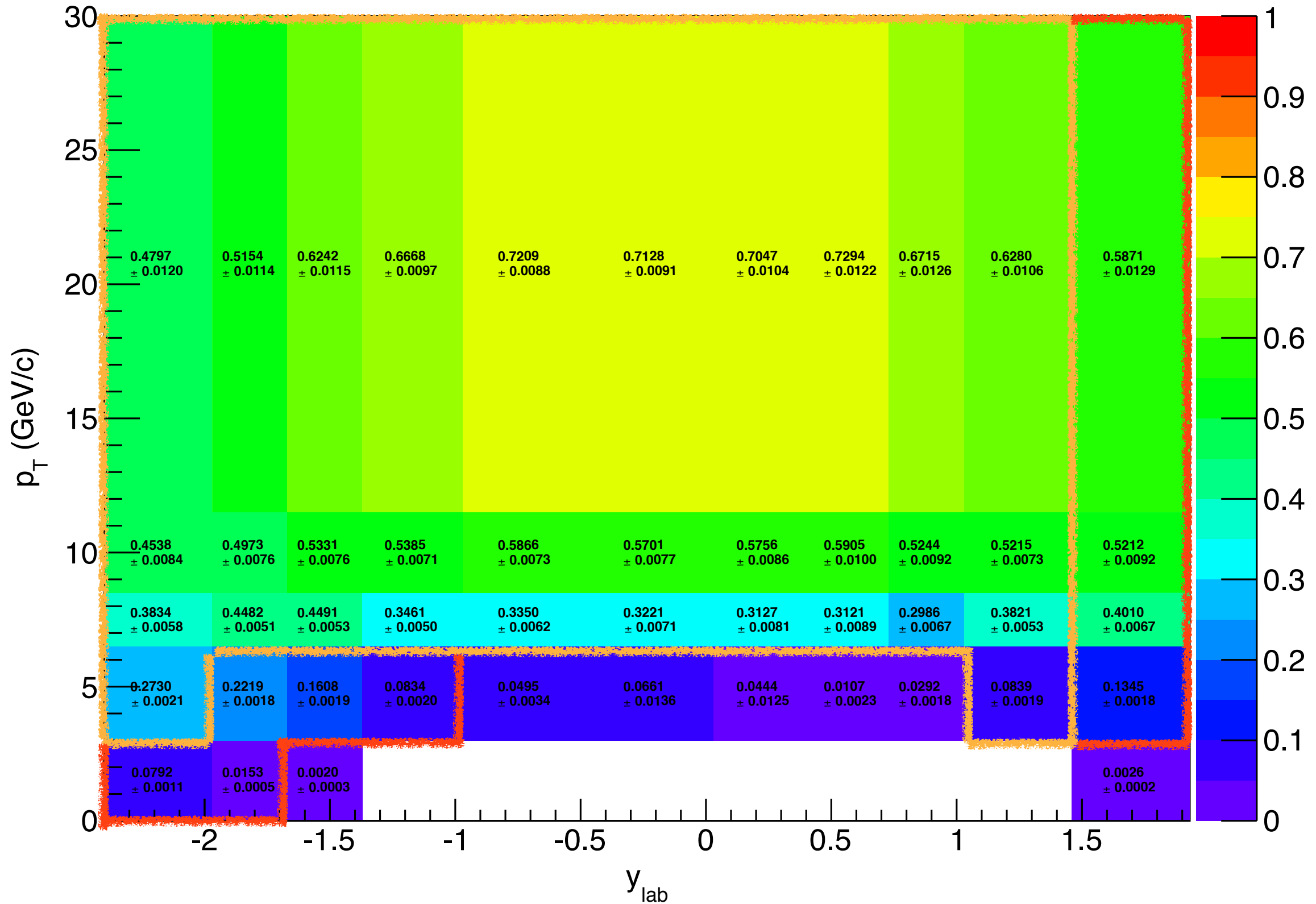
Efficiency (non-prompt) ━━━ : For R_{FB} ━━━ : For cross-section