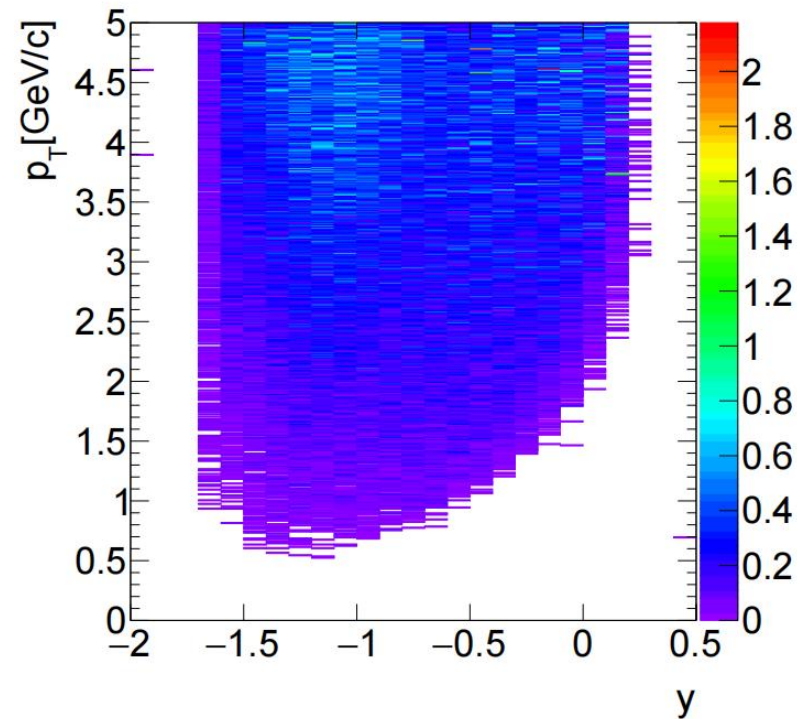


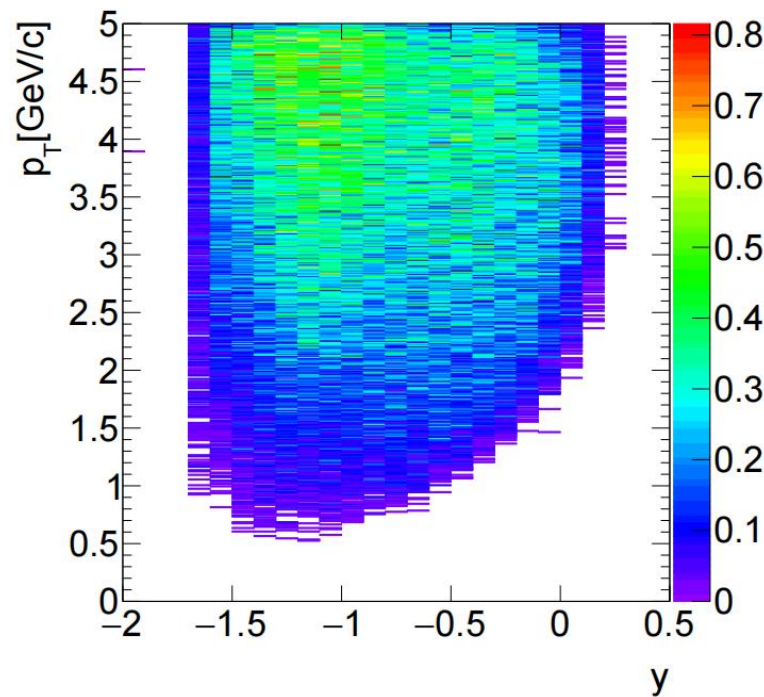
Update of signal reconstruction(${}^3_{\Lambda}H$) in Run2020 FXT Au-Au 5.2GeV

yulou

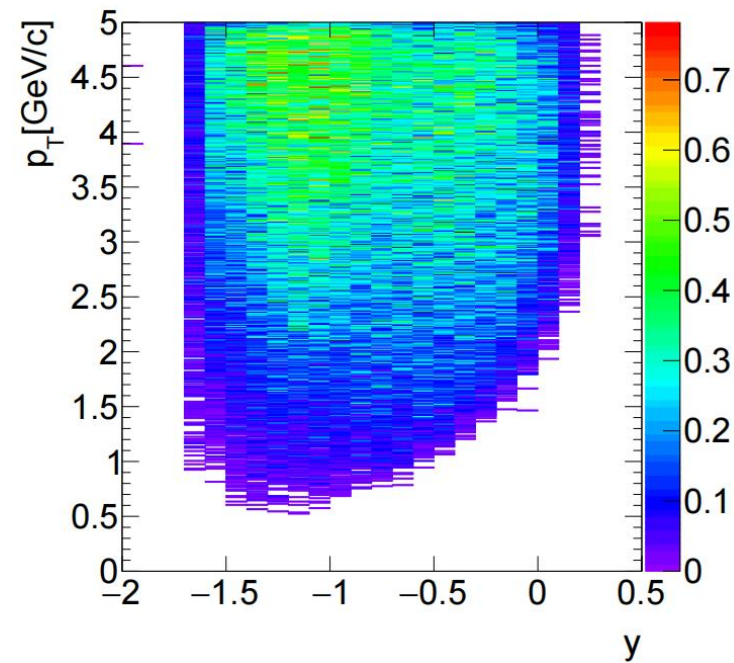
- part1: about efficiency of new data**
- part2: update of old data**



with pt_weight,rap_weight,lifetime_weight

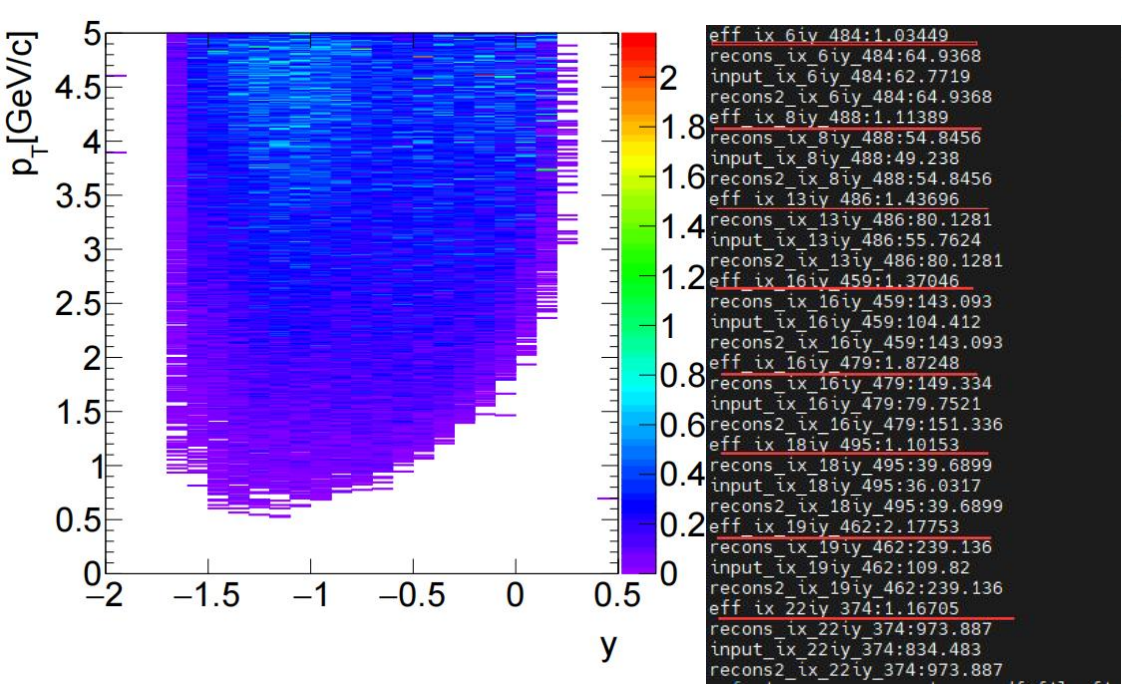


all weight=1

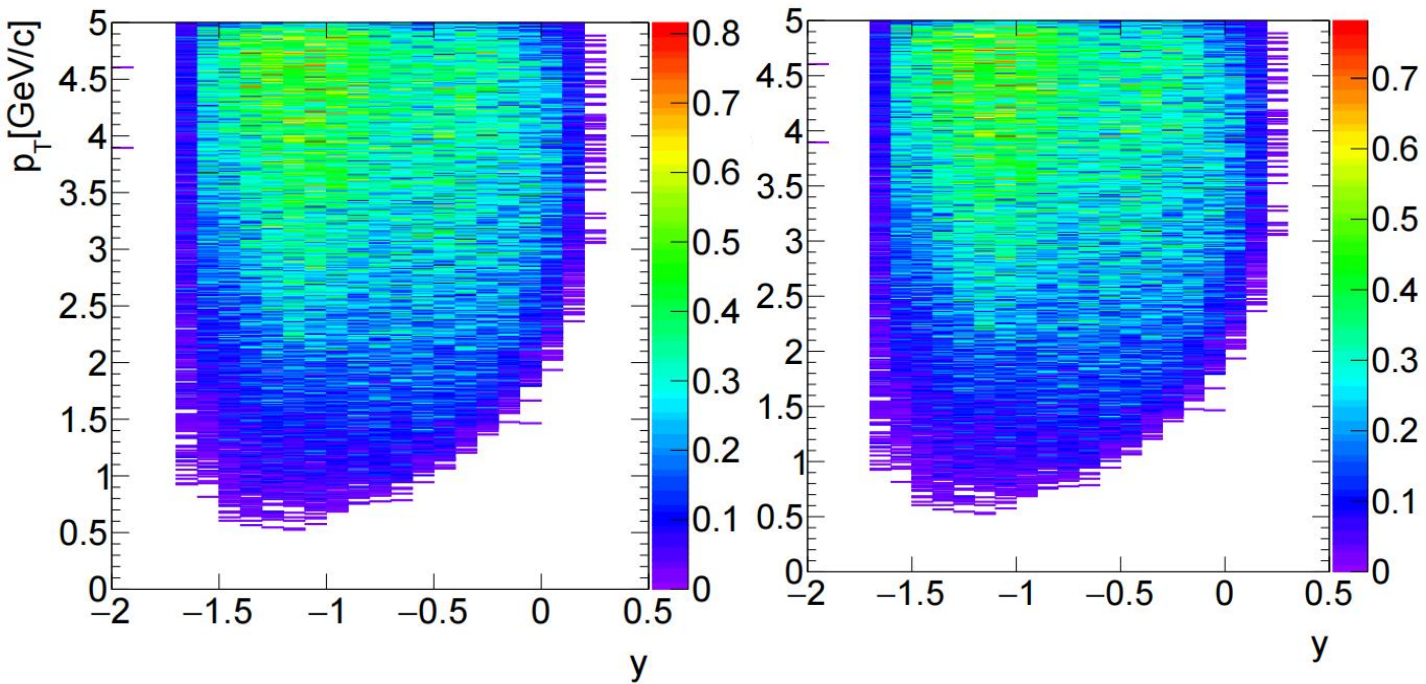


only pt_weight=1

efficiency of new data



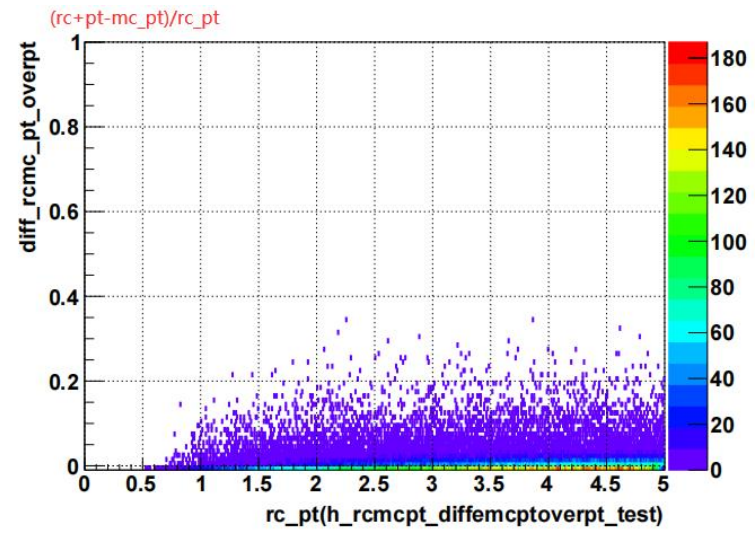
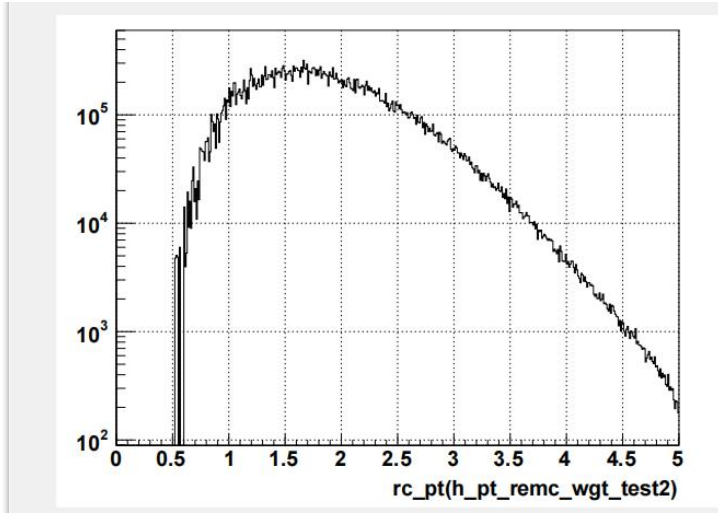
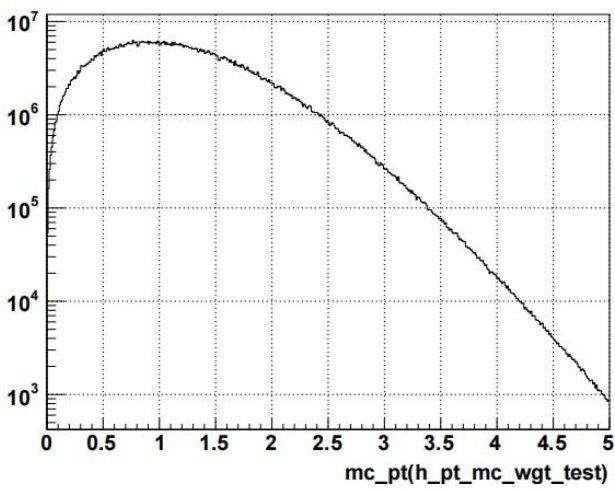
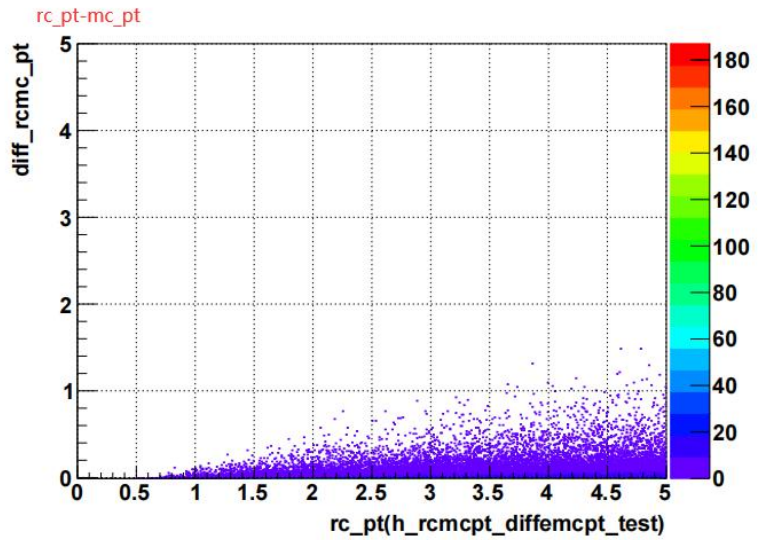
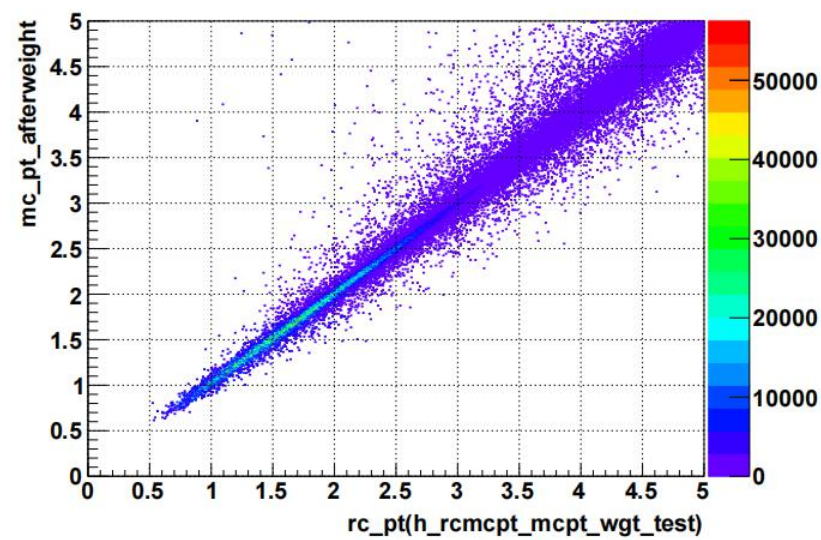
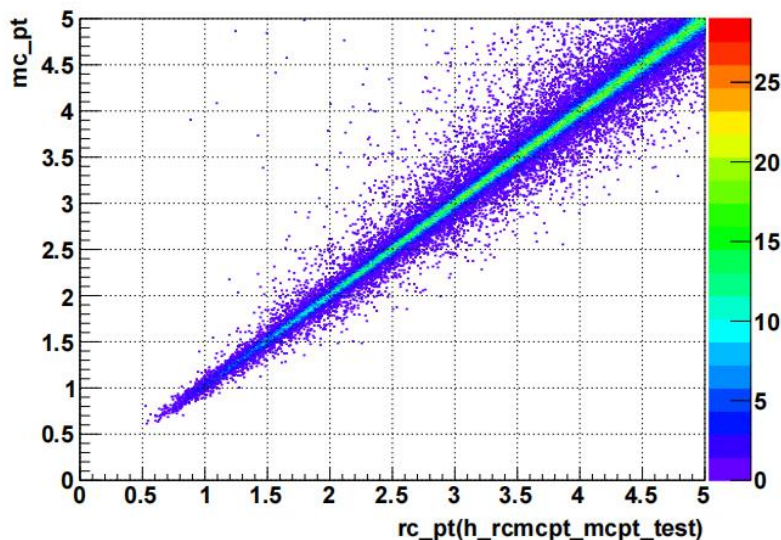
with pt_weight,rap_weight,lifetime_weight



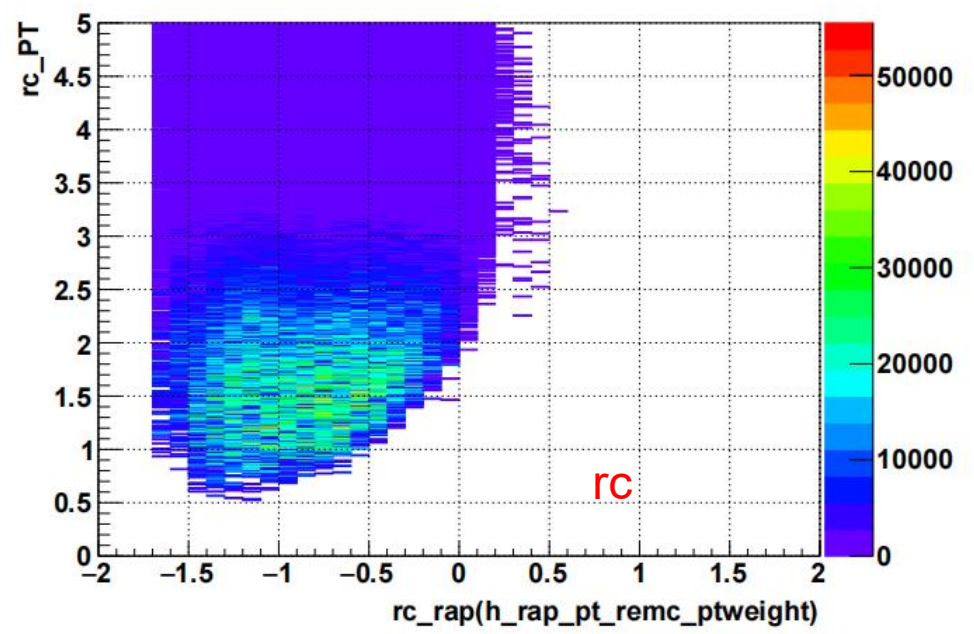
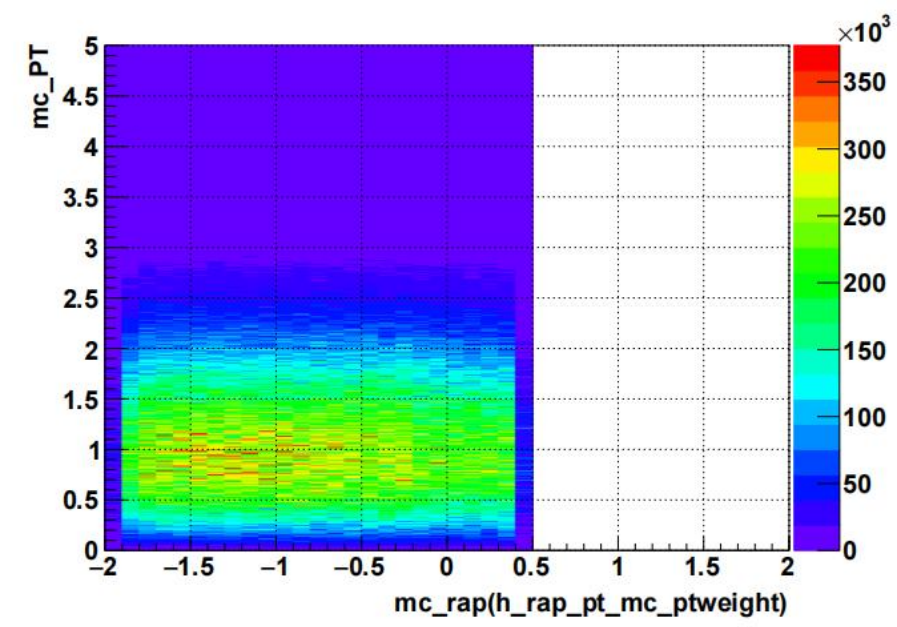
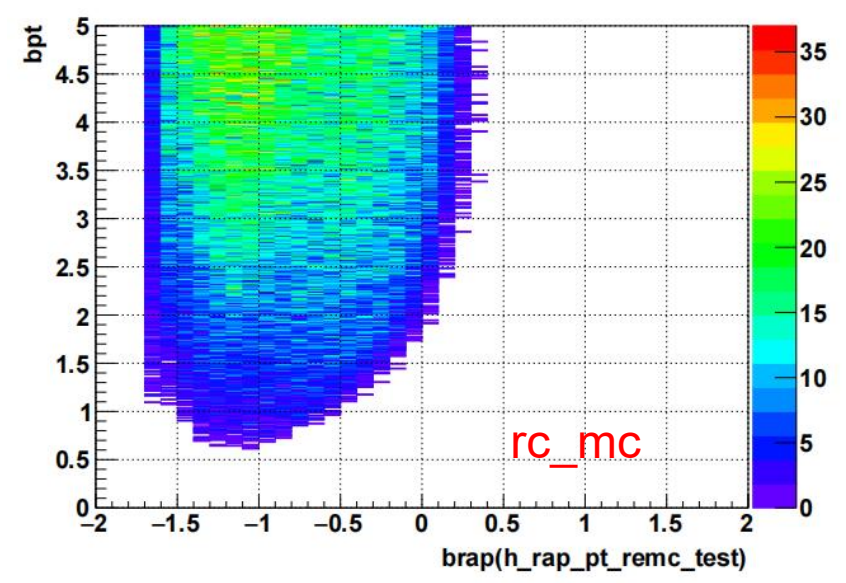
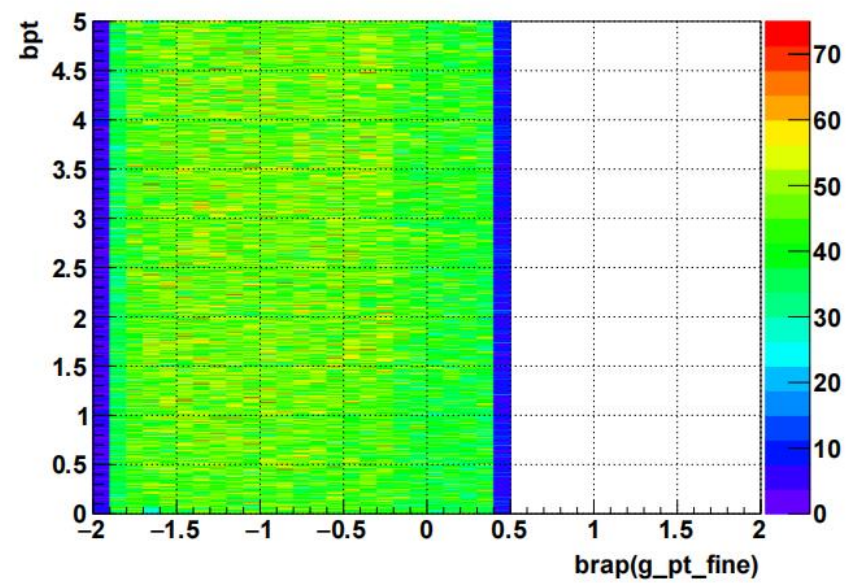
all weight=1

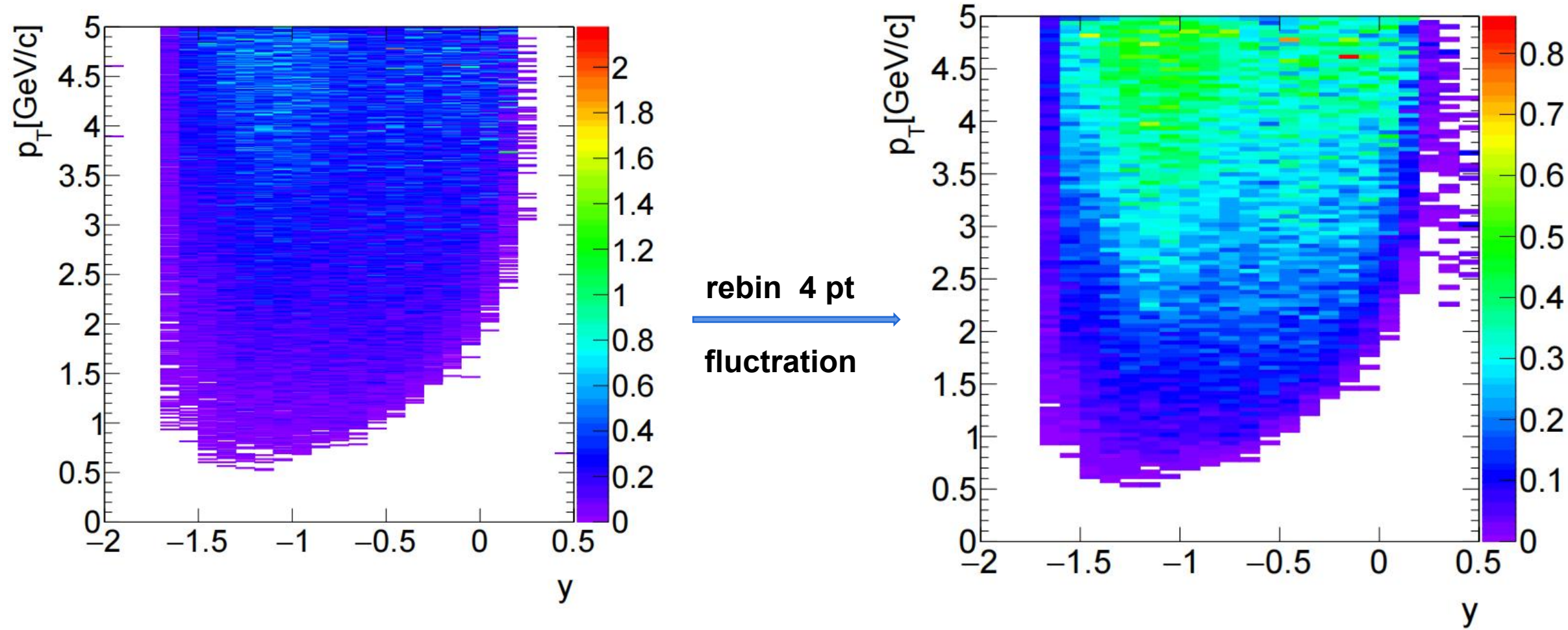
only pt_weight=1

efficiency of new data

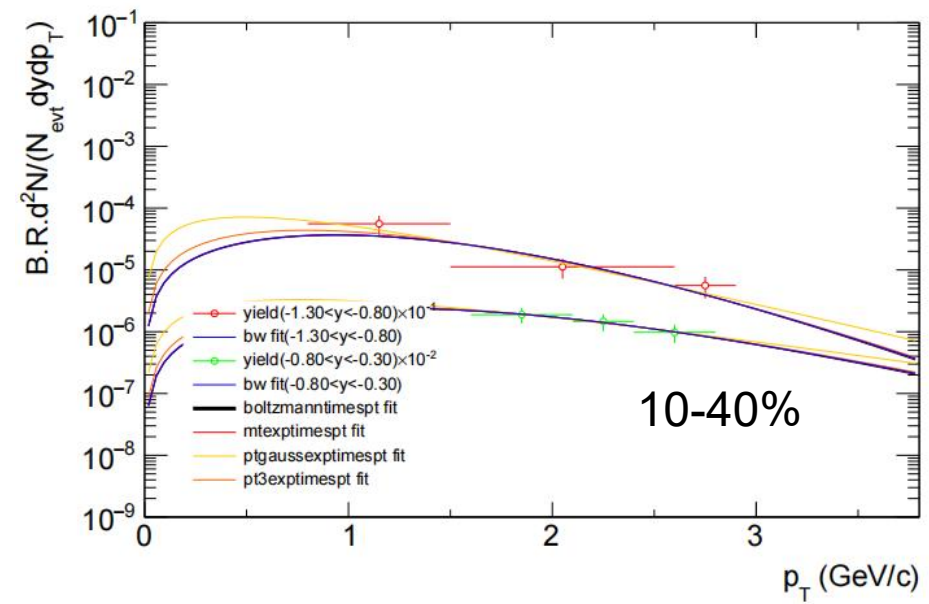
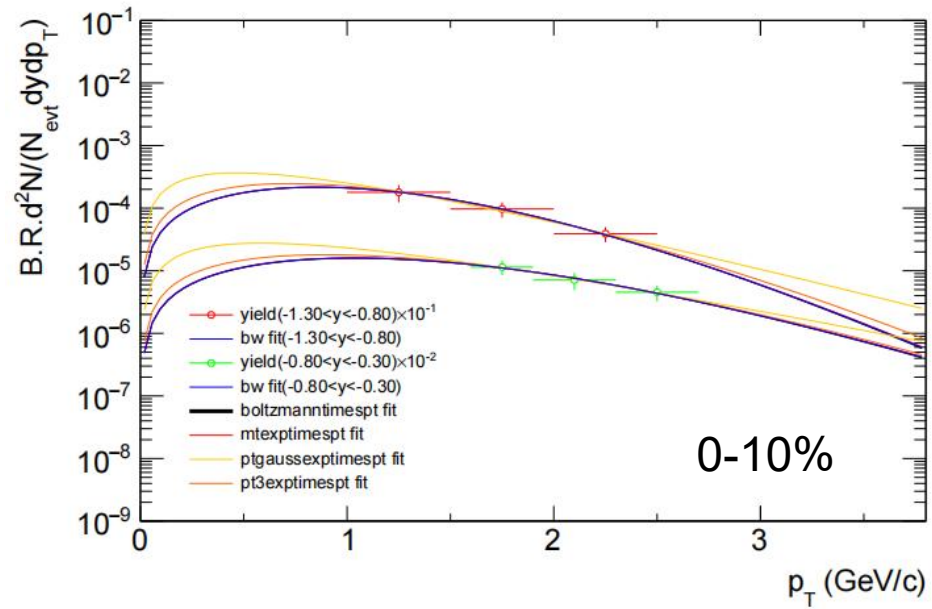


efficiency of new data





$$\frac{d^2N}{dp_T dy} = \frac{1}{\text{B.R.}} \times \frac{N^{\text{raw}}}{N_{\text{evt}} \Delta(p_T) \Delta(y)} \times \frac{1}{\varepsilon_{\text{TPC}} \times \varepsilon_{\text{PID}}}, \quad {}^3_2\text{He}: 3\sigma$$



•dNdy

•data+integral:data_point*pt_width(sum of data)+integral of fit

•dNdy_error

•scale method:

(error of the sum of data)*(integral of fit function from 0 to 10)/(integration of fit function in measured pt range)

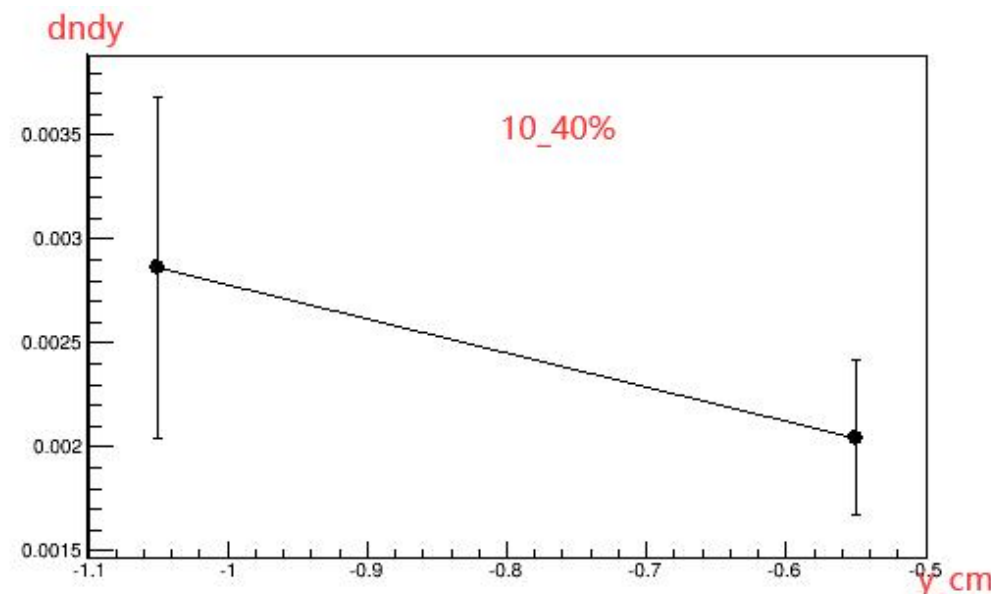
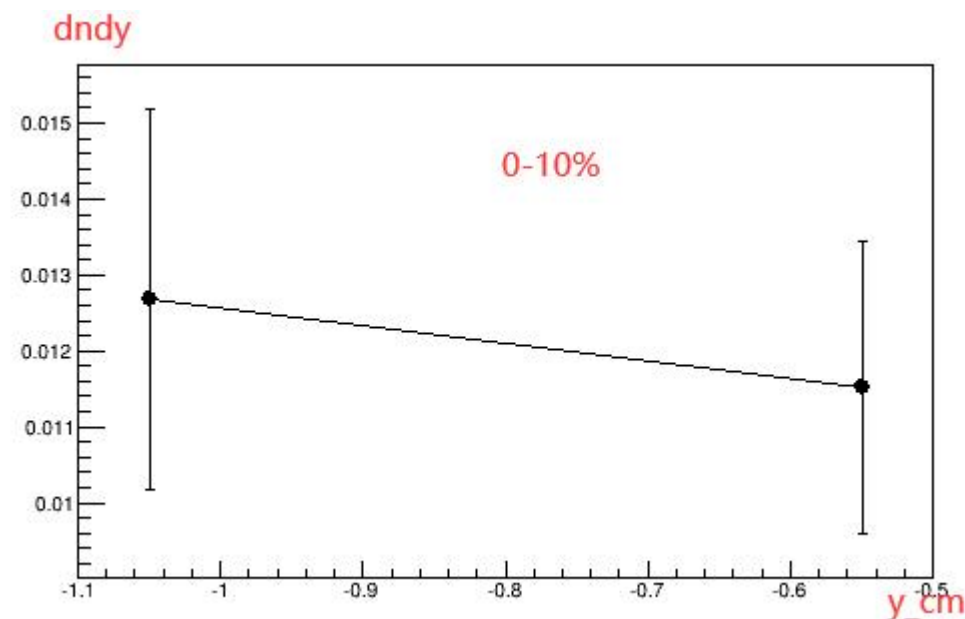
•default function:boltzmann

•system error from fit function styles~25%

```
dndy_err_funcstyle_sys1:0.00296195
dndy_err_funcstyle_sys2:0.00298735
```

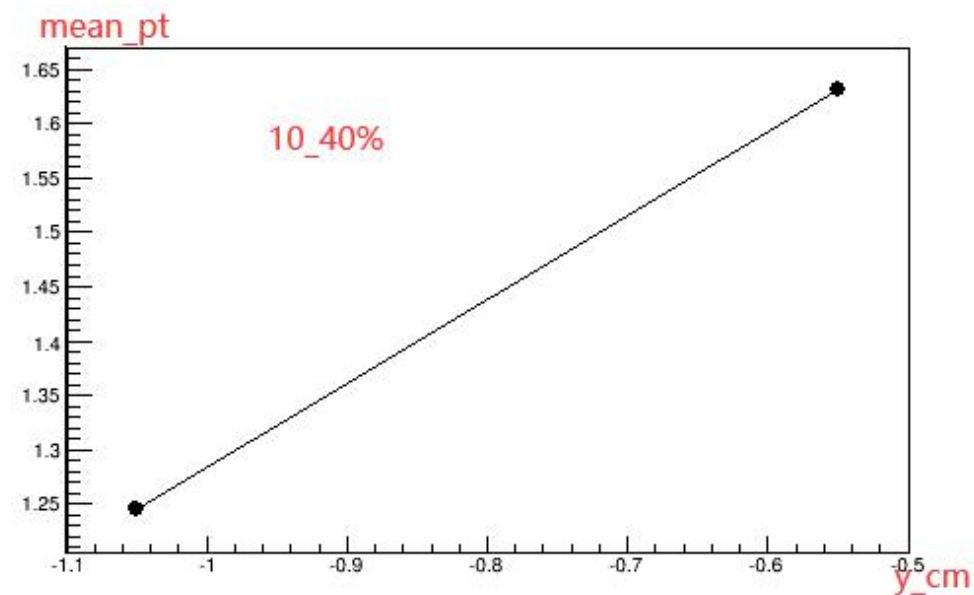
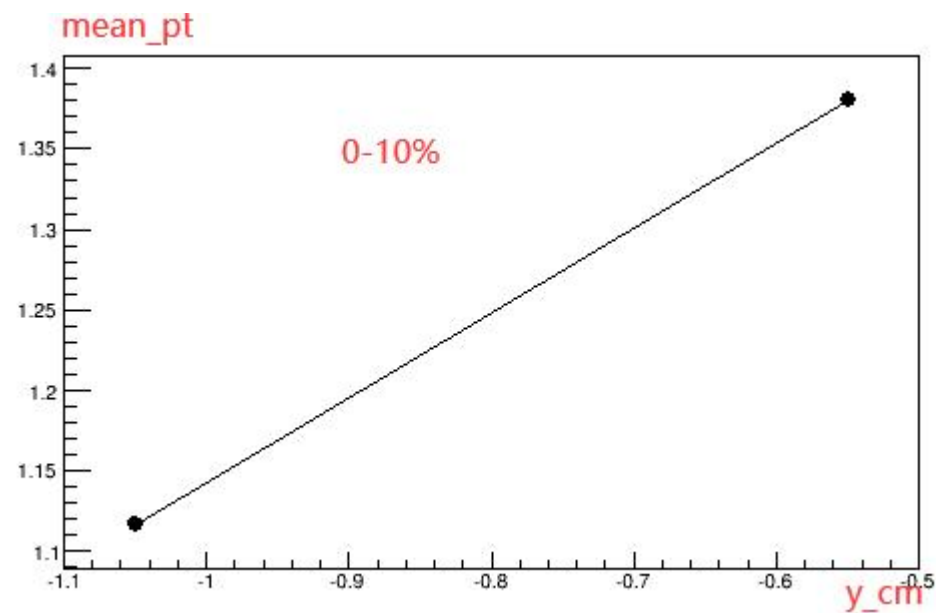
methods	dNdy(0-10%,-1.3~-0.8)±error(scale)	dNdy(10-40%,-1.8~-0.8)±error(scale)
data+integral (boltzmann)	0.0126835 ± 0.00251085	0.00286079 ± 0.000823171
integral (boltzmann)	0.0126755 ± 0.00251085	0.00238693 ± 0.000823171
scale (boltzmann)	0.0126915 ± 0.00251085	0.00307239 ± 0.000823171
data+integral (mtexptrap)	0.0127261 ± 0.00251085	0.0028718 ± 0.000823171
data+integral (bwexptrap)	0.0127065 ± 0.00251085	0.00287498 ± 0.000823171
data+integral (ptgaussexp)	0.0186072 ± 0.00251085	0.0040477 ± 0.000823171
data+integral (mtexptrap)	0.0141621 ± 0.00251085	0.00312603 ± 0.000823171
methods	dNdy(0-10%,-0.8~-0.3)±error(scale)	dNdy(10-40%,-0.8~-0.3)±error(scale)
data+integral (boltzmann)	0.0115077 ± 0.00192529	0.0020458 ± 0.000374291
integral (boltzmann)	0.0115238 ± 0.00192529	0.00204764 ± 0.000374291
scale (boltzmann)	0.0114668 ± 0.00192529	0.00204233 ± 0.000374291
data+integral (mtexptrap)	0.0116005 ± 0.00251085	0.00206458 ± 0.000374291
data+integral (bwexptrap)	0.0115595 ± 0.00251085	0.00206745 ± 0.000374291
data+integral (ptgaussexp)	0.0174824 ± 0.00251085	0.00272665 ± 0.000374291
data+integral (mtexptrap)	0.0128424 ± 0.00251085	0.00220094 ± 0.000374291

yulou



- default function: boltzmann

methods	dNdy(0-10%,-1.3~-0.8)	dNdy(10-40%,-1.8~-0.8)
neantpt (boltzmann)	1.11627	1.24433
neantpt (ntexptrap)	1.11533	1.24151
neantpt (ptgaussexp)	0.936628	0.990099
neantpt (ntexptrap)	1.05859	1.16051
methods	dNdy(0-10%,-0.8~-0.3)	dNdy(10-40%,-0.8~-0.3)
neantpt (boltzmann)	1.38075	1.63206
neantpt (ntexptrap)	1.37905	1.63433
neantpt (ptgaussexp)	1.16558	1.51828
neantpt (ntexptrap)	1.31476	1.58348



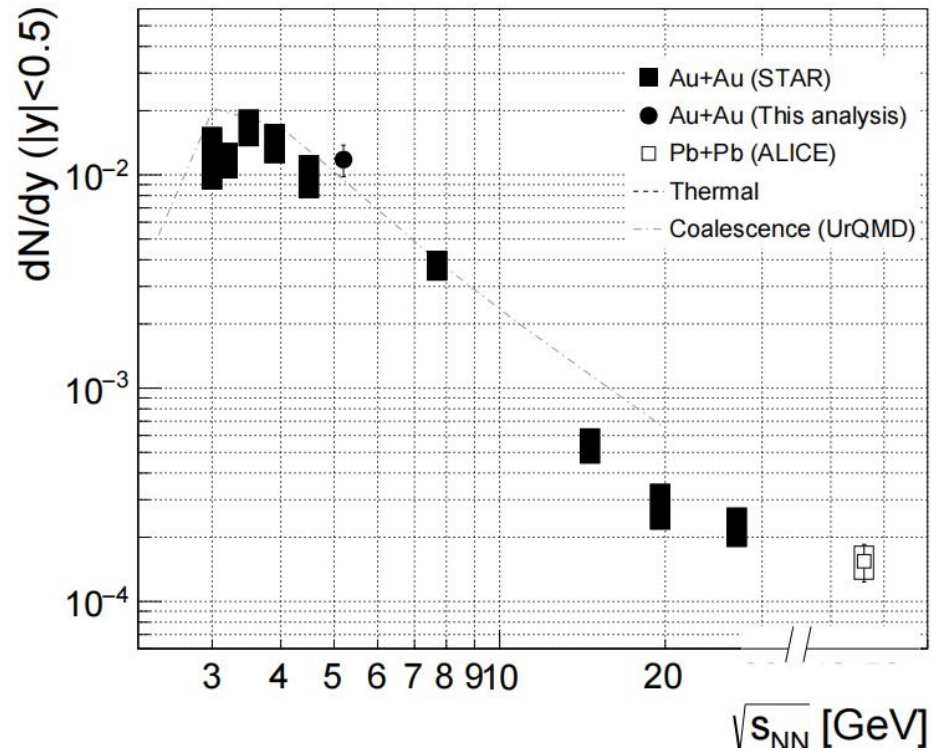
- check the efficiency of new data
- Get dNdy in meanpt and dndy vs y

To do list

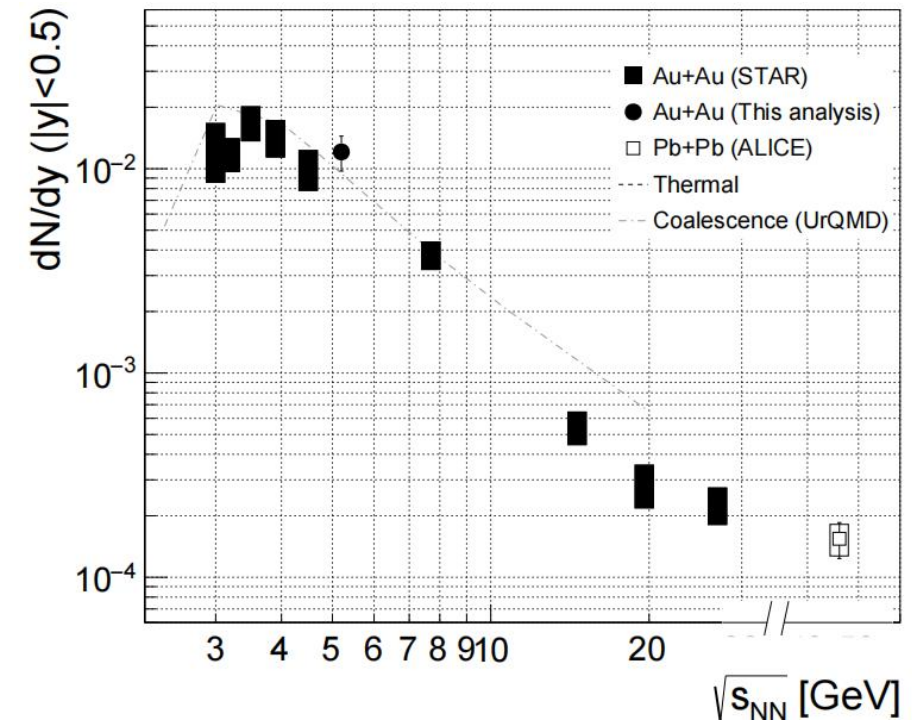
- Get system error in 0-10% and 10-40%

P_T spectra

- Cen: 0-10%.
- yield: **integral method** (fit function's first parameter)



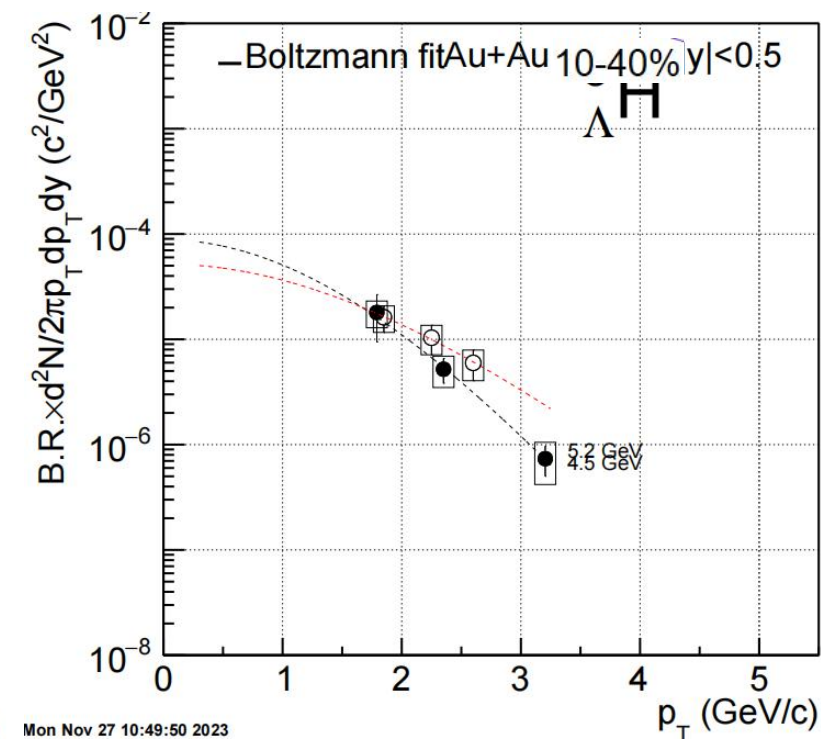
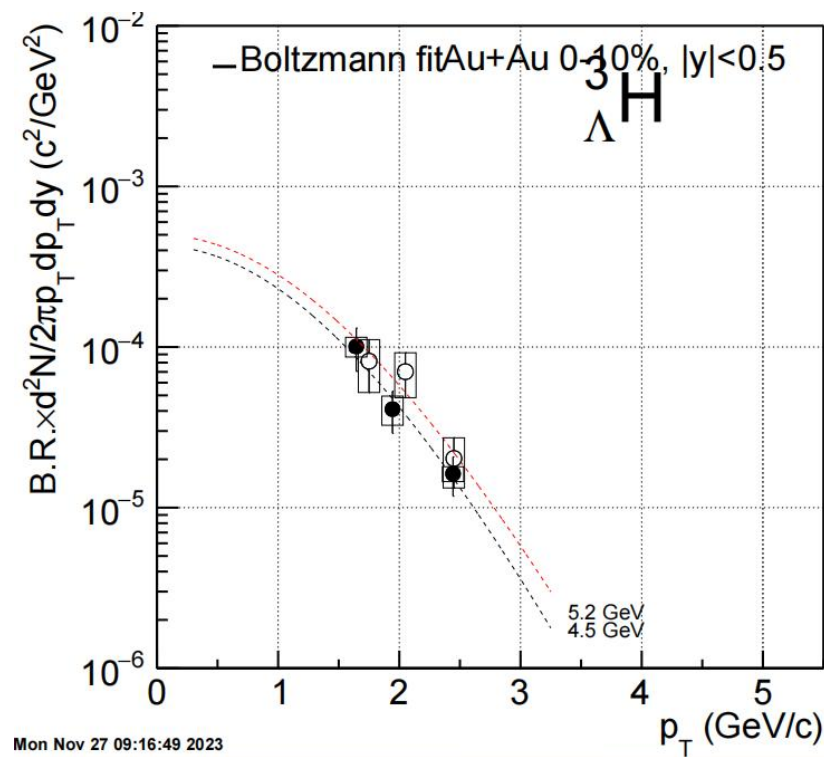
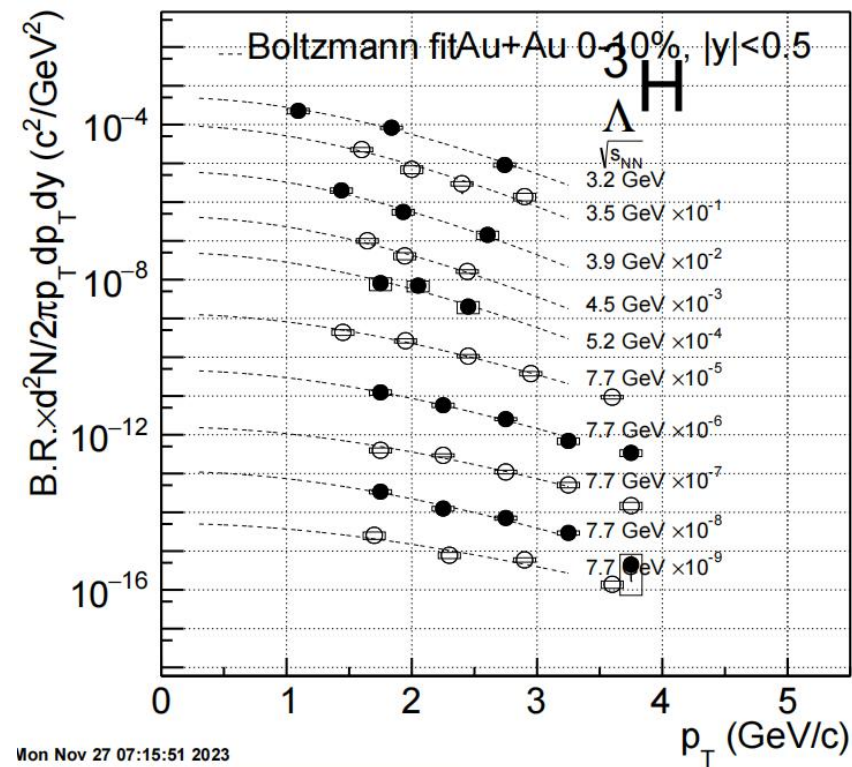
scaled ($y: -0.8 \sim -0.3$)



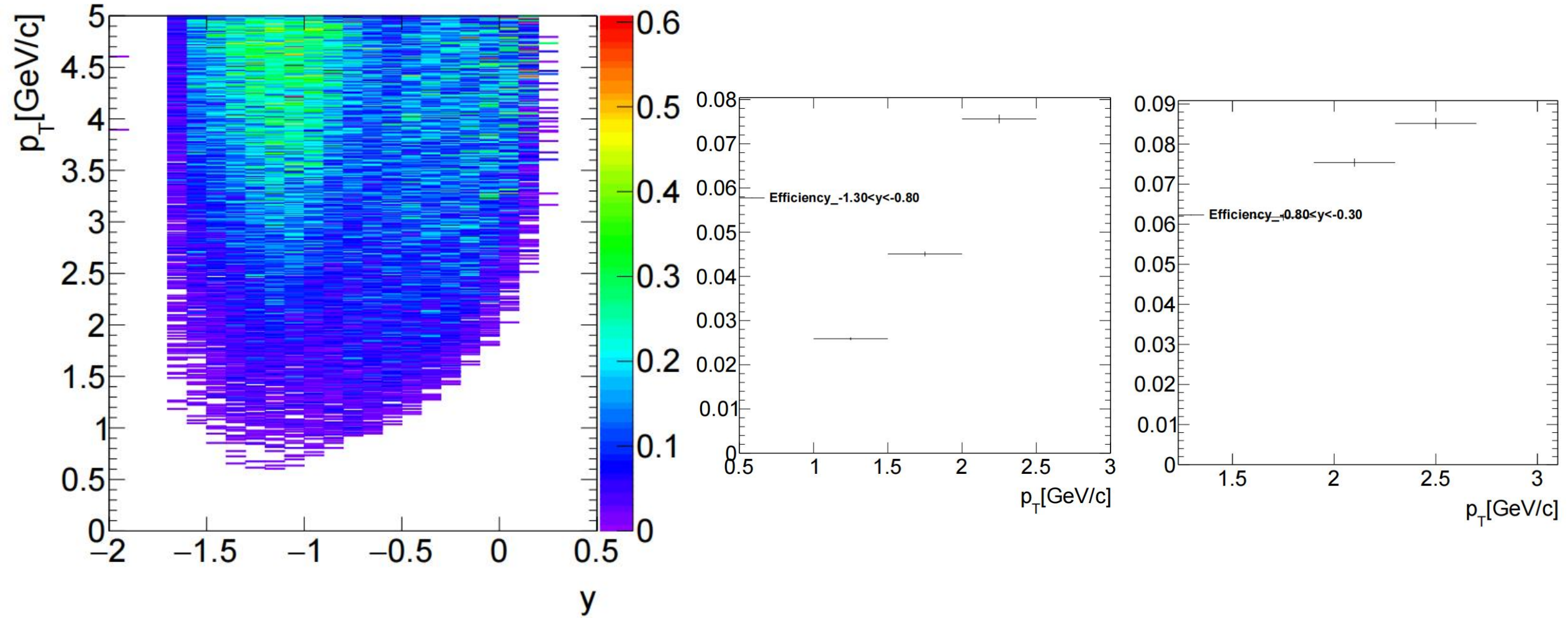
scaled ($y: -0.7 \sim -0.2$)

P_T spectra

- Cen: 0-10%.
- yield: **integral method** (fit function's first parameter)



- Cen: 0-10%.
- Efficiency



- Cen: 10-40%.
Efficiency

