
Analysis status

--- raw data spectrum combination

ranxu

outline

- ✦ trigger rejection factor(RF) comparison year by year
- ✦ cluster distribution combine

RF

$$\text{✦ } RF = \left(\frac{1}{N_{evt}} \frac{dN_{cluster}}{dP_T} \right)_{trigger} / \left(\frac{1}{N_{evt}} \frac{dN_{cluster}}{dP_T} \right)_{MB}$$

- ✦ Trigger sample normalize:

$$\left(\frac{dN}{dp_T} \right)_{norm} = \left(\frac{dN}{dp_T} \right)_{trigger} / (N_{evt} * RF)$$

RF year by year comparison

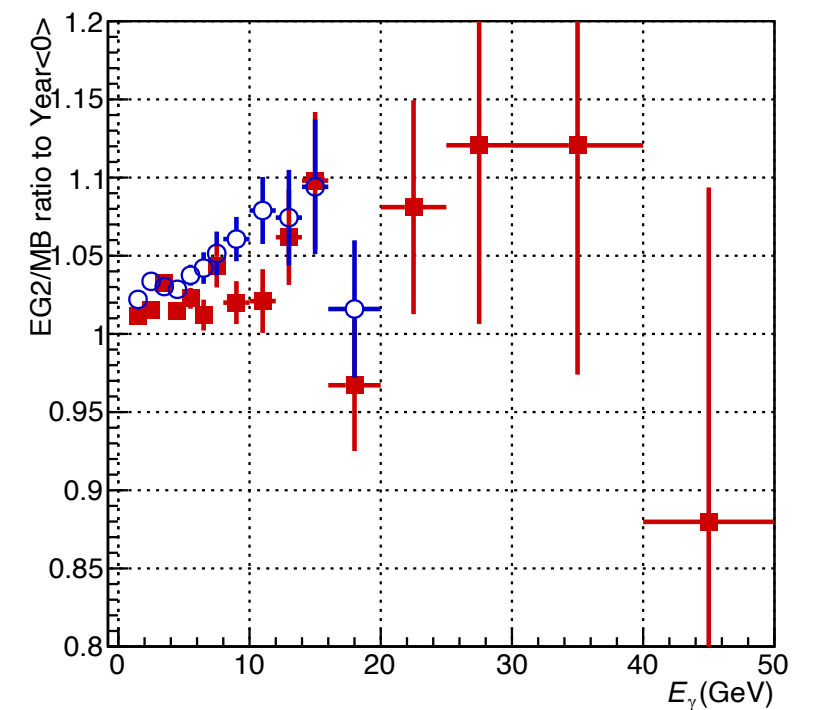
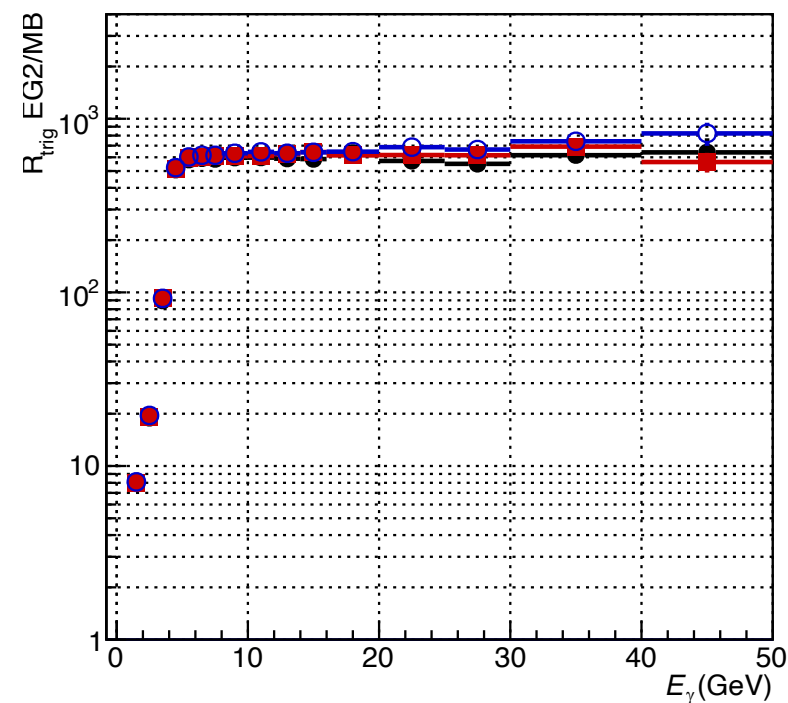
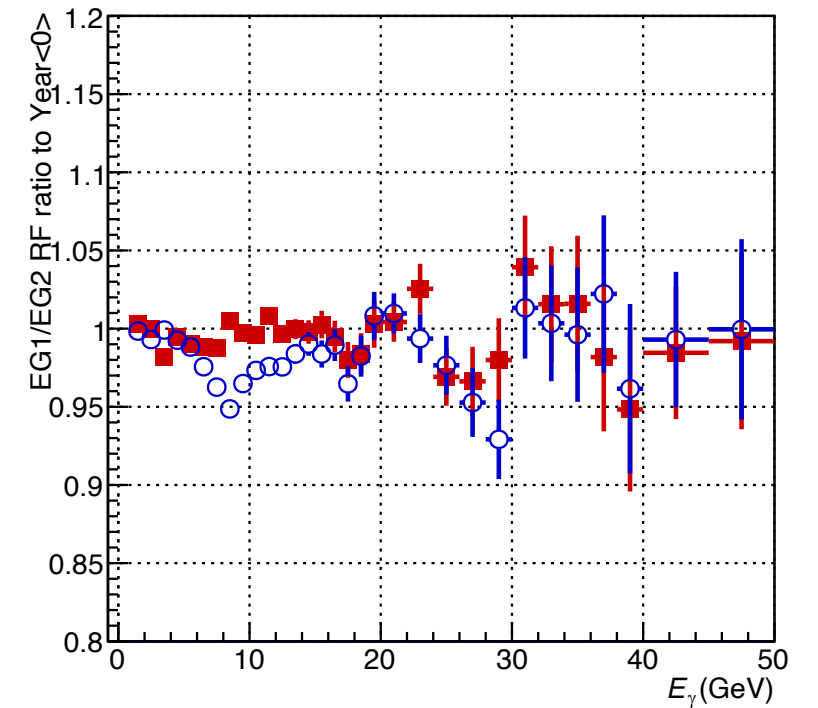
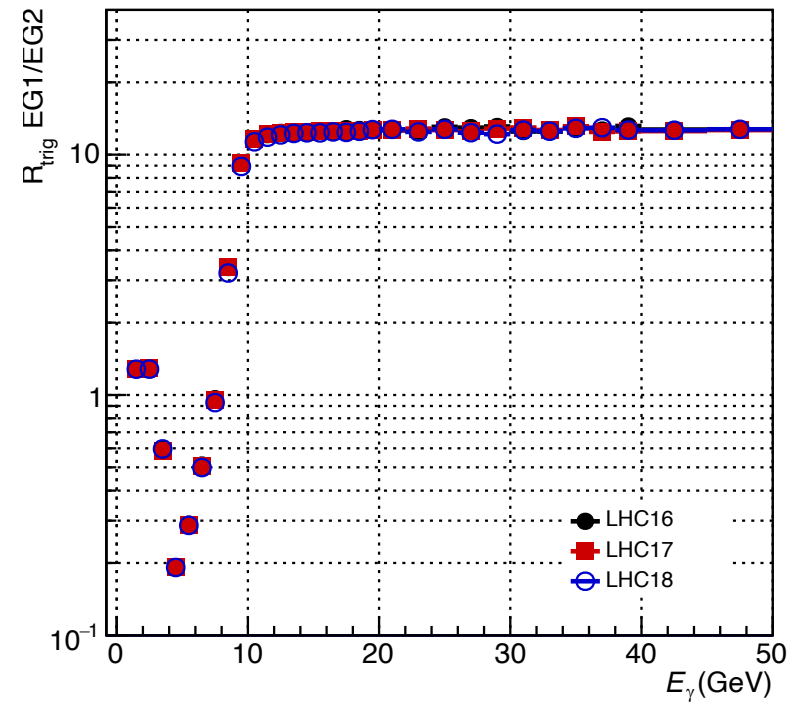
	EG1/EG2	EG2/MB
LHC16	12.65 ± 0.04	592.17 ± 3.01
LHC17	12.60 ± 0.03	606.52 ± 2.11
LHC18	12.47 ± 0.03	623.71 ± 2.10

	EG1/MB	Ratio to 18
LHC16	7490.95	96.31%
LHC17	7642.15	98.26%
LHC18	7777.66	

Fit range:

EG1/EG2 [15, 40]

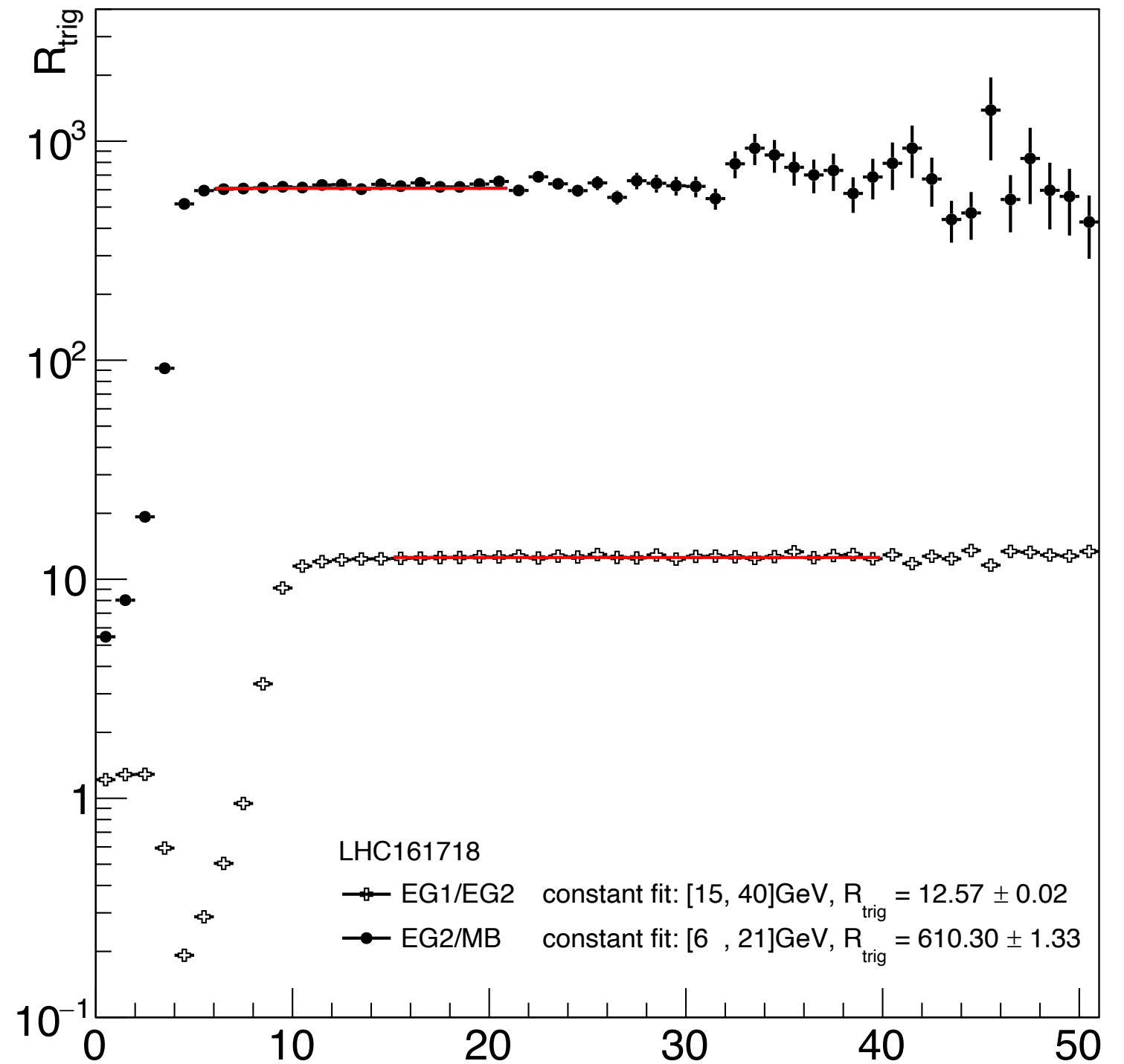
EG2/MB [6 , 21]



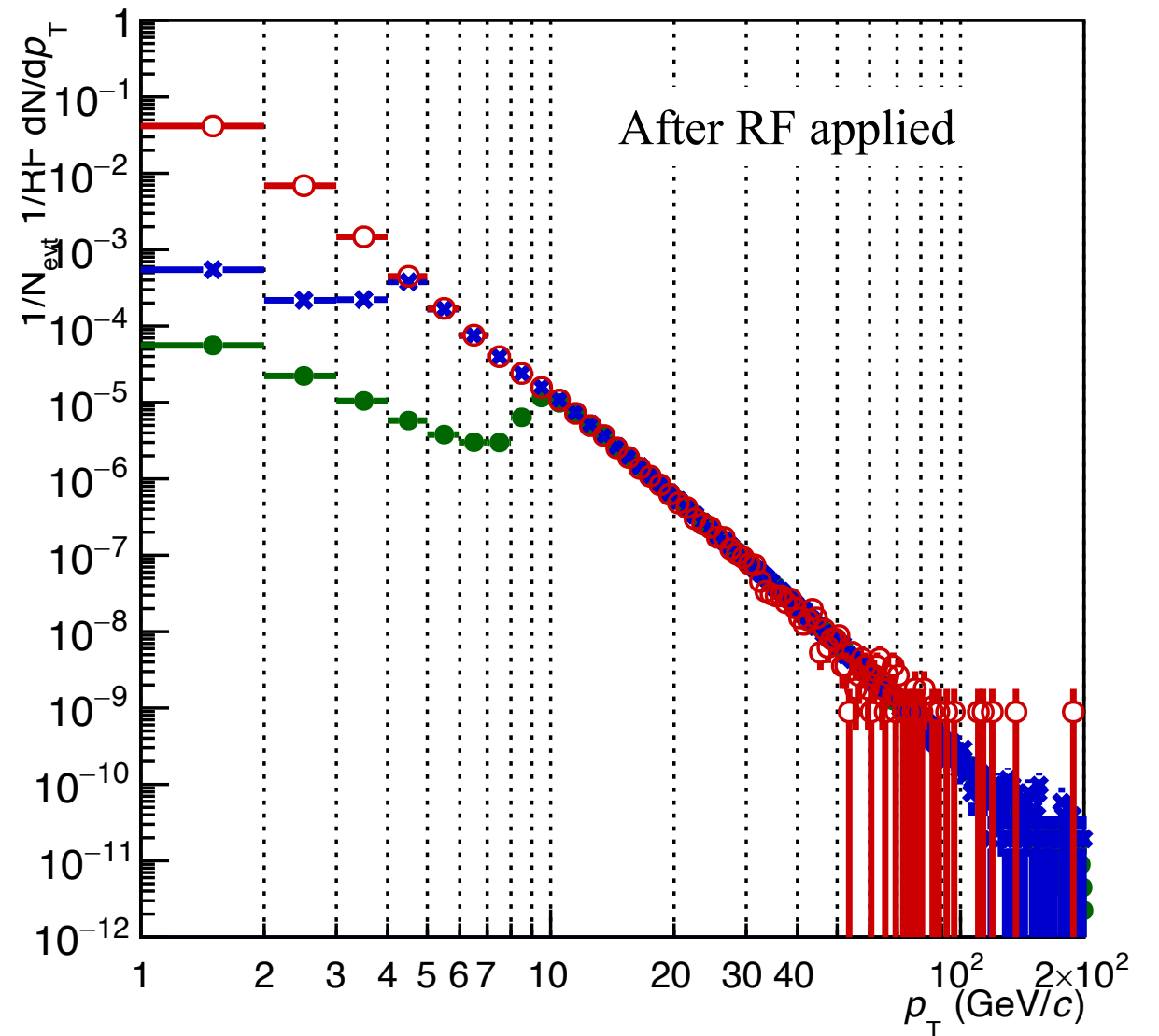
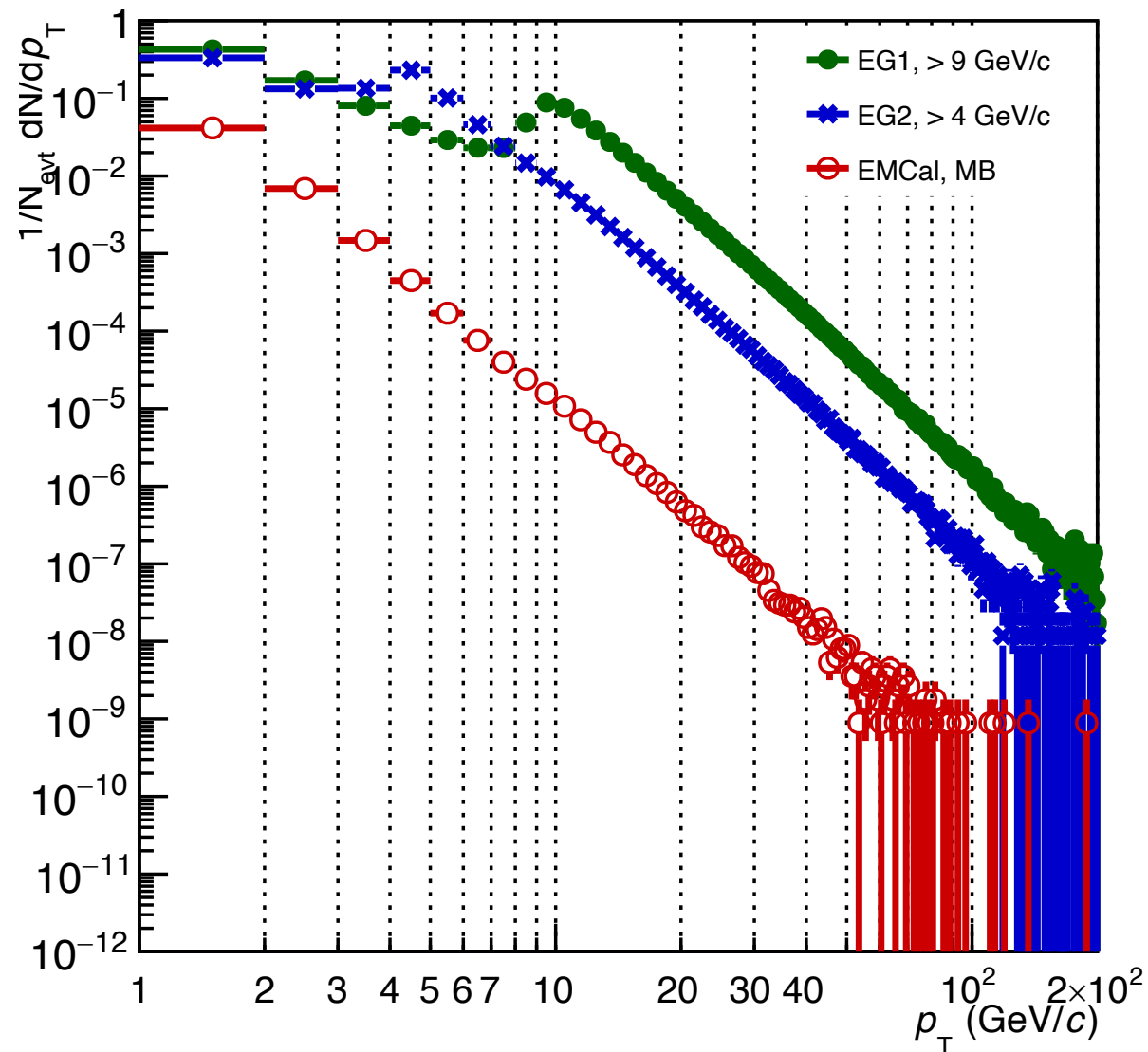
Cluster rejection factor

	Markus	Mine
L2/MB	$5.33 \cdot 105.45$ $= 562.05$	610.30
L1/L2	12.64	12.57
L1/MB	7104.29	7671.47

- $\sim 7.4\%$ difference from performance
- $7104.29 / 7671.47 = 92.61\%$

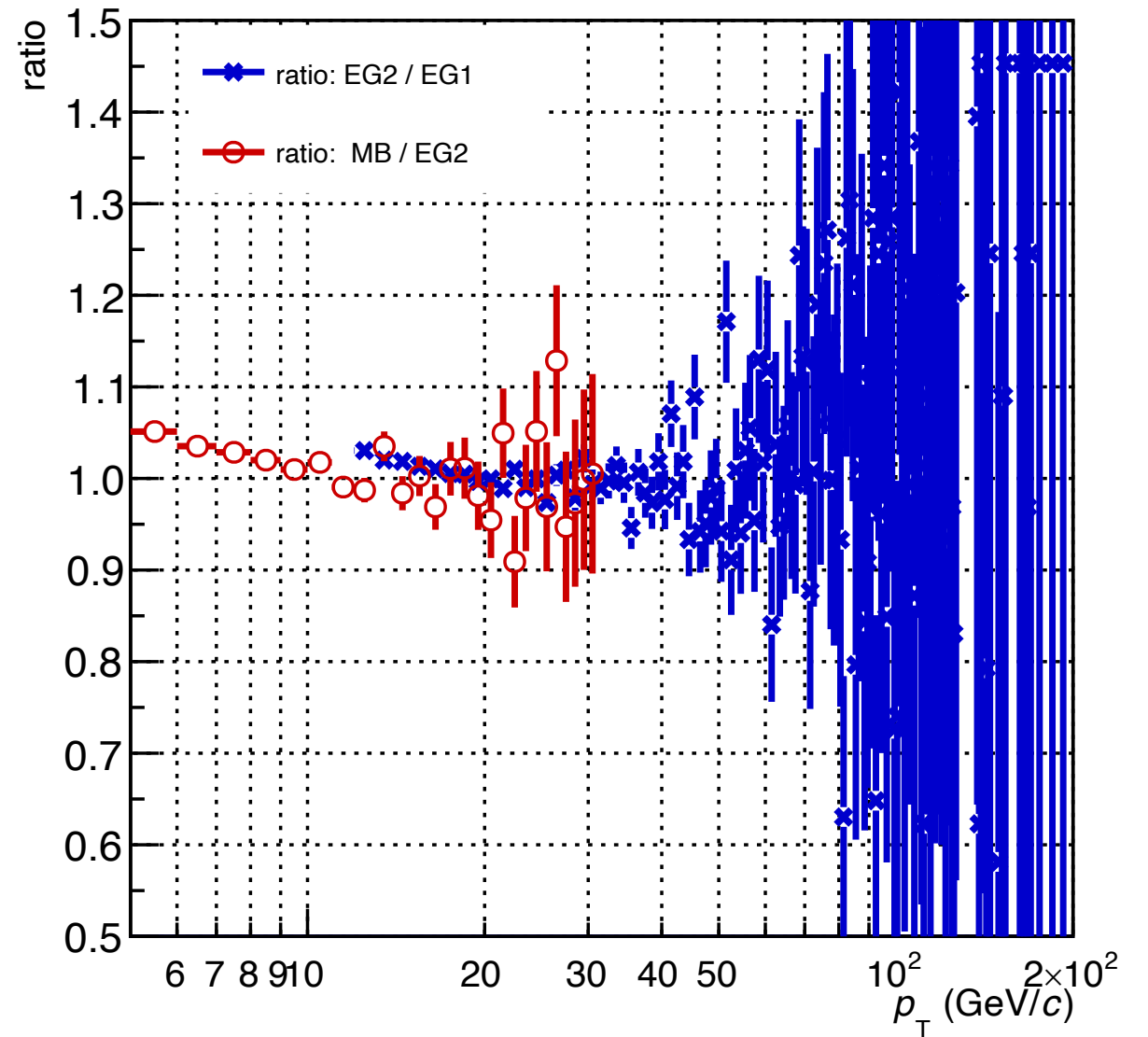
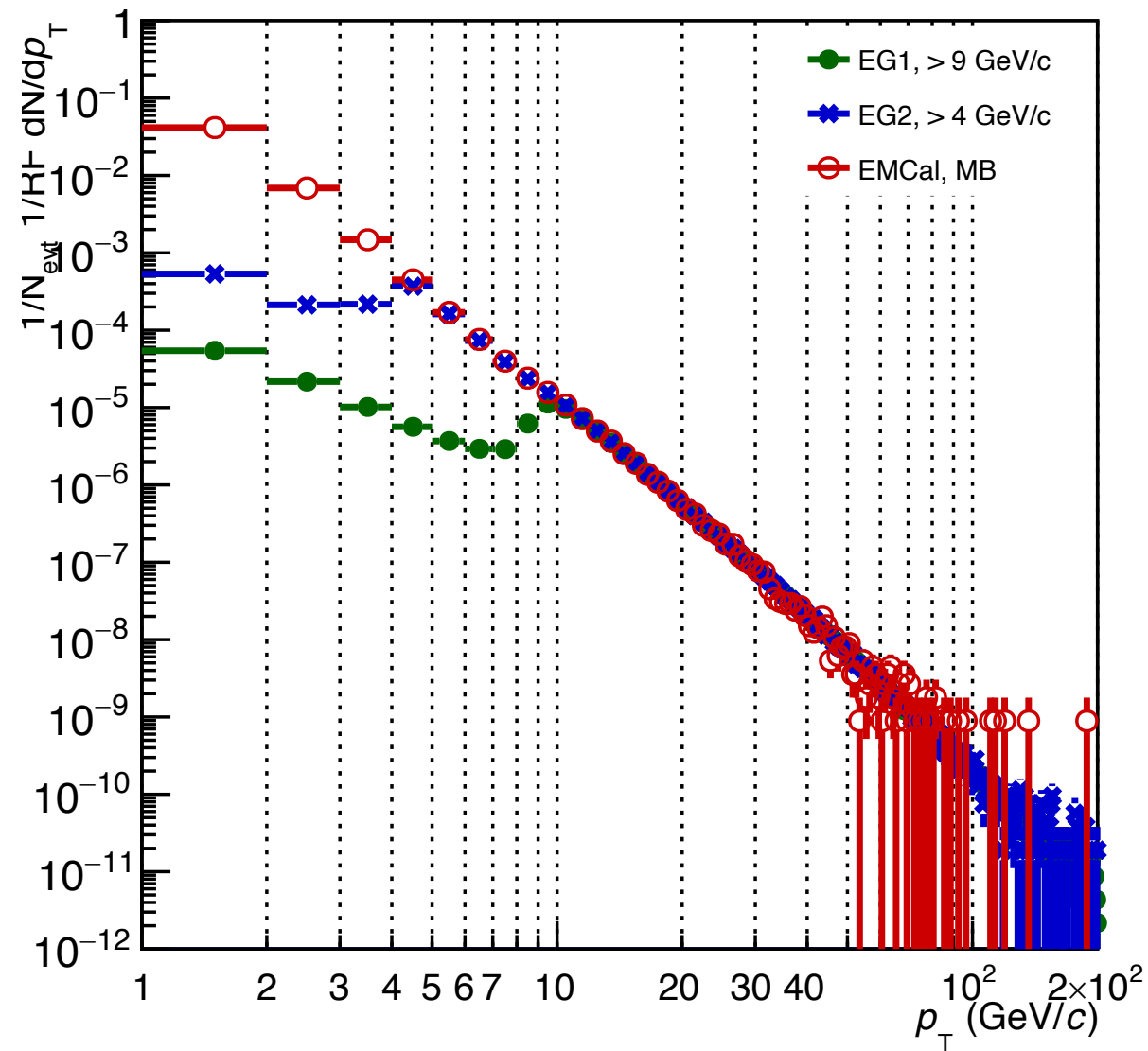


Cluster pt distribution



- After normalized, triggered samples have similar distribution with MB
- Ratio about after RF normalized in next slide

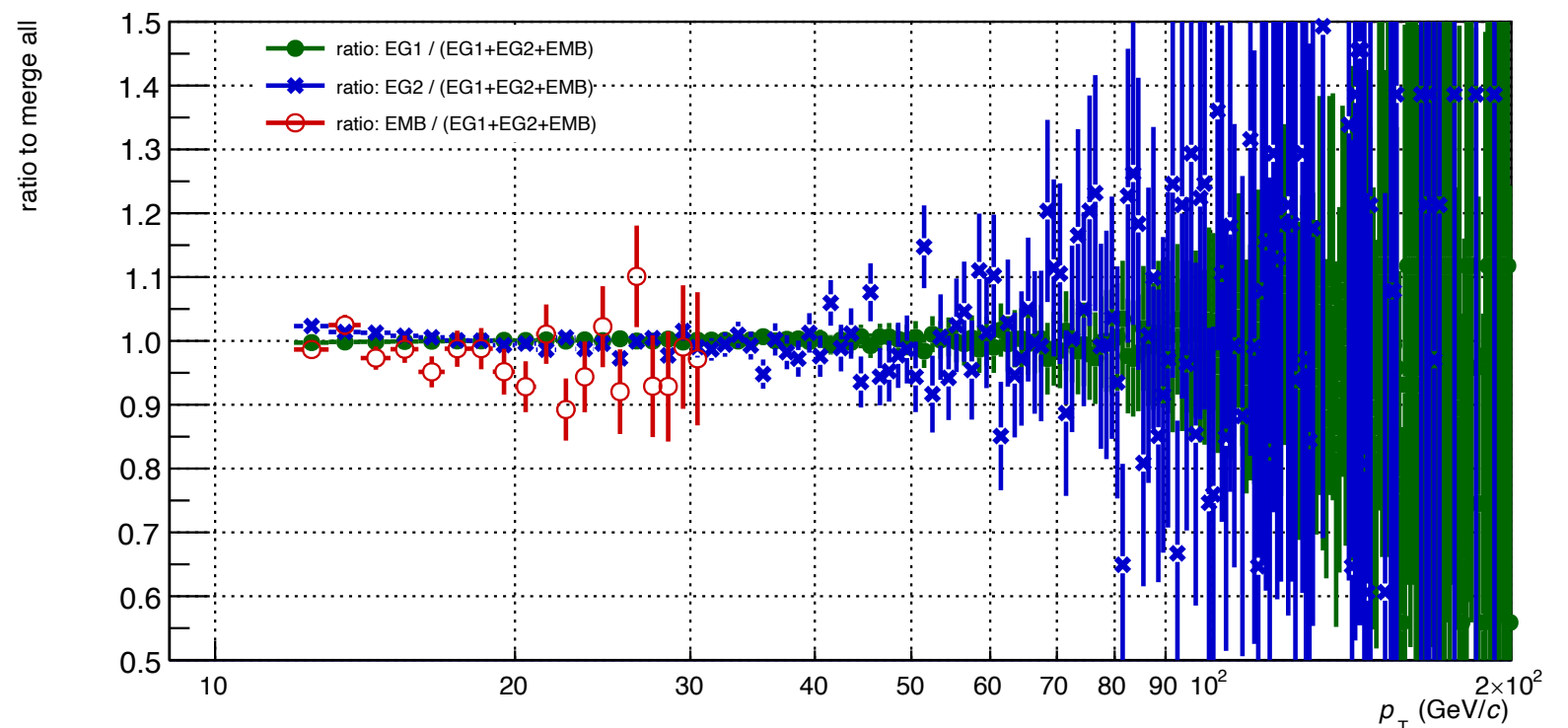
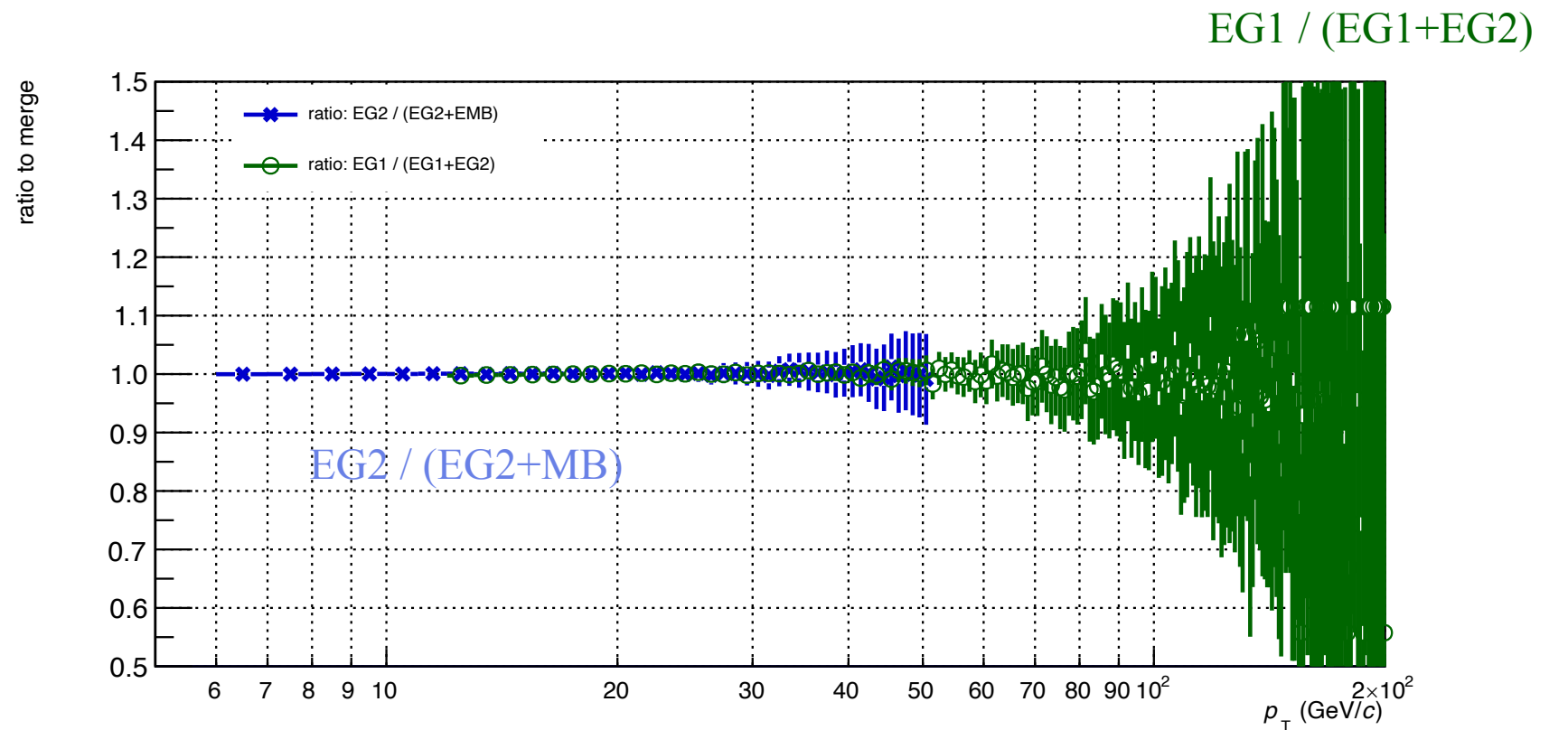
Data comparison, per trigger



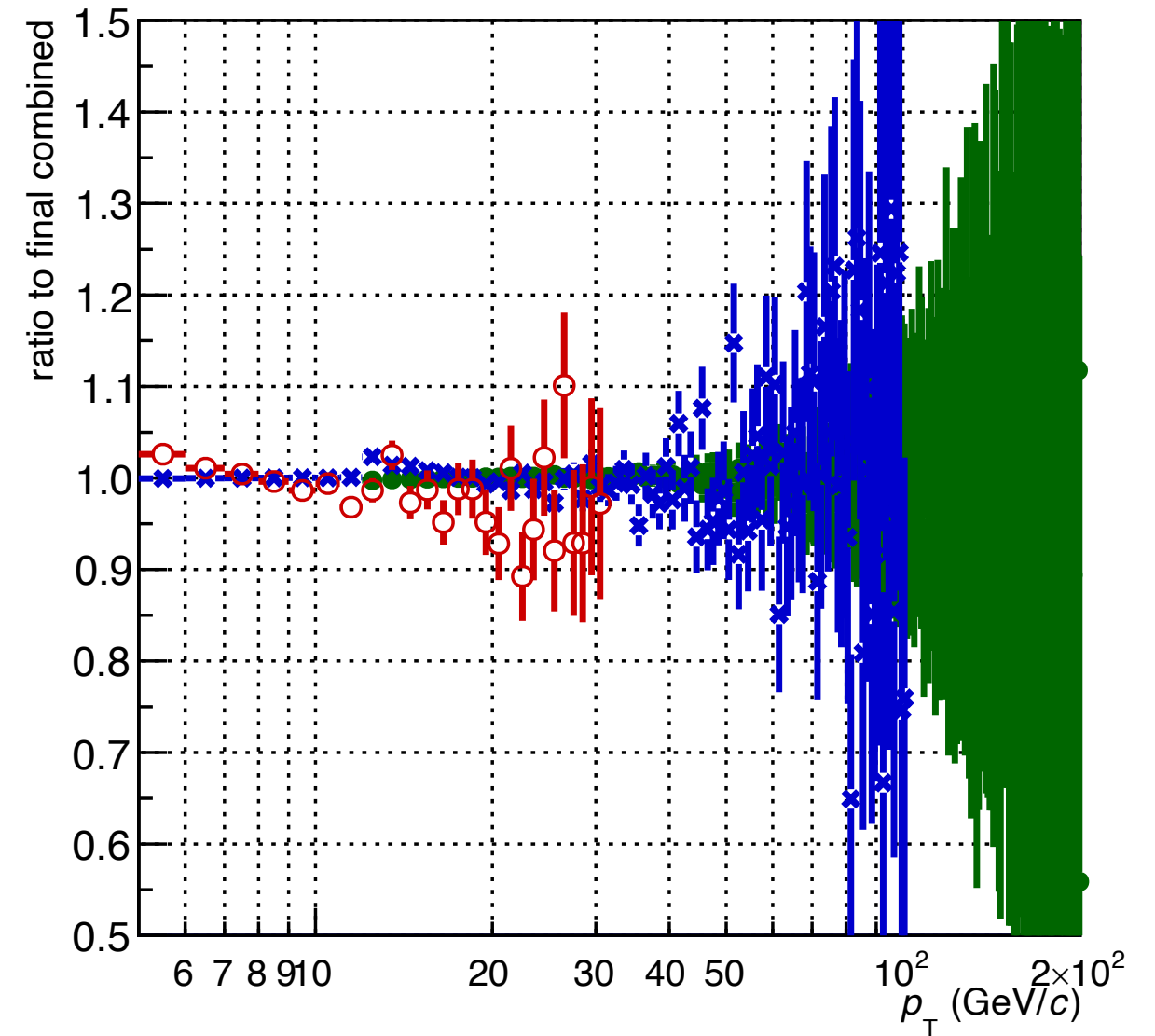
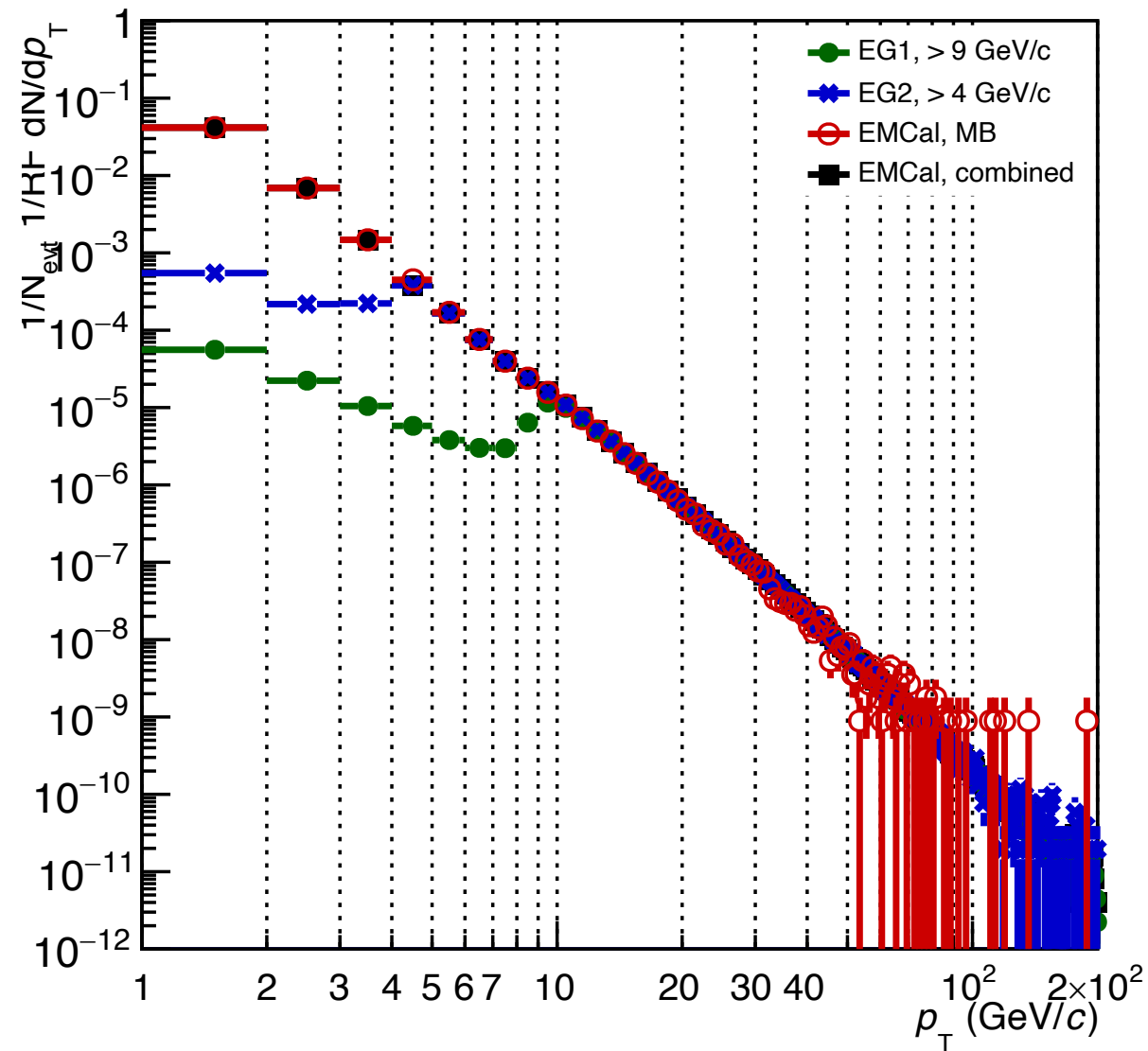
- Triggered sample consist with each other
- MB sample about $\sim 5\%$ difference with EG2

Trigger compare to Merged

- after MB combined, EG2 distribution not change.
- after EG2 added, EG1 shape changed a bit
- all samples have same distribution after 12GeV/c



Data triggered comparison final



Combine interval

- [5,12) EG2+EMB
- [12,200) EG1+EG2+EMB

Summary

- ✦ data create in different years has similar trigger rejection factor
- ✦ after RF normalized, triggered sample distribution consist with each other

To do list

- ✦ extend EG2/MB fit range, to see how the RF change
- ✦ More detail check for trigger sample combine
 - find reason ratio between MB and EG2 in low pt
 - select combined point for EG2+MB and EG1

Thanks for your listening