Jets in the trigger version 5 data
Jetrad interface to LHAPDF

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Stripped files

Trigger	D0Release	Files	Runs	Run range	Events	Size
3.%	p10.14.01	374	131	141737-145216	1546095	8.7GB
4.%	p10.14.01	245	12	145890-147355	772176	4.7GB
4.%	p10.15.00	583	54	146338-147995	2902718	19GB
4.%	p10.15.01	681	64	145684-149210	2174925	14GB
5.%	p10.15.01	746	93	149269-151911	2196254	14GB

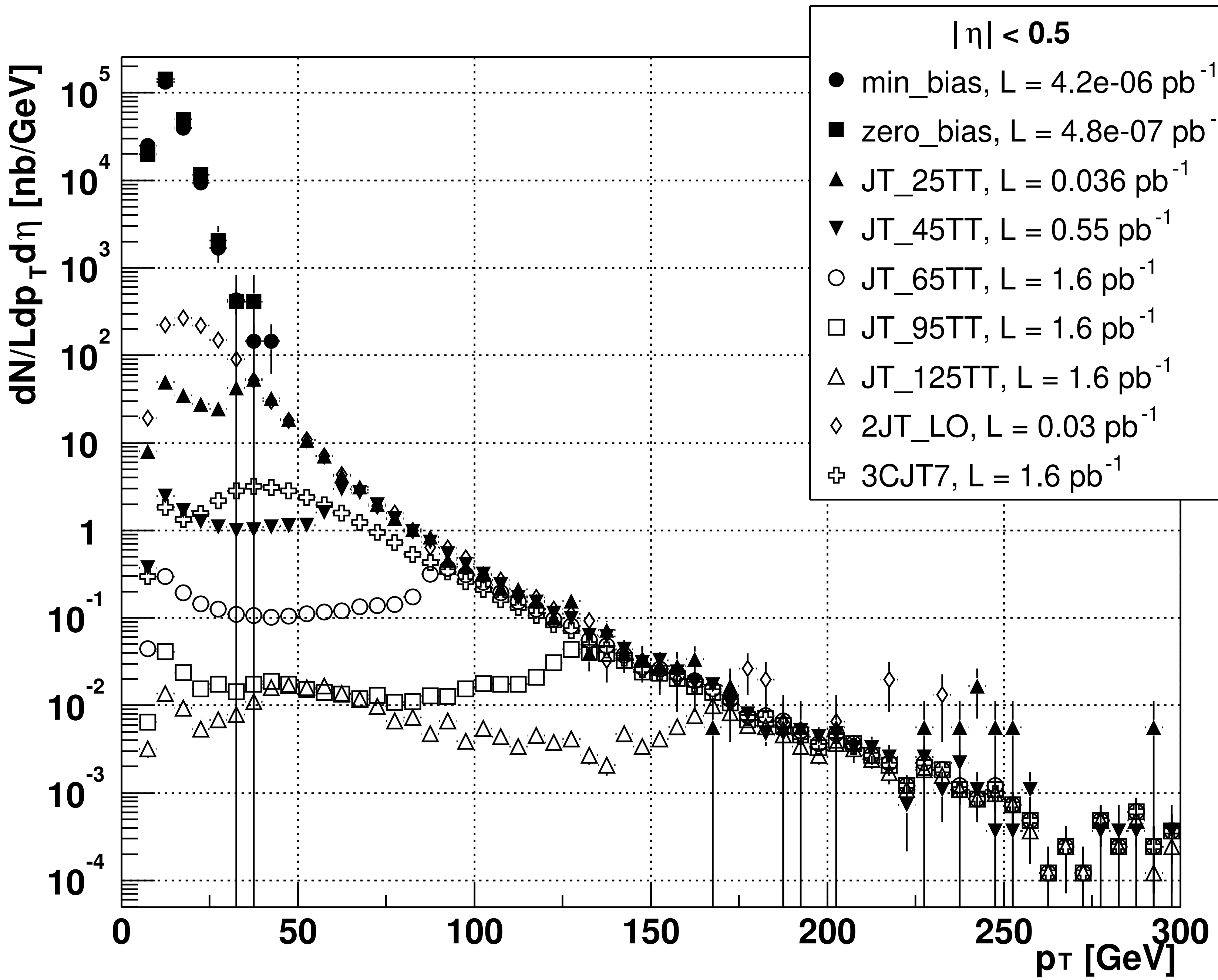
Run selection

number of runs	84
number of files	687
number of events	1994391
number of events in good LBN	1804422
Luminosity at L1 for trigger JT_95TT	1.64 pb^{-1}
Recorded luminosity for trigger JT_95TT	1.41 pb^{-1}

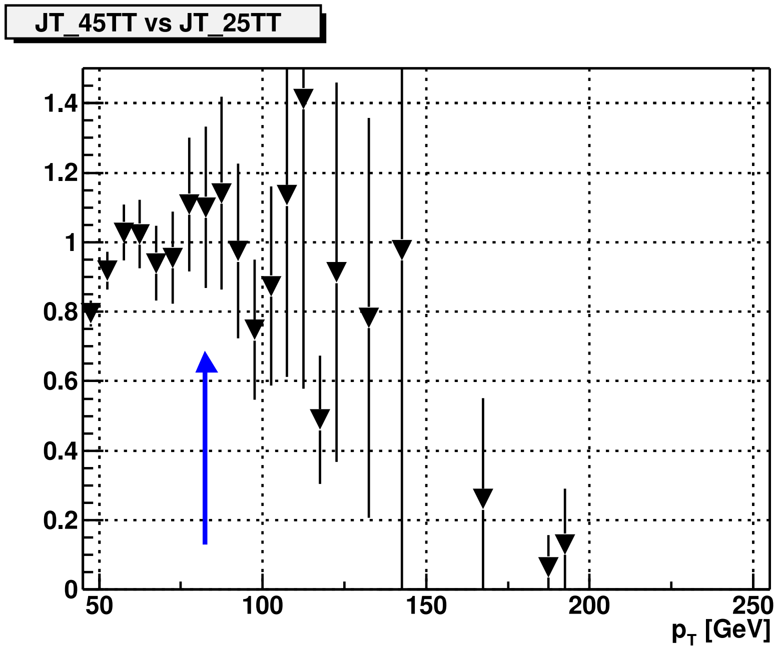
▷ *better rates in trigger v5*

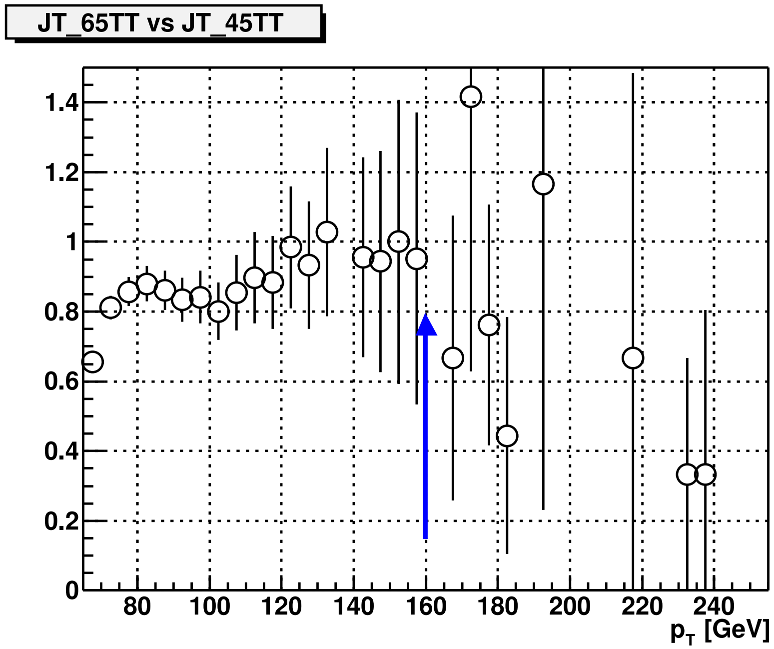
- *in trigger v4,* $\mathcal{L} \sim 1.94\,\mathrm{pb}^{-1}$ *corresponded to* 4.2 M *events and* 38 GB *data*

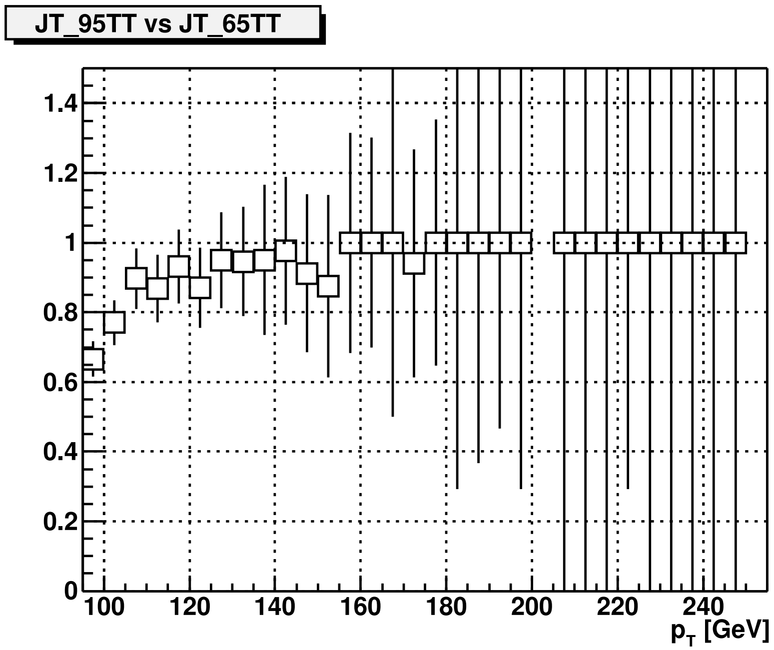
Inclusive turn-ons, $\mathcal{R}$=0.7

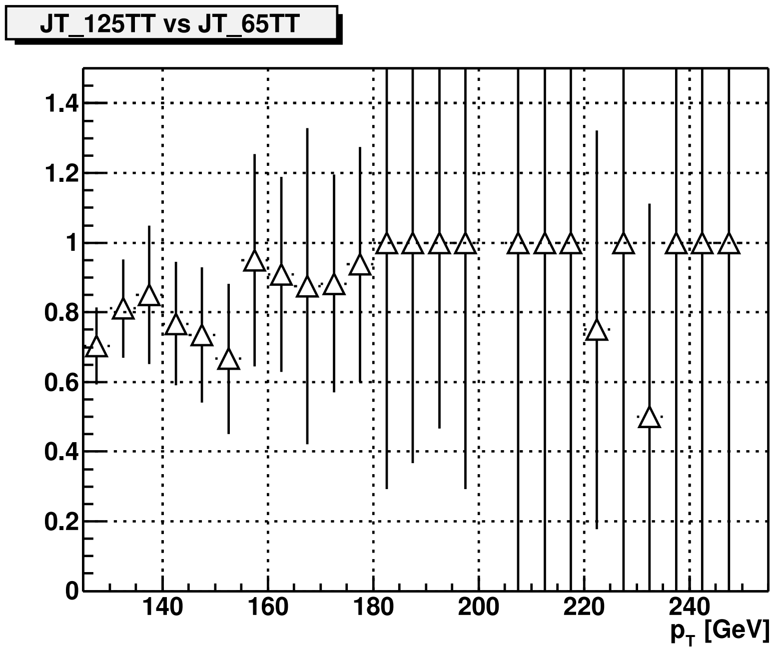


L1 turn-ons : R=0.7, 2jet

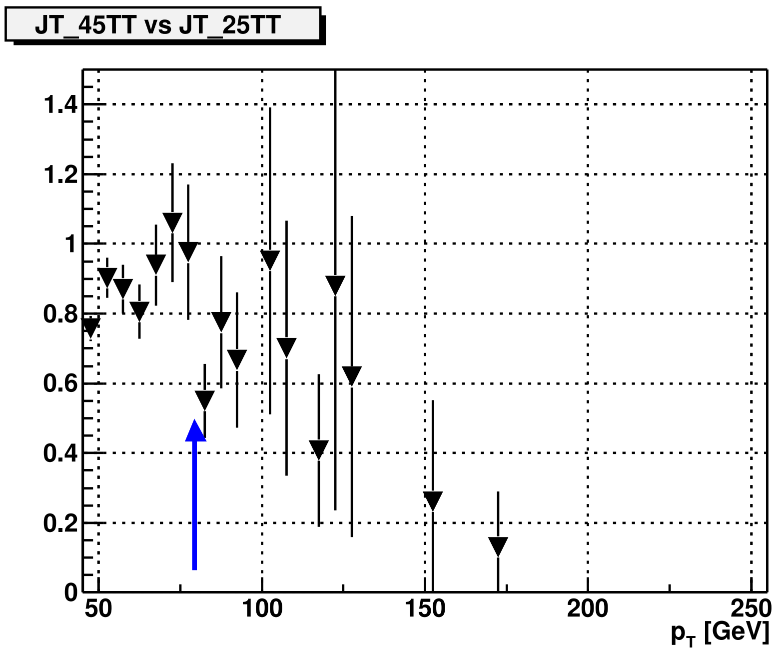


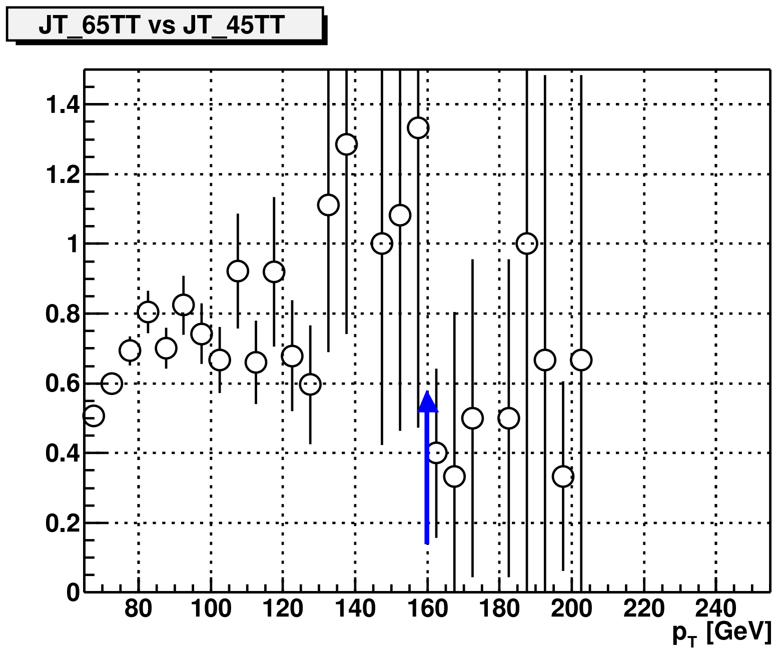


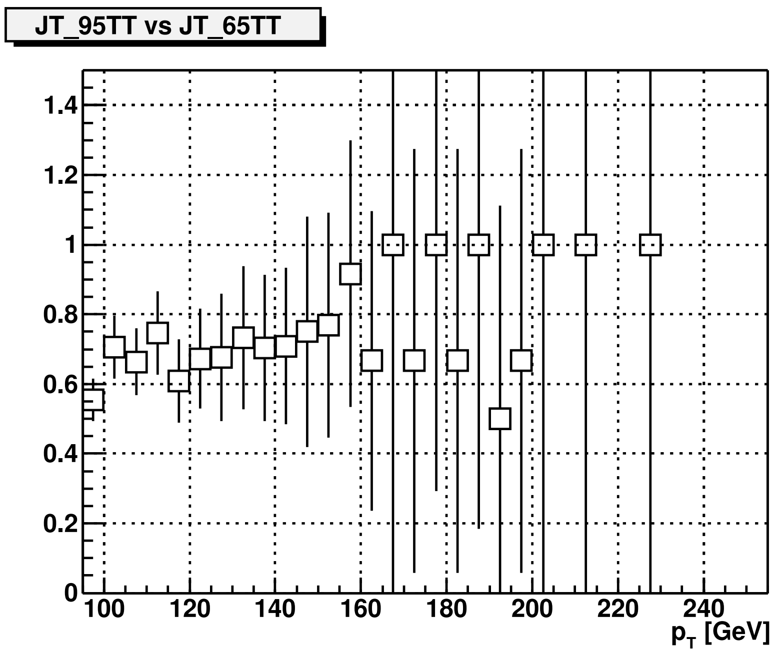


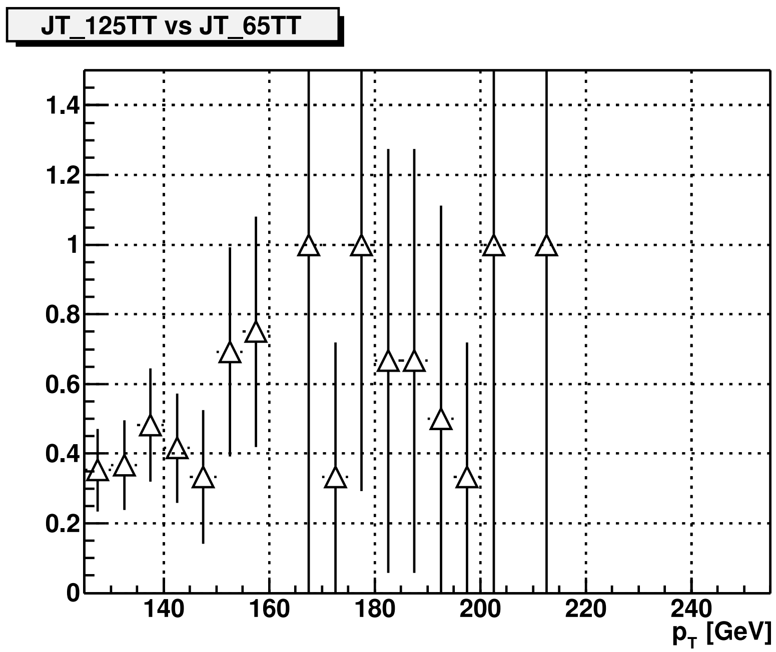


L1 turn-ons : R=0.7, 1jet

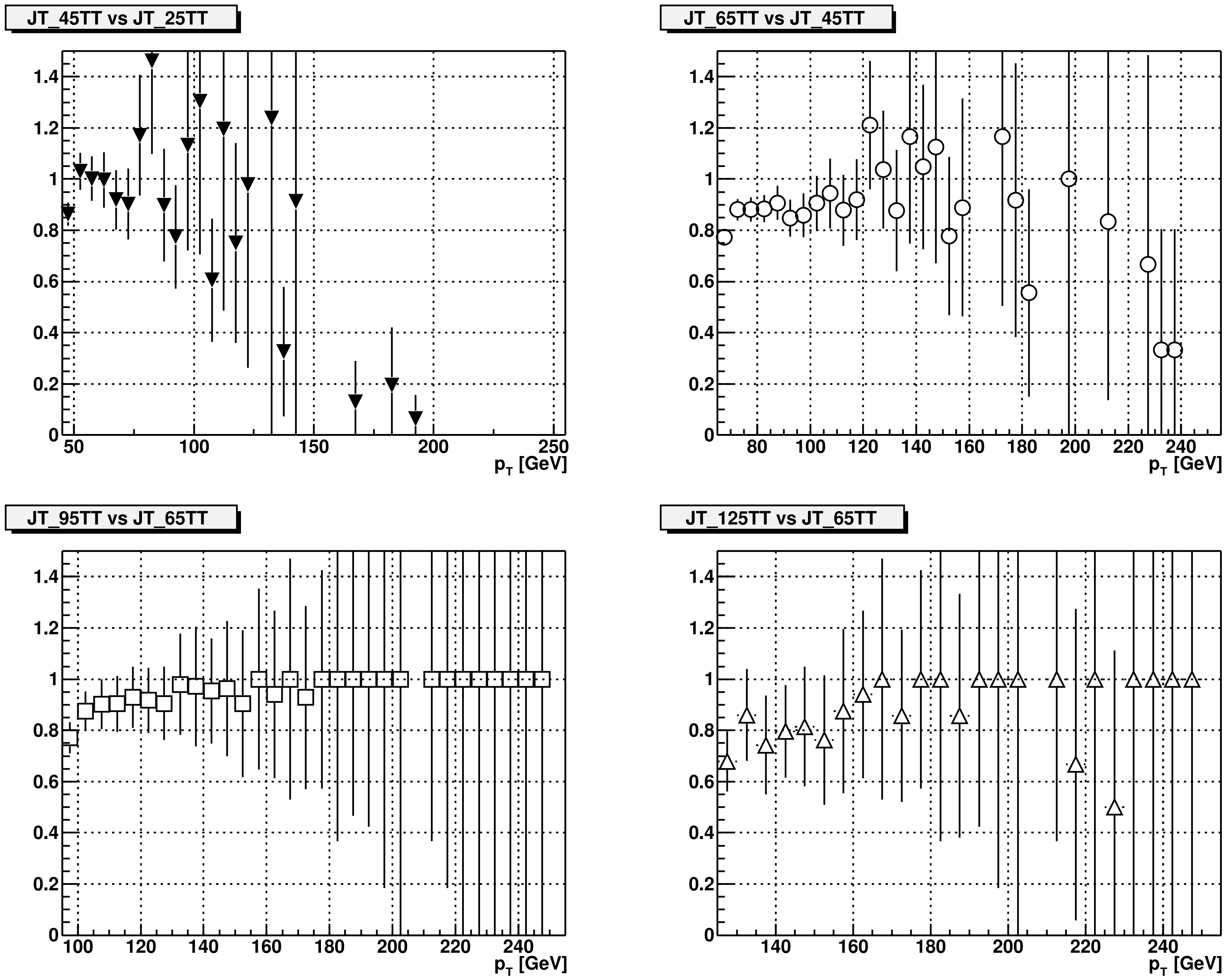




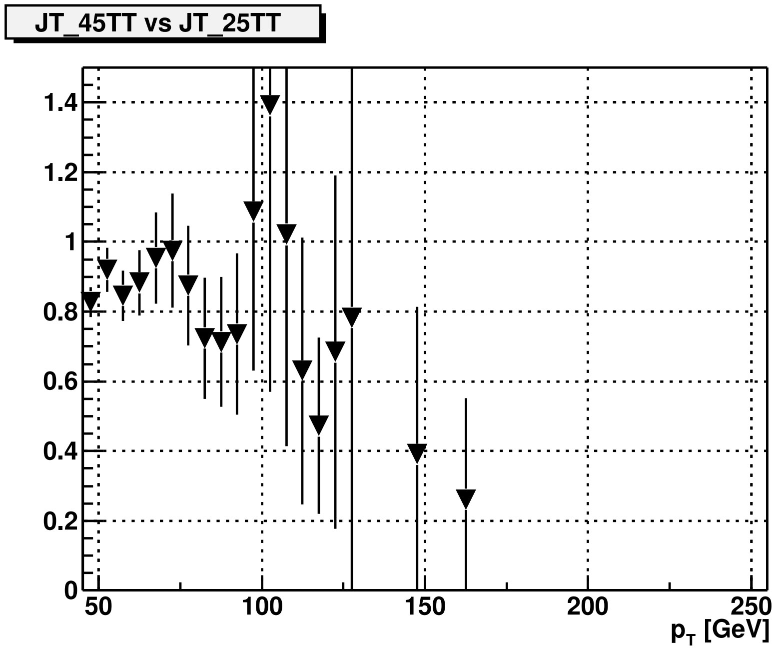


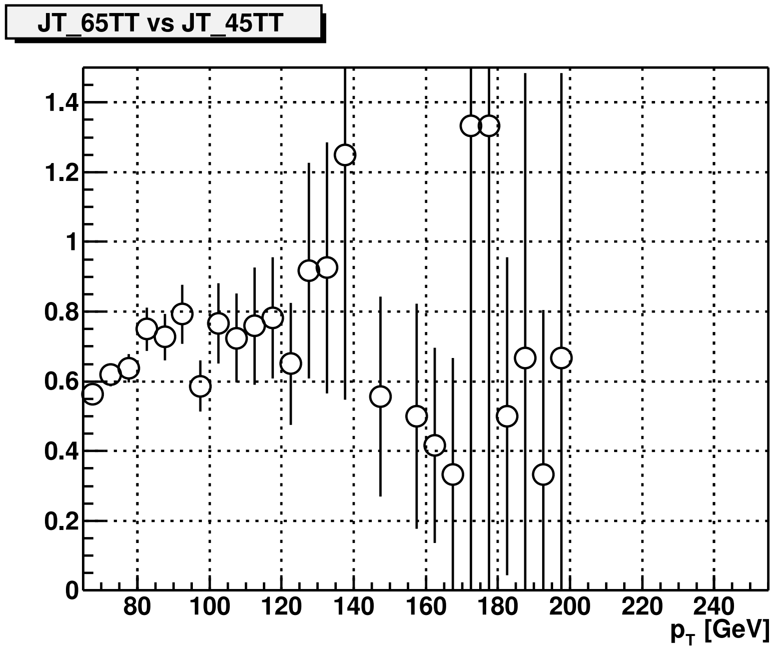


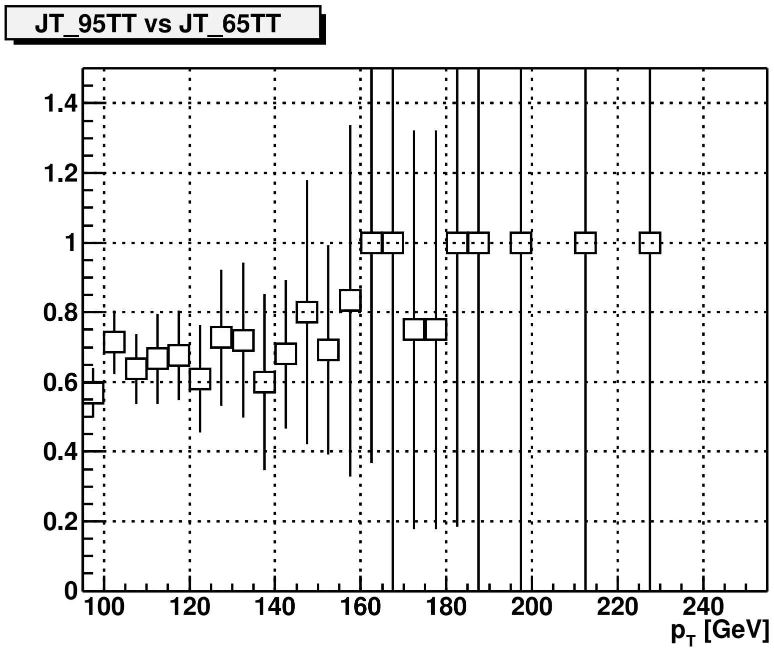
L1 turn-ons : R=0.5, 2jet

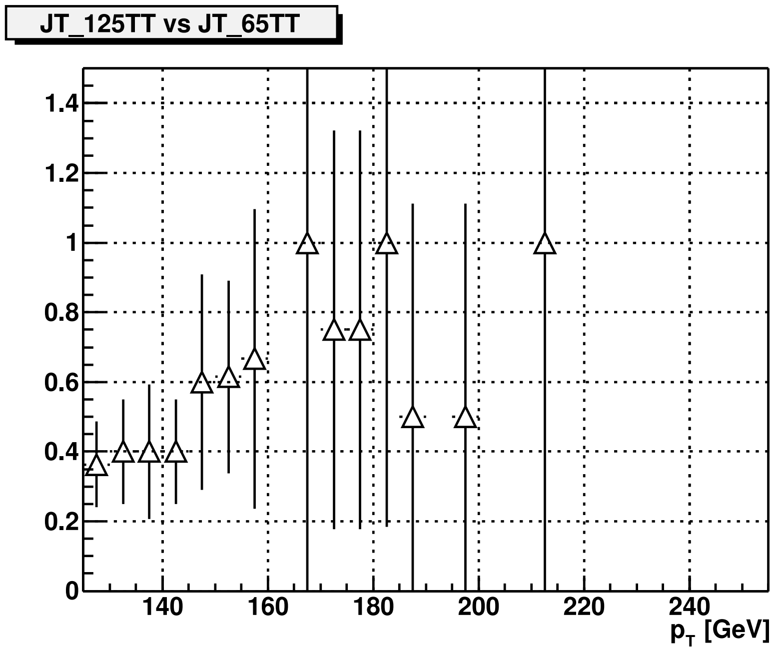


L1 turn-ons : R=0.5, 1jet

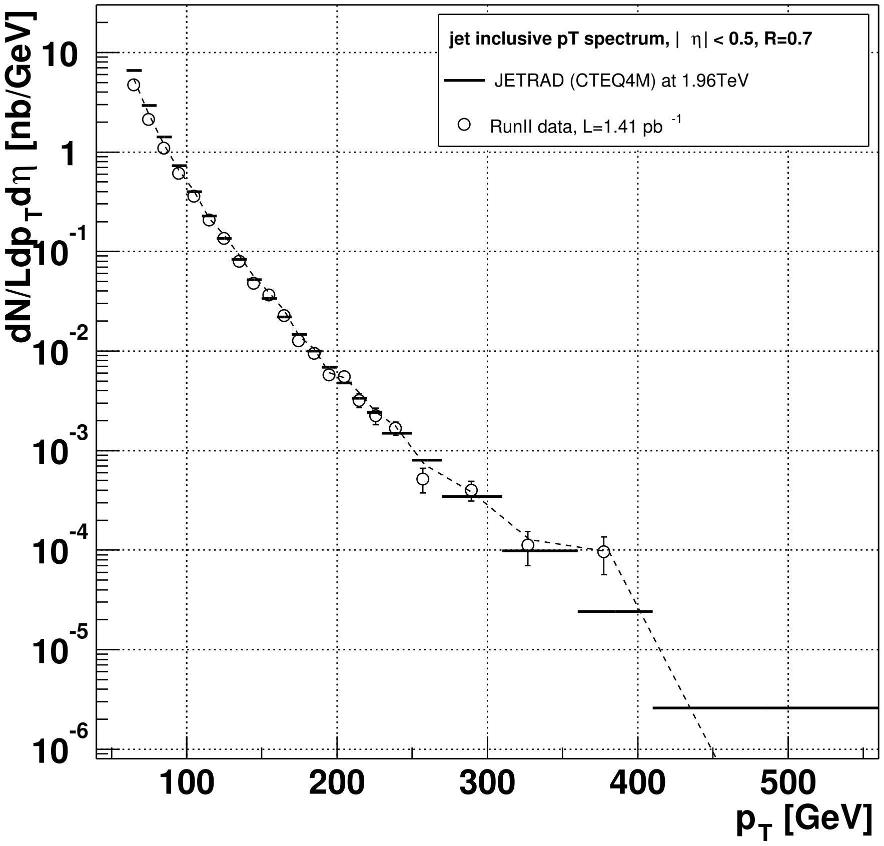


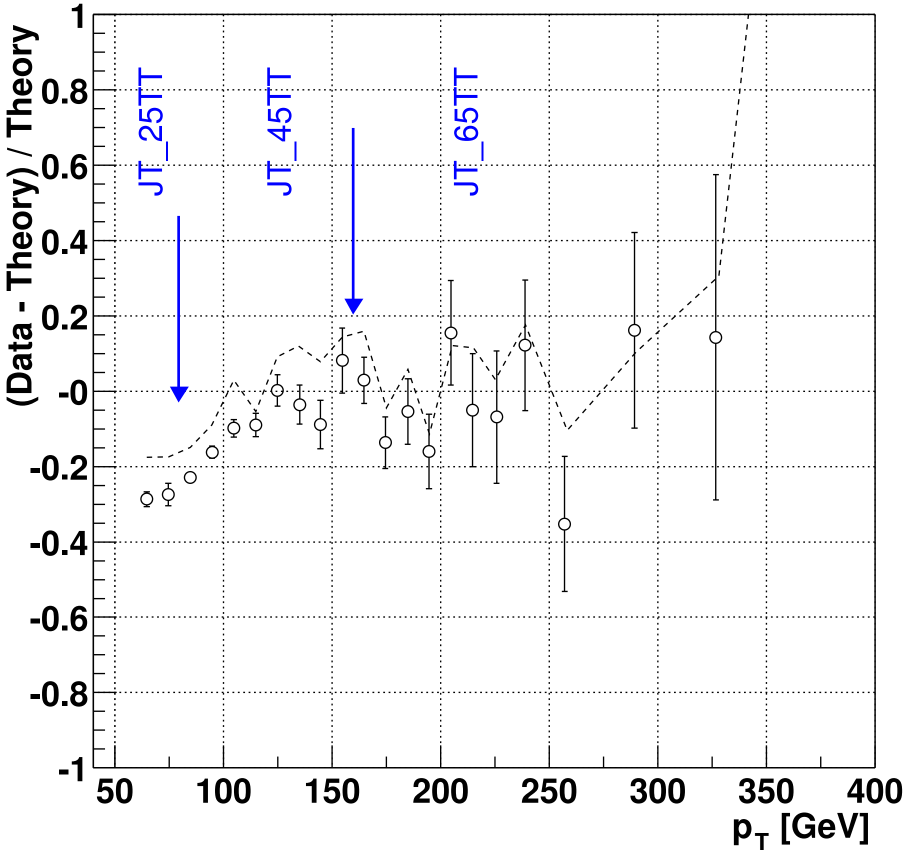






jet inclusive pT spectrum





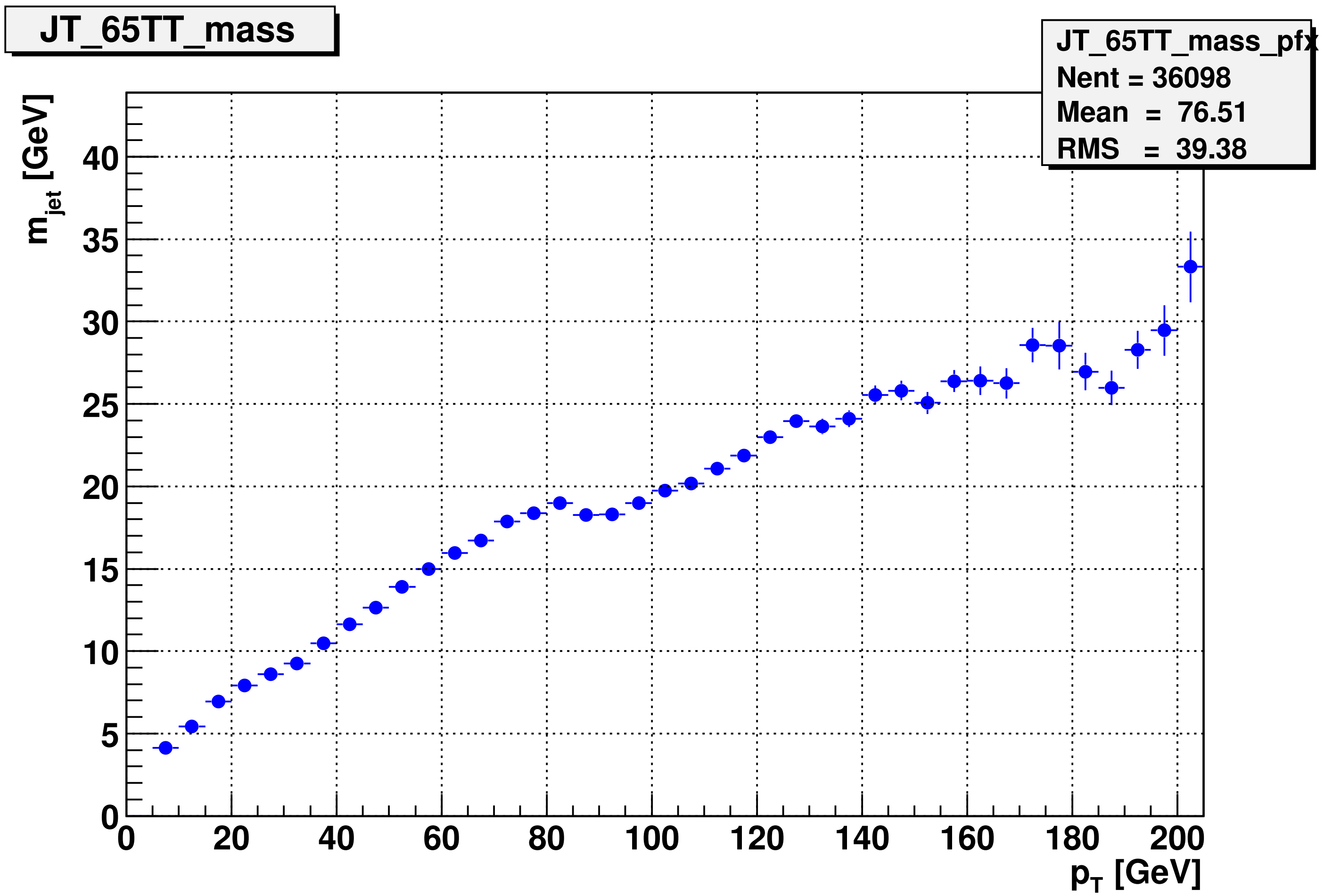
- ▷ *jet mass issue*
  - *about 10% difference in cross section*

jet mass

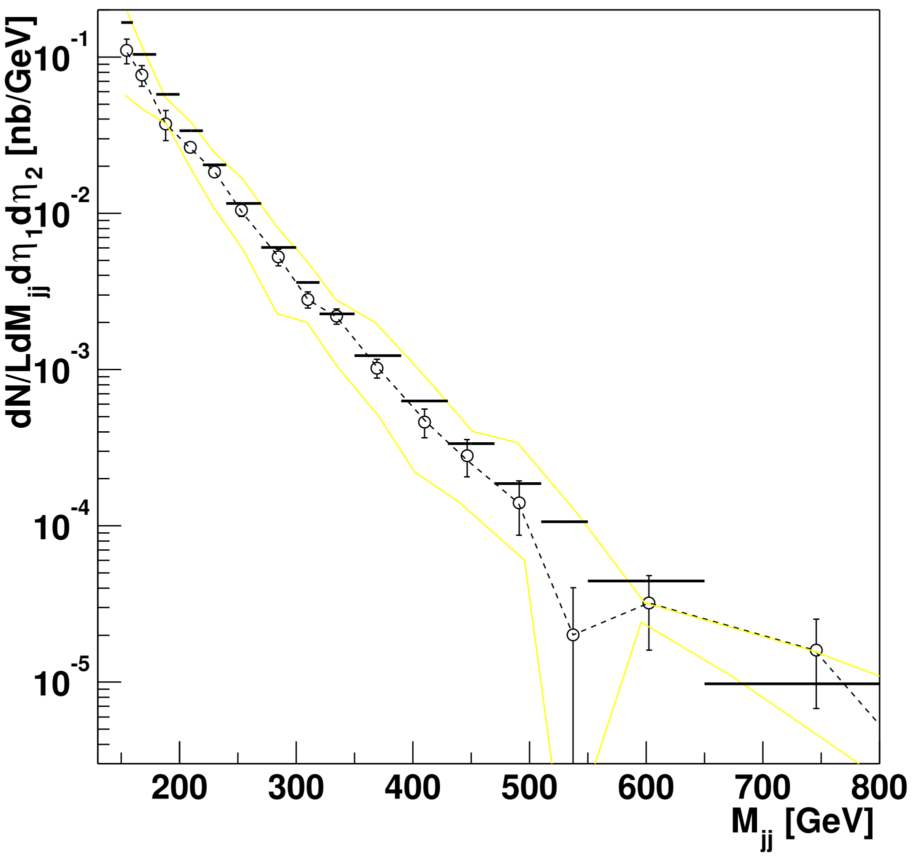
- jet mass is about 12 GeV at $p_T = 50\,\mathrm{GeV}$
  - difference between p_T and E_T is about 3%

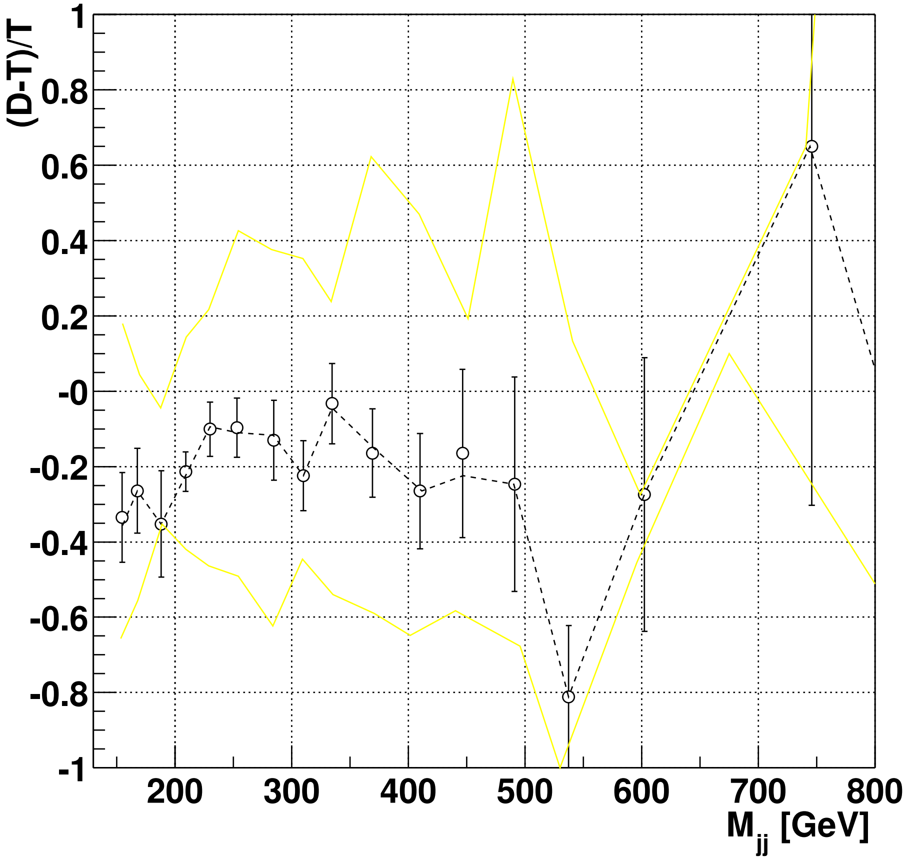
$$\frac{E-p}{E} = \frac{E-\sqrt{E^2-m^2}}{E} \approx \frac{1}{2}\left(\frac{m}{E}\right)^2$$

- is going to be worse(?) after non-linearity corrections



Dijet mass in trigger v. 5

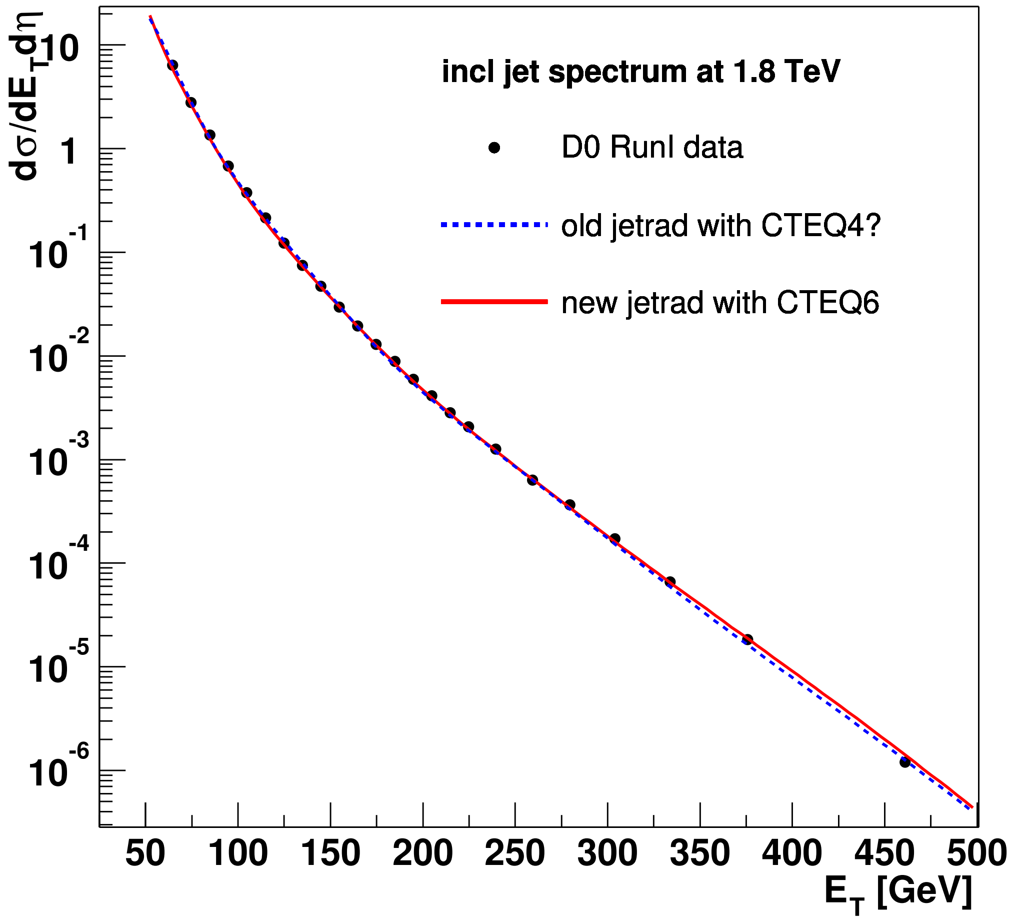




- ▷ dashed line is after η bias corrected
- ▷ yellow lines shows the error from JES

LHAPDF

- The Les Houches Accord Parton Density Functions
  - *defines common interface to the parton distribution functions*
  - *allows to determine PDF errors*
- *two evolution codes*
  - *standart* `QCDNUM`
  - CTEQ *code,* `EVLCTEQ`
- *preliminary* CTEQ6 *is available*
  - *contains set of* 40 PDF
  - *requires* `EVLCTEQ`
- JETRAD
  - *interface to* LHAPDF
  - *the code is the same*



CTEQ6 errors

jet inclusive E_T spectrum at $\sqrt{s} = 1.8$ TeV, propagation of CTEQ6 errors