Effect of new seeding and T42 on μ+jets Top sample (first look)

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- ✗ ***motivation***
- ✗ ***ttbar -> μ + jets cross section analysis***
- ✗ ***reclustering, new seeding, t42 on μ + jet sample***
- ✗ ***μ isolation efficiency***

Motivation

- ✗ *varify that we can recluster, change seeding, use T42 from TMB's (thanks to Emmanuel and Jean-Roch)*

- ✗ *study effect of new seeding (in p14.02) in well defined dataset*

- ✗ *study effect of T42 on jets, electrons, missing Et and* μ

ttbar -> μ + jets cross section analysis

sample:

Moriond'03 dataset 40 pb^{-1}

μ p_T > 20 GeV

missing Et > 20 GeV

further selection:

4 jets, | η | < 2.5, p_T > 15 GeV, tight (top-group) jet id

loose μ isolation (dR (μ , jet) > 0.5)

tight μ isolation (tracks p_T < 2.5 GeV and energy < 2.5 GeV)

topological cuts:

$W p_T$	*> 15 GeV*
Jet E_T	*> 55 GeV*
H_T	*> 220 GeV*
α	*> 0.065*

ttbar -> μ + jets cross section analysis

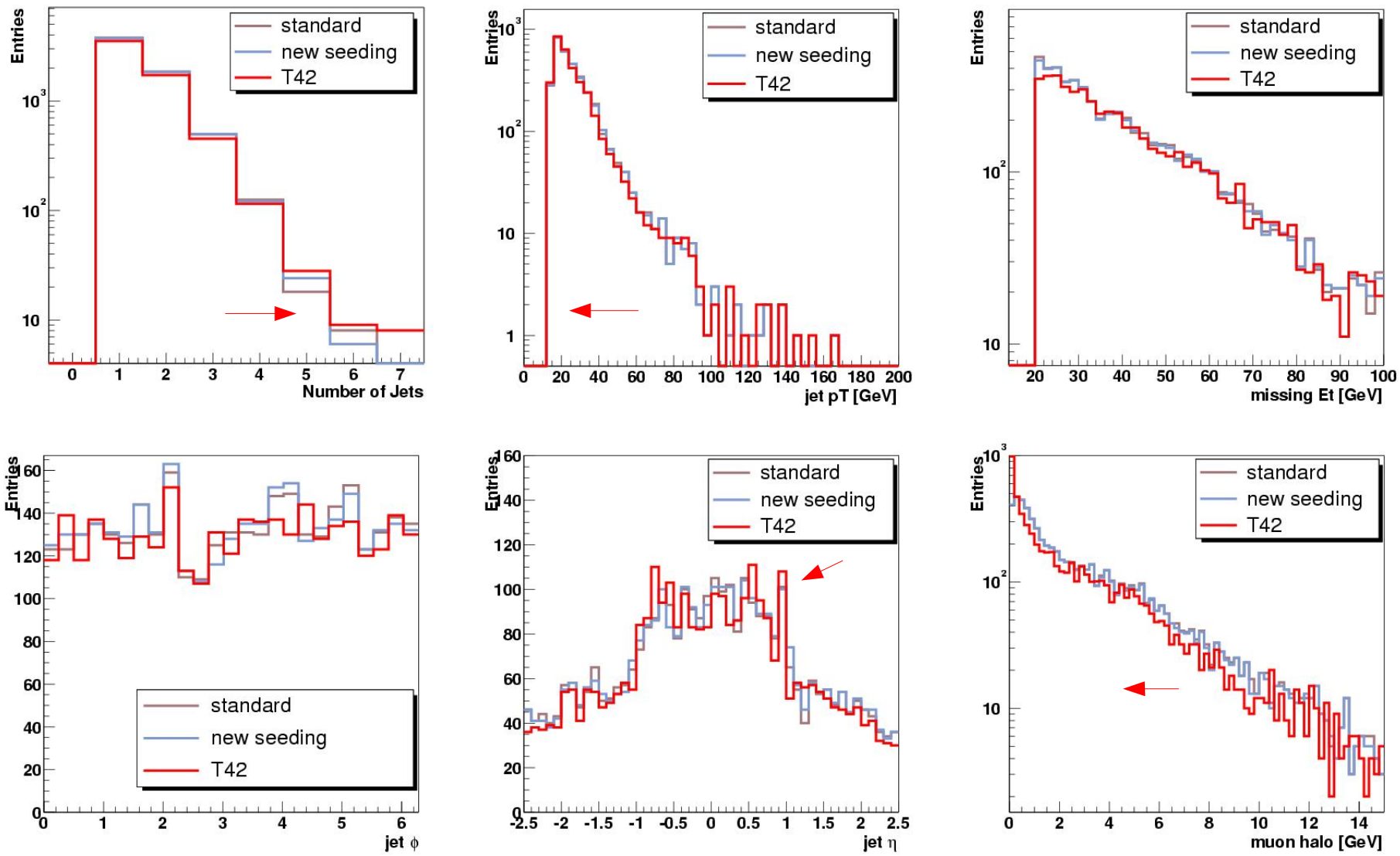
not taken into account:

JES, μ - isolation efficiency and fake rate, MEt (preselection cut)
Jet Id not optimized, ...

do the analysis and just look at the numbers:

	Moriond	new TopAnalyze	recluster	new seeding	T42
sample after preselection	77502	70296	70206	70005	67932
4 jets loose sample	143	147	151	151	167
4 jets tight sample	38	38	38	39	49
candidates	4	4	4	4	5

Some Distributions



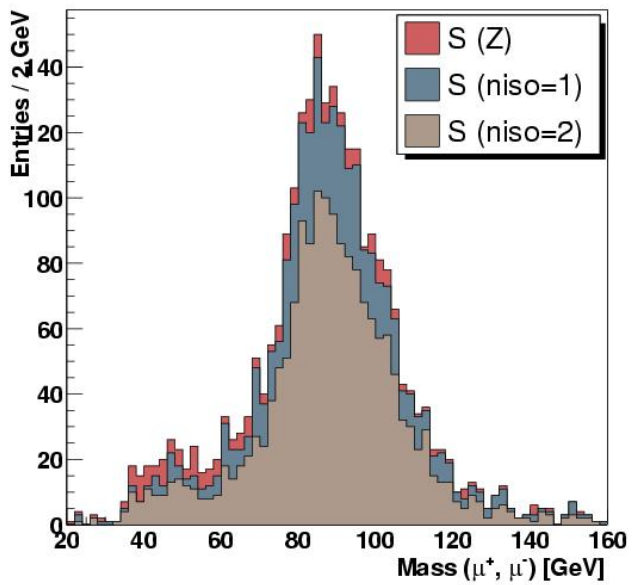
Muon Isolation Eff.

Sample: *two high pt muons: pT1(2) > 20 (15) GeV (~ 4/5 p13 sample)*

Isolation: μ *isolation (tracks pT < 2.5 GeV and energy < 2.5 GeV)*

Efficiency:

$$\varepsilon = \frac{2\,S(n_{iso} = 2) + S(n_{iso} = 1)}{2\,S(Z)}$$



	ε [%]
standard	*83.9 +/- 0.6*
reclustered	*83.9 +/- 0.6*
t42	*84.6 +/- 0.6*

no background subtraction

fake rate study needs to be done!

Conclusion

we can recluster using the modified seeding or run T42 on tmb's.

first look is promising.

JES is needed with T42 if we want to use it for this summer.

further studies on Jets (Id), MEt, μ's, (electrons) are necessary to draw conclusions.