New resolution parameters

- the **new** JER parameters are following

only Energy smearing

$$\sigma/p_T = \mathrm{sqrt}[(p0*p0) + (p1*p1)/p_T + (p2*p2)/(p_T*p_T)\ ]$$

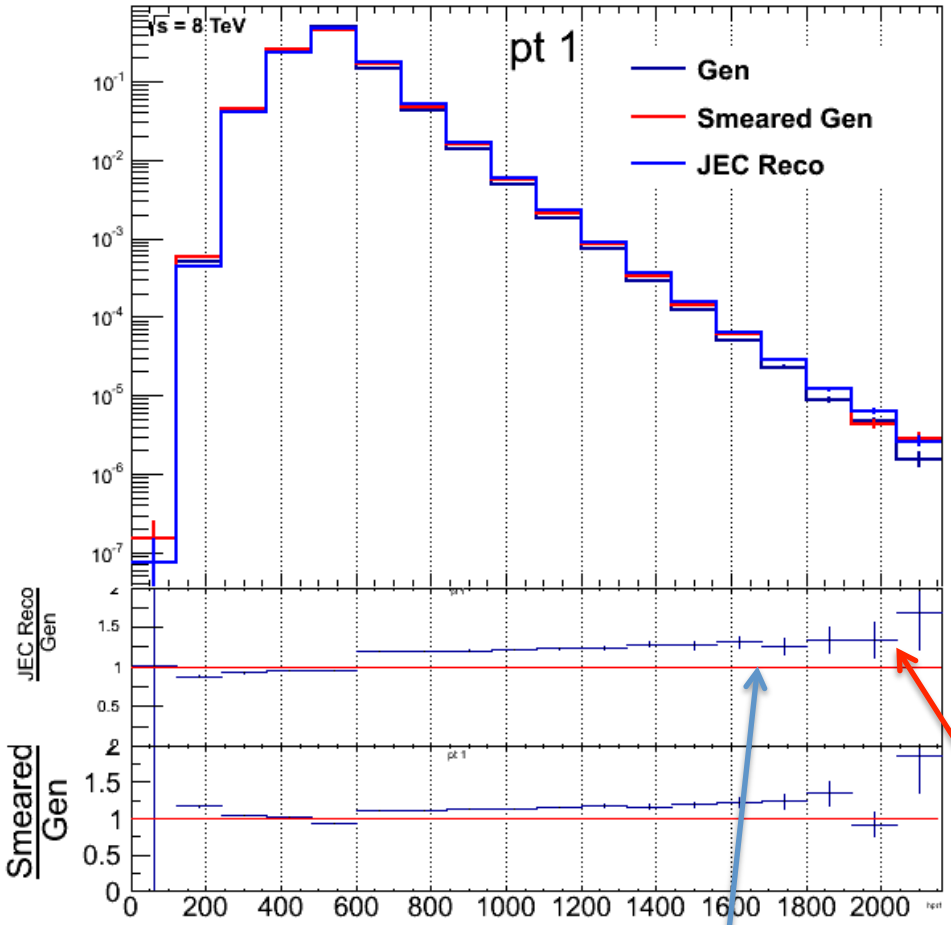
|eta|	p0	p1	p2	scale factor
0-0.5	2.87265e-02	1.01485	5.25613	1.12
0.5-1.0	3.43555e-02	0.949218	5.92528	1.11
1.0-1.5	3.95103e-02	1.00204e	6.07558	1.11
1.5-2.0	1.42866e-02	0.848049	6.67823	1.22
2.0-2.5	1.34450e-02	0.714309	6.77620	1.23
2.5-3.0	2.08877e-07	0.859187	6.84957	1.10

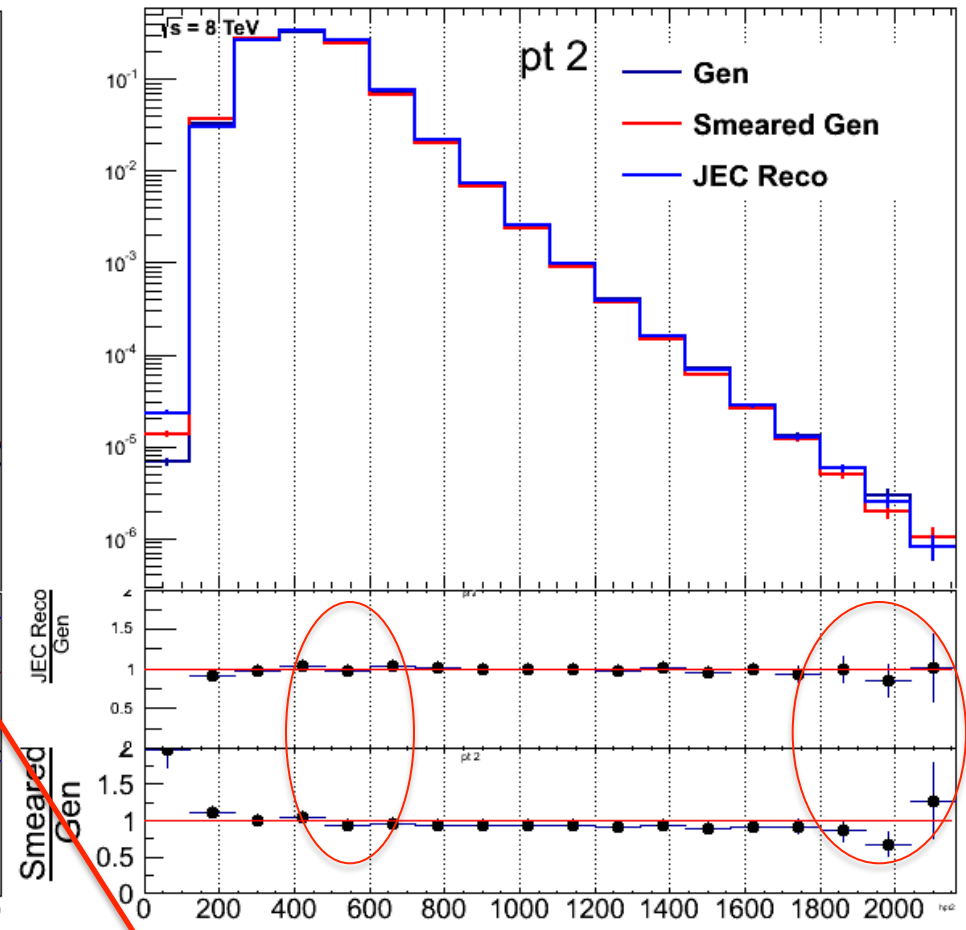
- These are the parameters supplied by Sanmay AN-2012/223 (this assumes a simple Gaussian)
- Earlier I was using the 'official' (7 TeV) parameters as in:

`CondFormats/JetMETObjects/data/Spring10_PtResolution_AK5PF.txt`
which used Double sided Crystal Ball

New smearing: p_{T1}, p_{T2}

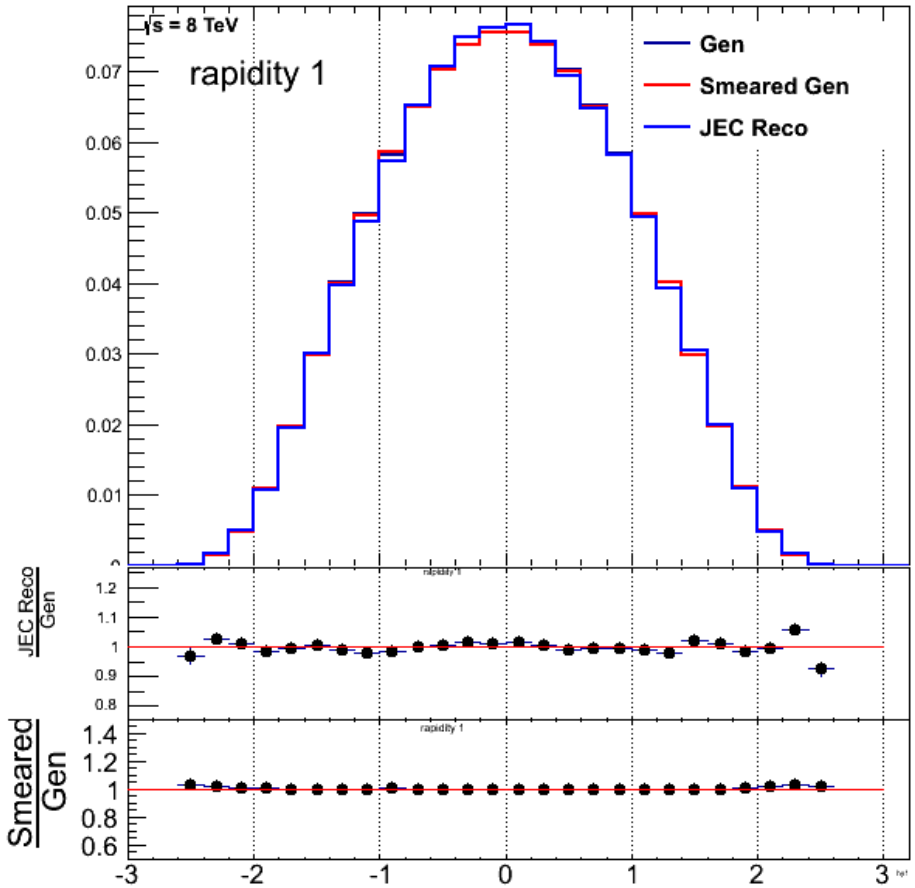
Remember: the new smearing is only energy smearing – and it's a Gaus, not double-sided C. Ball

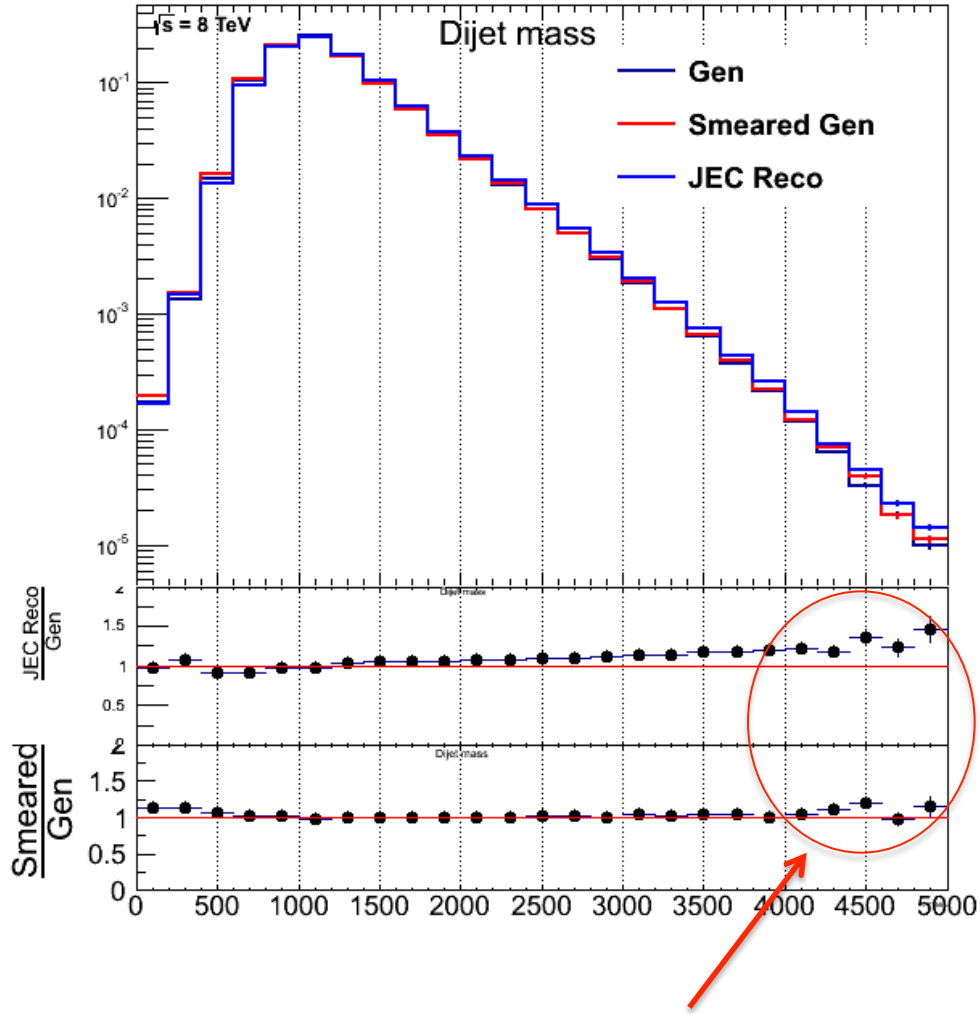




Smearing seems to sort of work! (but not everywhere)

New smearing: Rapidity(jet_1), M_{jj}

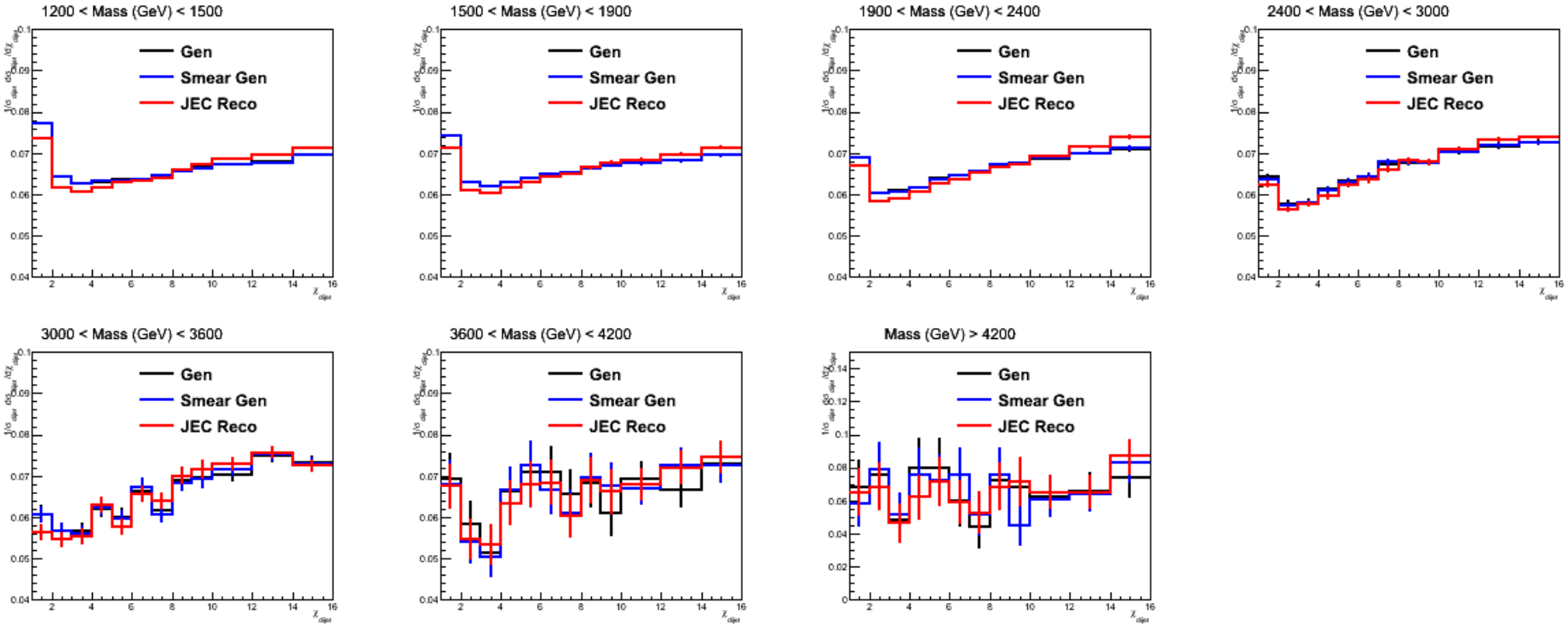




Smearing is not working well for M_{jj}

New smearing: χ overlay plots

chi = exp(0.5*fabs((jetVar[0].Y-jetVar[1].Y)); (Y is the Rapidity)

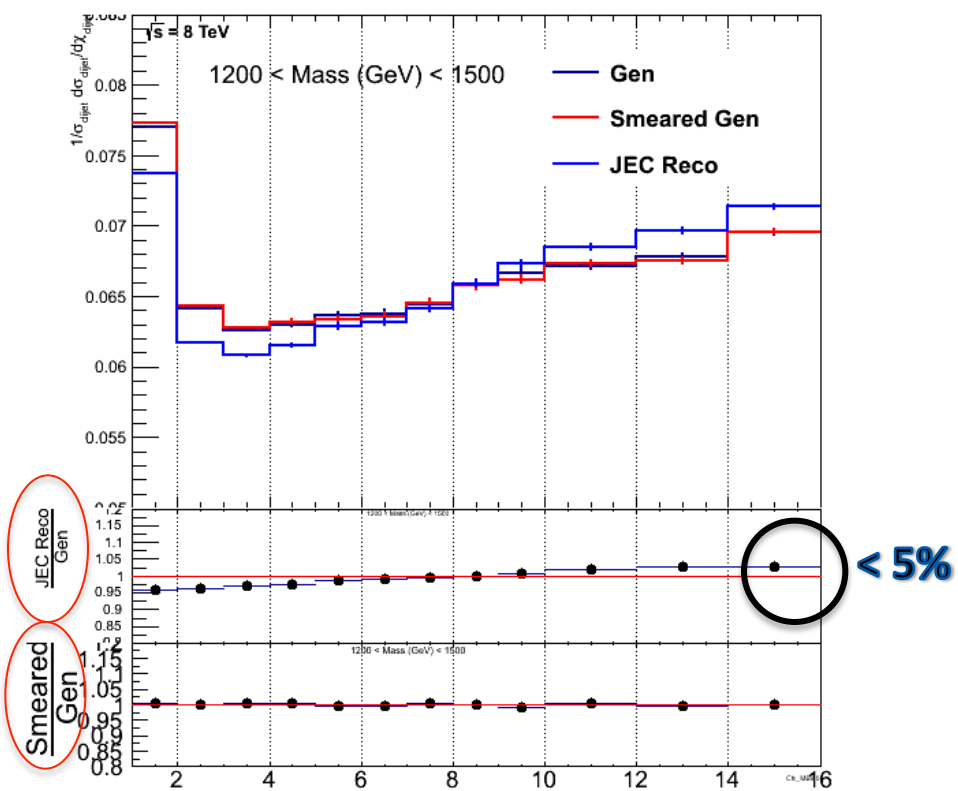


detailed plots: next slides

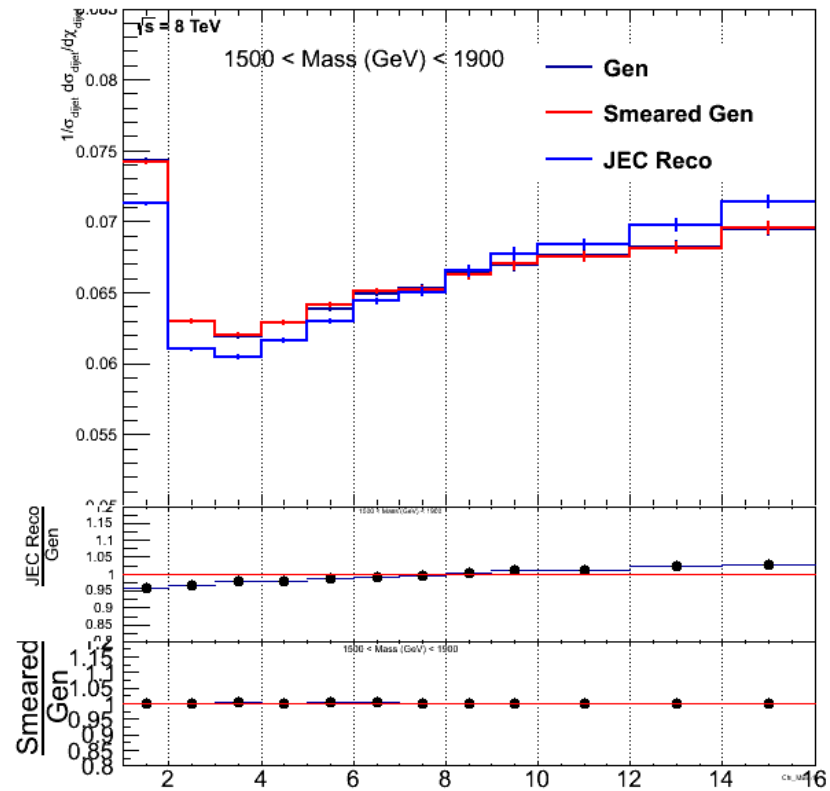
Note: Legend changes color
now JEC Reco in Red
earlier Smeared Gen was in Red

New smearing: χ

$1200 < M_{jj} < 1500$



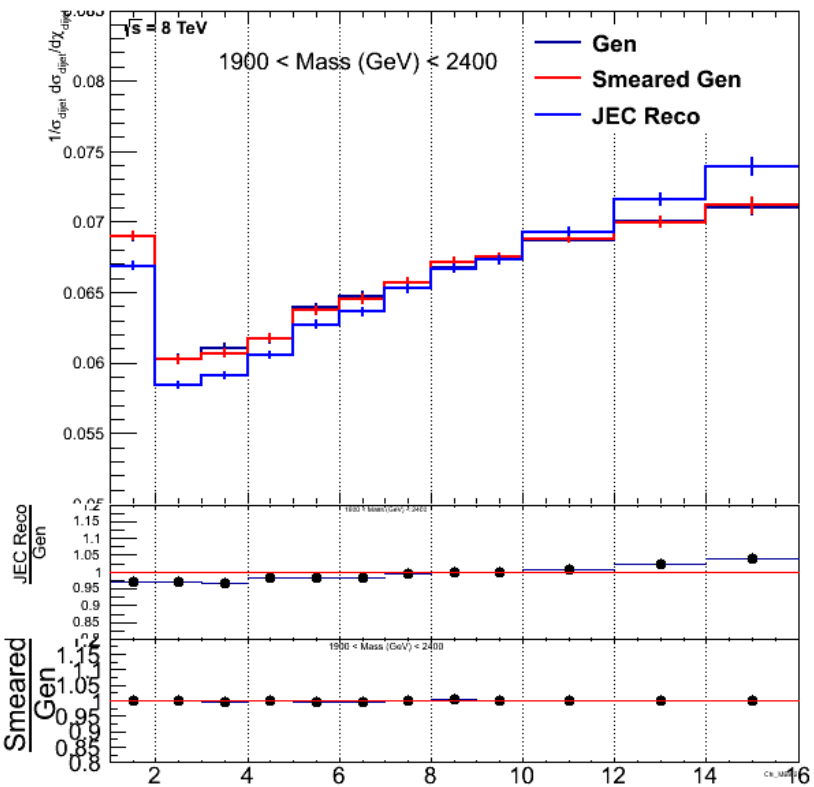
$1500 < M_{jj} < 1900$



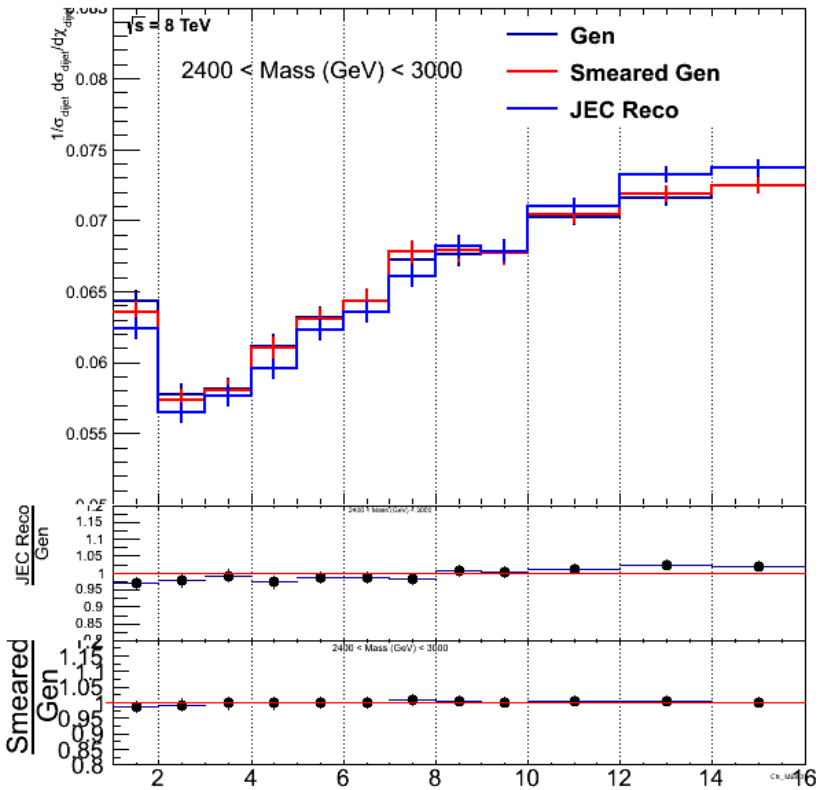
Smearing fails – very little effect!

New smearing: χ

$1900 < M_{jj} < 2400$



$2400 < M_{jj} < 3000$



Smearing fails – very little effect!