

Jet Substructure and the Diboson Excess

BDRS:

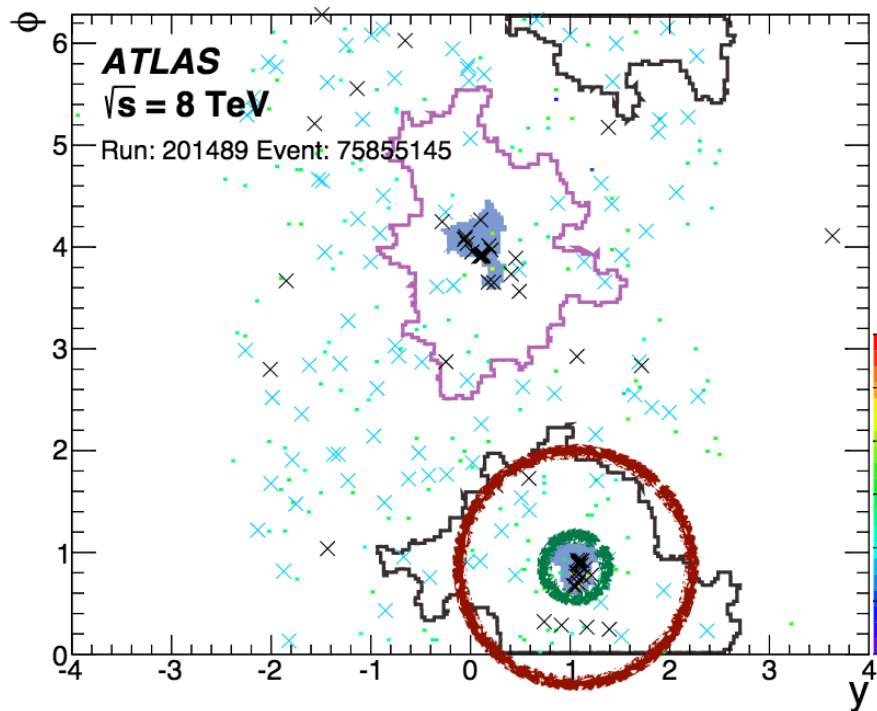
C/A with Mass Drop plus Filtering

$R = 1.2$

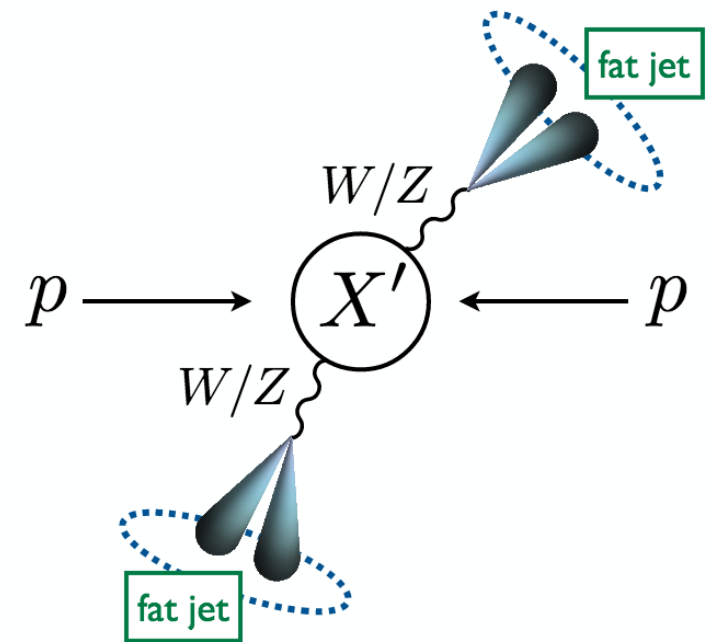
No mass drop
 $\text{sqrt}(y) > 0.2$

$R_{\text{filt}} = 0.3$

$N_{\text{filt}} = 3$



$$\Delta R \simeq \frac{2m_W}{p_T} \simeq 0.3$$



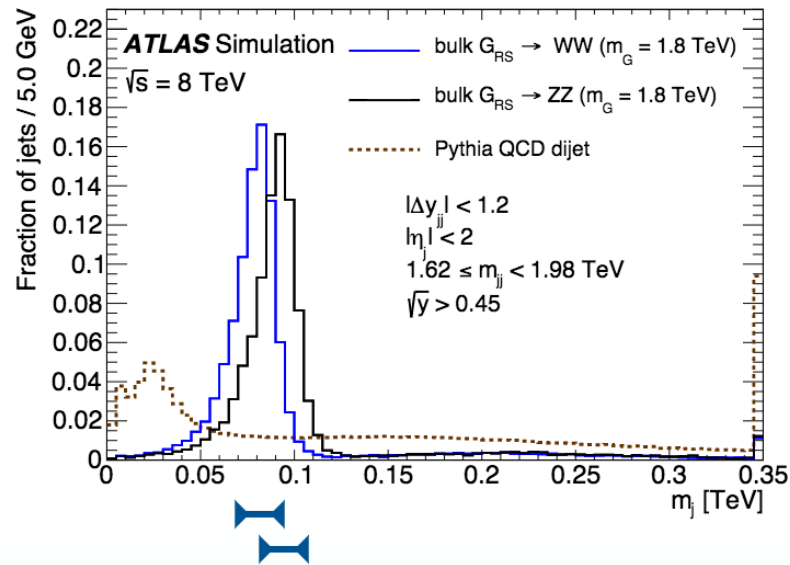
ATLAS Discriminant Variables:

Groomed Jet Mass,
Momentum Balance, Charged Multiplicity

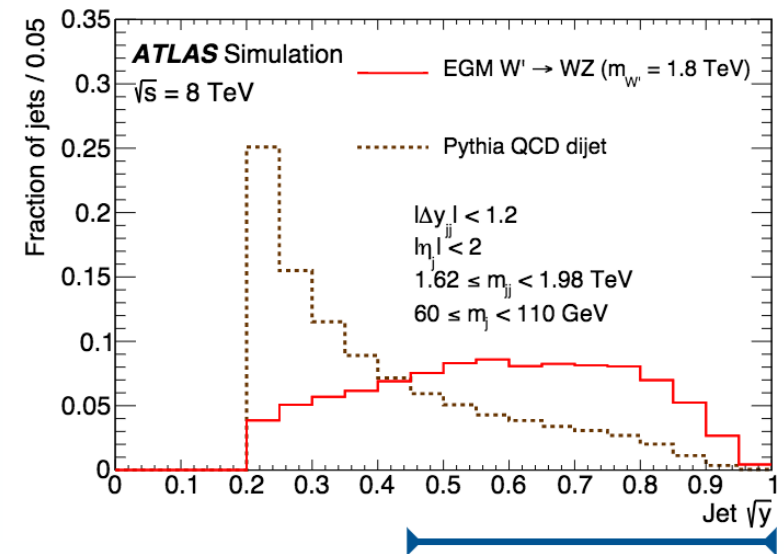
Compare to CMS:

C/A $R = 0.8$ with Pruning
N-subjettiness

Groomed Jet Mass

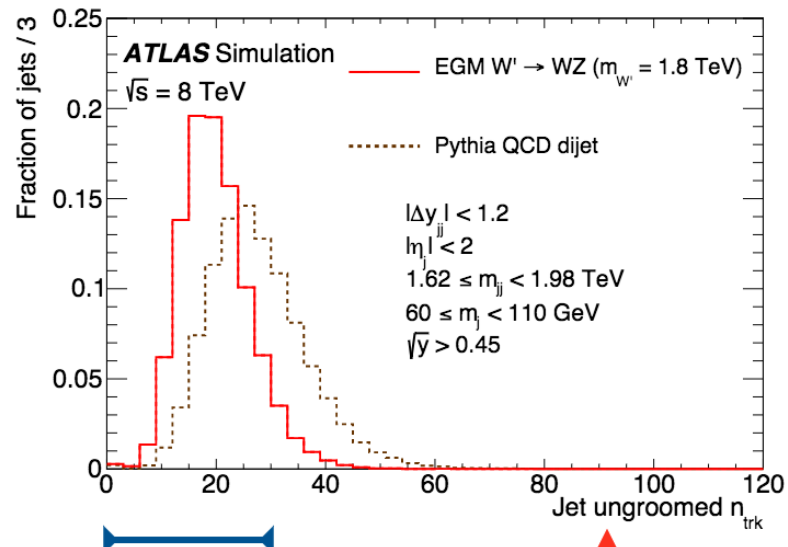


Momentum Balance



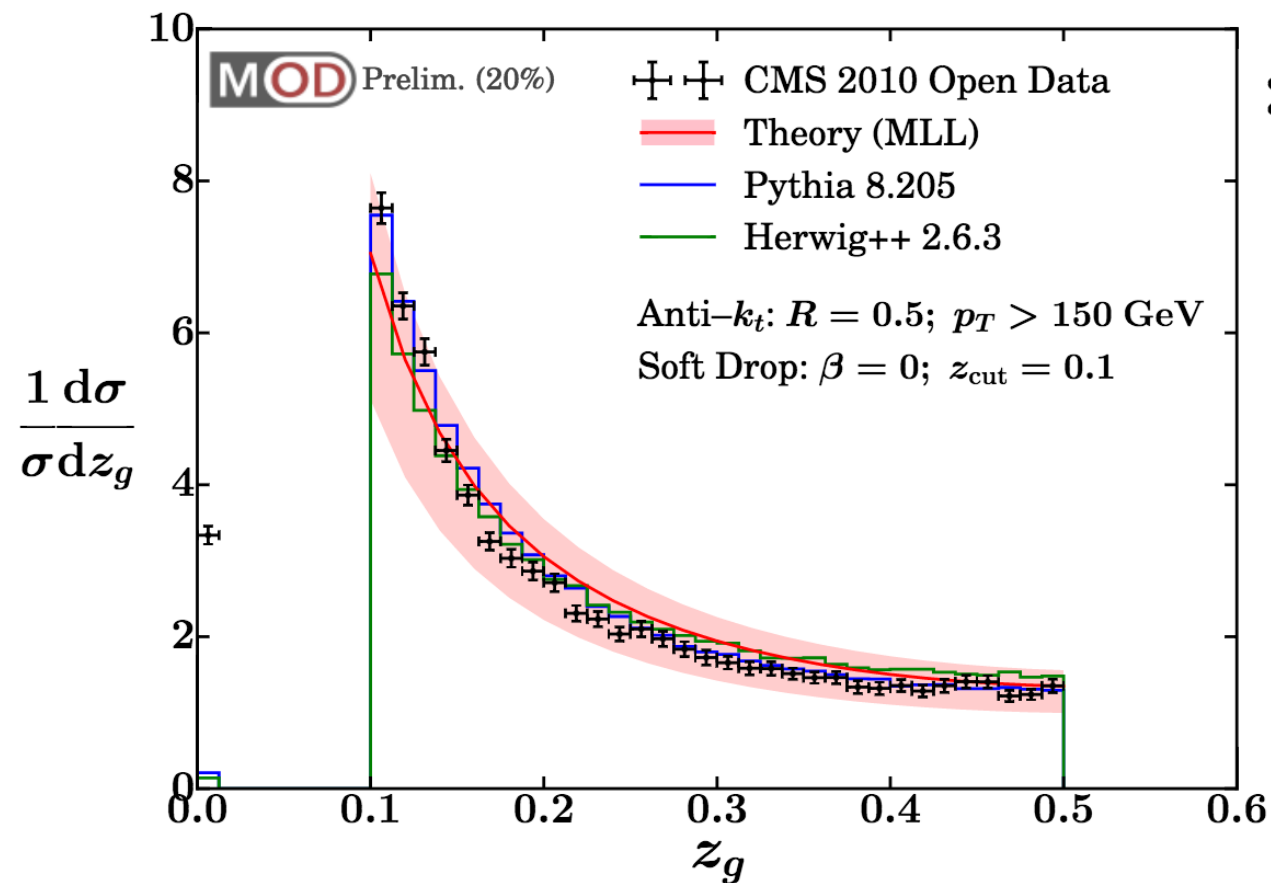
$$\begin{array}{c} | - z \\ z \end{array} \approx \sqrt{y}$$

Charged Multiplicity

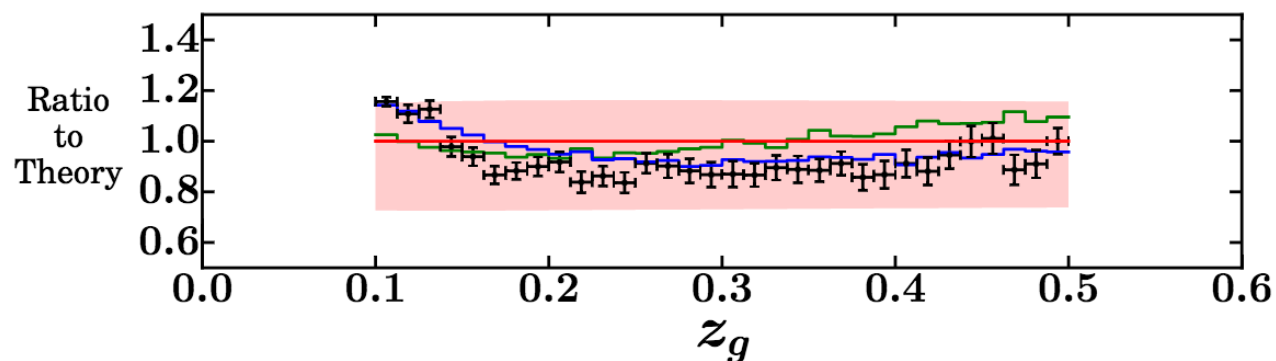




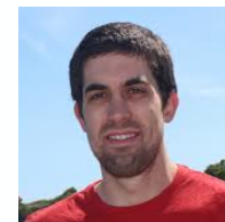
Advertisement: CMS Open Data



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Aashish Tripathy



Wei Xue



CMS advice from Sal Rappoccio



