

13000 GeV pp

 $t\bar{t}$ $m(t\bar{t})$ (cms2021-lh) 10^{-2} 10^{-3} 10^{-4} 10^{-5} 10^{-6} 10^{-7} 

CMS



Pythia 8.315 default



Pythia 8.315 tune-2c



Pythia 8.315 tune-2m

(CMS_2021_I1901295)

Rivet 4.1.0, $\geq 100k$ events

mcplots.cern.ch [arXiv:1306.3436]

Ratio to CMS

2

1

0.5

2

1

0.5

0

1000

2000

3000

The figure consists of two vertically stacked plots sharing a common x-axis representing the $t\bar{t}$ invariant mass $m(t\bar{t})$ in GeV, ranging from 0 to 3500. The top plot shows the differential cross-section on a logarithmic y-axis from 10^{-7} to 10^{-2} . It compares CMS data (black squares) with three Pythia 8.315 tunes: default (blue solid line with triangles), tune-2c (orange dashed line with circles), and tune-2m (orange dotted line with open circles). The bottom plot shows the ratio of the Monte Carlo predictions to the CMS data on a linear y-axis from 0.5 to 2.0. The same three Pythia tunes are shown. A horizontal line at 1.0 represents the ratio of 1. Two shaded regions, green (inner) and yellow (outer), indicate the uncertainty bands. The text '(CMS_2021_I1901295)' is present in the bottom plot. The top plot is labeled '13000 GeV pp' and ' $t\bar{t}$ '. The bottom plot is labeled 'Ratio to CMS'. The x-axis is labeled ' $m(t\bar{t})$ (cms2021-lh)'.