

8000 GeV pp

Z (Drell-Yan)

 $\Delta\eta(\text{ll})$ ($116 < m_{\text{ll}} < 150$ GeV)Rivet 4.1.0, ≥ 1.6 M events

mcplots.cern.ch [arXiv:1306.3436]

(ATLAS_2016_I1467454)

- ATLAS
- Pythia 6.428 350
- △ Pythia 6.428 370
- △ Pythia 6.428 380
- Pythia 6.428 p0
- Pythia 6.428 p2010

Ratio to ATLAS

10^{-1}

10^{-2}

10^{-3}

10^{-4}

2

1

0.5

2

0

1

2

The figure displays two panels related to Z boson production in 8000 GeV pp collisions. The top panel shows the cross-section in fb as a function of $\Delta\eta(\text{ll})$ for $116 < m_{\text{ll}} < 150$ GeV. The y-axis is logarithmic, ranging from 10^{-4} to 10^{-1} fb. The x-axis ranges from 0 to 2.5. Data points from ATLAS (black squares) are compared with several Pythia 6.428 models: Pythia 6.428 350 (yellow squares), Pythia 6.428 370 (red triangles), Pythia 6.428 380 (green triangles), Pythia 6.428 p0 (black circles), and Pythia 6.428 p2010 (black squares with a cross). The bottom panel shows the ratio of the cross-section to the ATLAS data, with the y-axis ranging from 0.5 to 2. The x-axis is the same as the top panel. The ratio is shown for the same models, with shaded regions indicating the uncertainty of the ATLAS data. The ratio is generally close to 1, indicating good agreement between the models and the ATLAS data.