

7000 GeV pp

Jets

 $\overline{N}_{\text{jet}}$ N_{jet} vs Δy (FB) ($70 < p_T < 90$ ($Q_0 = \overline{p_T}$))

- ATLAS
- - □ Herwig 7.2.0 default
- - ▲ Pythia 8.183 default
- - ◆ Sherpa 1.4.0 default

1

0.8

0.6

0.4

0.2

0

2

1

0.5

Rivet 3.1.0, ≥ 5.4 M events

mcplots.cern.ch [arXiv:1306.3436]

ATLAS_2011_S9126244

Ratio to ATLAS

2

1

0.5

$|\Delta y|$

The figure displays two panels. The top panel shows the average number of jets, $\overline{N}_{\text{jet}}$, as a function of the absolute rapidity separation, $|\Delta y|$. The bottom panel shows the ratio of the average number of jets to the ATLAS measurement, $\overline{N}_{\text{jet}} / \overline{N}_{\text{jet}}^{\text{ATLAS}}$, as a function of $|\Delta y|$. The ATLAS data is represented by black squares. The Monte Carlo models are represented by different symbols and line styles: Herwig 7.2.0 (green dashed line with open squares), Pythia 8.183 (blue solid line with solid triangles), and Sherpa 1.4.0 (red dotted line with solid diamonds). The bottom panel also includes shaded regions representing the uncertainty bands for the Monte Carlo models: yellow for Herwig, green for Pythia, and red for Sherpa.

$ \Delta y $	ATLAS $\overline{N}_{\text{jet}}$	Herwig 7.2.0 $\overline{N}_{\text{jet}}$	Pythia 8.183 $\overline{N}_{\text{jet}}$	Sherpa 1.4.0 $\overline{N}_{\text{jet}}$	Herwig Ratio	Pythia Ratio	Sherpa Ratio
0.2	0.01	0.01	0.01	0.01	0.8	0.9	1.1
0.7	0.04	0.04	0.04	0.04	0.9	0.9	1.1
1.2	0.07	0.07	0.07	0.07	0.9	0.9	0.9
1.7	0.10	0.10	0.10	0.09	1.0	1.0	0.9
2.2	0.13	0.13	0.13	0.11	1.0	1.0	0.9
2.7	0.16	0.17	0.16	0.13	1.0	1.0	0.9
3.2	0.19	0.21	0.20	0.16	1.1	1.1	0.9
3.7	0.23	0.25	0.24	0.19	1.0	1.0	0.8
4.2	0.27	0.30	0.28	0.23	1.1	1.1	0.9
4.7	0.32	0.35	0.33	0.27	1.0	1.0	0.9
5.2	0.38	0.41	0.36	0.32	0.9	0.9	0.8
5.7	0.44	0.46	0.38	0.36	1.0	0.9	0.8