

Gap fraction

Gap fraction vs Δy (FB) ($210 < p_T < 240$ ($Q_0 = \bar{p}_T$))

- ATLAS
- - □ Herwig 7.2.0 default
- - ▲ Pythia 8.165 default
- - ◆ Sherpa 2.2.0 default

2.5

2

1.5

1

0.5

0

ATLAS_2011_S9126244

Rivet 3.1.0, $\geq 100k$ events

mcplots.cern.ch [arXiv:1306.3436]

Ratio to ATLAS

2

1

0.5

2

1

0.5

0

2

4

6

$|\Delta y|$

The figure displays two panels comparing ATLAS experimental data with three Monte Carlo models: Herwig 7.2.0, Pythia 8.165, and Sherpa 2.2.0. The top panel shows the gap fraction, which is the fraction of events with a gap between two jets. The bottom panel shows the ratio of the gap fraction to the ATLAS data. The x-axis for both panels is the absolute rapidity difference $|\Delta y|$, ranging from 0 to 6. The y-axis for the top panel is the gap fraction, ranging from 0 to 2.5. The y-axis for the bottom panel is the ratio to ATLAS, ranging from 0.5 to 2.0. The ATLAS data points are shown as black squares with error bars. The Monte Carlo models are shown as lines with markers: Herwig 7.2.0 (green squares), Pythia 8.165 (blue triangles), and Sherpa 2.2.0 (red diamonds). The bottom panel also includes a shaded region representing the ratio to ATLAS, with a yellow region for $|\Delta y| < 4$ and a green region for $|\Delta y| > 4$. The text 'ATLAS_2011_S9126244' is visible in the top panel, and 'Rivet 3.1.0, $\geq 100k$ events' and 'mcplots.cern.ch [arXiv:1306.3436]' are visible on the right side of the top panel.

$ \Delta y $	ATLAS Gap Fraction	Herwig 7.2.0 Gap Fraction	Pythia 8.165 Gap Fraction	Sherpa 2.2.0 Gap Fraction	Ratio to ATLAS
0.5	1.0	1.0	1.0	1.0	1.0
1.0	0.95	0.95	0.95	0.95	1.0
1.5	0.9	0.9	0.9	0.85	1.0
2.0	0.9	0.85	0.9	0.9	1.0
2.5	0.85	0.8	0.85	0.9	1.0
3.0	0.8	0.75	0.8	0.85	1.0
3.5	0.75	0.65	0.8	0.65	1.0
4.0	0.65	0.6	0.35	0.65	1.0
4.5	0.45	0.4	0.75	0.65	1.0
5.0	0.3	0.4	1.0	0.85	1.0
5.5	0.0	-	-	1.0	1.0