

Gap fraction

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

- ATLAS
- - □ Herwig 7.1.0 default
- - ▲ Pythia 8.170 default
- - ◆ Sherpa 2.2.8 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 Monte Carlo (MC) models for gap fractions in 7000 GeV pp collisions. The top panel shows the gap fraction, and 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 (0 to 2.5), and for the bottom panel is the ratio to ATLAS (0.5 to 2). The ATLAS data is represented by black squares with error bars. The MC models are: Herwig 7.1.0 (green dashed line with open squares), Pythia 8.170 (blue solid line with solid triangles), and Sherpa 2.2.8 (red dotted line with solid diamonds). The bottom panel also features a shaded region: yellow for $|\Delta y| < 4.5$ and green for $4.5 < |\Delta y| < 5.5$, representing the ATLAS data uncertainty. The text 'ATLAS_2011_S9126244' is present in the top panel, and 'Rivet 3.1.0, $\geq 100k$ events' and 'mcplots.cern.ch [arXiv:1306.3436]' are on the right side.

$ \Delta y $	ATLAS (Gap Fraction)	Herwig 7.1.0 (Gap Fraction)	Pythia 8.170 (Gap Fraction)	Sherpa 2.2.8 (Gap Fraction)
0.3	1.0	1.0	1.0	1.0
0.8	0.95	0.95	0.95	0.95
1.3	0.95	0.9	0.95	0.95
1.8	0.95	0.95	0.95	0.95
2.3	0.9	0.9	0.9	0.9
2.8	0.85	0.8	0.85	0.85
3.3	0.85	0.85	0.75	0.7
3.8	0.8	0.6	0.8	0.6
4.3	0.7	0.85	0.8	0.6
4.8	0.5	0.5	0.35	0.5
5.3	0.35	1.0	-	-
5.8	0.0	-	-	-