

Gap fraction

Gap fraction vs Δy (FB) ($120 < p_T < 150$ ($Q_0 = \bar{p}_T$))

- ATLAS
- - □ Herwig 7.2.0 default
- - ◆ Sherpa 2.2.5 default

2

1.8

1.6

1.4

1.2

1.0

0.8

0.6

0.4

0.2

0

Rivet 3.1.0, $\geq 100k$ events

mcplots.cern.ch [arXiv:1306.3436]

ATLAS_2011_S9126244

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 Herwig 7.2.0 and Sherpa 2.2.5 Monte Carlo models for gap fractions in 7000 GeV pp collisions. The top panel shows the gap fraction (y-axis, 0 to 2) versus the rapidity separation $|\Delta y|$ (x-axis, 0 to 6). The bottom panel shows the ratio of the gap fraction to the ATLAS data (y-axis, 0.5 to 2) versus $|\Delta y|$. The ATLAS data points are black squares, Herwig 7.2.0 default is green squares, and Sherpa 2.2.5 default is red diamonds. Both panels include error bars. The top panel also includes Rivet 3.1.0 statistics ($\geq 100k$ events) and a reference to mcplots.cern.ch [arXiv:1306.3436]. The bottom panel includes shaded regions representing uncertainty bands for the Herwig and Sherpa models.

$ \Delta y $	ATLAS Gap Fraction	Herwig 7.2.0 Gap Fraction	Sherpa 2.2.5 Gap Fraction	Ratio to ATLAS (Herwig)	Ratio to ATLAS (Sherpa)
0.4	1.0	1.0	1.0	1.0	1.0
0.8	0.97	0.97	0.97	1.0	1.0
1.2	0.94	0.94	0.94	1.0	1.0
1.6	0.92	0.92	0.92	1.0	1.0
2.2	0.88	0.88	0.90	1.0	1.0
2.8	0.85	0.78	0.88	0.92	1.0
3.2	0.82	0.74	0.82	0.90	1.0
3.6	0.78	0.82	0.72	1.0	0.92
4.2	0.72	0.72	0.78	1.0	1.0
4.8	0.65	0.72	0.68	1.0	1.0
5.2	0.58	0.65	0.62	1.0	1.0
5.6	0.52	0.35	0.52	0.68	0.98