

Gap fraction

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

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

2

1.5

1

0.5

0

Rivet 3.1.0, ≥ 100 k 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 absolute rapidity difference $|\Delta y|$ (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 $|\Delta y|$ (x-axis, 0 to 6). The ATLAS data points are black squares with error bars. The Herwig 7.2.0 default model is shown as a green dashed line with open squares, and the Sherpa 2.2.5 default model is shown as a red dotted line with open diamonds. The bottom panel also features a shaded region representing the distribution of the ratio to ATLAS, with yellow and green colors indicating different levels of agreement.

$ \Delta y $	ATLAS Gap Fraction	Herwig 7.2.0 Ratio	Sherpa 2.2.5 Ratio
0.5	1.0	1.0	1.0
1.0	0.95	1.0	1.0
1.5	0.95	0.95	1.0
2.0	0.9	0.9	1.0
2.5	0.85	0.85	1.0
3.0	0.8	0.8	1.0
3.5	0.75	0.75	1.0
4.0	0.7	0.7	0.9
4.5	0.65	0.65	0.8
5.0	0.45	0.45	0.6
5.5	0.3	-	-
6.0	0.0	-	-