

Gap fraction vs  $\Delta y$  (FB) ( $210 < p_T < 240$  ( $Q_0 = \overline{p_T}$ ))

Gap fraction

- ATLAS
- - □ Herwig 7.2.1 default
- - ◆ Sherpa 2.2.9 default

2

1.5

1

0.5

0

ATLAS\_2011\_S9126244

Rivet 3.1.10,  $\geq 100k$  events

mcplots.cern.ch [arXiv:1306.3436]

Ratio to ATLAS

2

1

0.5

2

0.5

0

2

4

6

$|\Delta y|$

The figure displays two panels comparing ATLAS experimental data with Herwig 7.2.1 and Sherpa 2.2.9 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  $|\Delta y|$ . The ATLAS data is represented by black squares with error bars. The Herwig 7.2.1 default model is shown as a green dashed line with open squares, and the Sherpa 2.2.9 default model is shown as a red dotted line with open diamonds. A vertical line is drawn at  $|\Delta y| \approx 5.2$ , and a shaded region (yellow and green) is shown for  $|\Delta y| > 4.5$ . The text 'ATLAS\_2011\_S9126244' is present in the top panel, and 'Rivet 3.1.10,  $\geq 100k$  events' and 'mcplots.cern.ch [arXiv:1306.3436]' are on the right side.

$ \Delta y $	ATLAS Gap Fraction	Herwig 7.2.1 Ratio	Sherpa 2.2.9 Ratio
0.4	1.0	1.0	1.0
0.8	0.95	1.0	0.95
1.2	0.95	0.95	1.05
1.6	0.9	0.9	0.95
2.2	0.9	1.0	0.95
2.8	0.85	0.95	1.0
3.2	0.8	0.85	1.0
3.6	0.8	0.6	0.75
4.0	0.7	0.3	1.1
4.4	0.45	1.1	1.1
4.8	0.3	1.4	1.7
5.2	0.0	1.4	1.7