

Gap fraction

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

- ATLAS
- Herwig 7.2.0 default
- ◇--- Sherpa 1.4.0 default

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

0.5

0

2

4

6

$|\Delta y|$

The figure consists of two vertically stacked panels sharing a common x-axis representing the absolute rapidity difference  $|\Delta y|$  from 0 to 6. The top panel shows the 'Gap fraction' on the y-axis (0 to 2). It features three data series: ATLAS experimental data (black squares), Herwig 7.2.0 default (green dashed line with open squares), and Sherpa 1.4.0 default (red dotted line with open diamonds). All series show a decreasing trend as  $|\Delta y|$  increases. The bottom panel shows the 'Ratio to ATLAS' on the y-axis (0.5 to 2). It displays the same three series as the top panel, but the Herwig and Sherpa models are overlaid with shaded regions (green and yellow respectively) representing uncertainty bands. A horizontal line is drawn at a ratio of 1.0. The text 'ATLAS\_2011\_S9126244' is located in the middle of the top panel. On the right side, there are two vertical labels: 'Rivet 3.1.0,  $\geq 100k$  events' and 'mcplots.cern.ch [arXiv:1306.3436]'.

$ \Delta y $	ATLAS Gap Fraction	Herwig 7.2.0 Gap Fraction	Sherpa 1.4.0 Gap Fraction	Herwig Ratio to ATLAS	Sherpa Ratio to ATLAS
0.4	1.0	1.0	1.0	1.0	1.0
0.8	0.98	0.98	1.0	1.0	1.05
1.2	0.95	0.95	0.98	1.0	1.05
1.6	0.92	0.92	0.95	1.0	1.05
2.2	0.88	0.85	0.9	0.9	1.0
2.8	0.85	0.85	0.85	1.0	1.0
3.2	0.82	0.75	0.85	0.9	1.05
3.6	0.78	0.62	0.75	0.8	0.95
4.2	0.68	0.65	0.68	0.95	1.0
4.8	0.45	0.4	-	0.85	-
5.2	0.32	-	-	-	-
5.8	0.0	-	-	-	-