

Gap fraction

Gap fraction vs  $\Delta y$  (FB) ( $90 < p_T < 120$  ( $Q_0 = \bar{p}_T$ ))

- ATLAS
- - □ Herwig 7.2.0 default
- - ▲ Pythia 8.130.p1 default
- - ◆ Sherpa 1.4.2 default

2.5

2

1.5

1

0.5

0

2

1

0.5

Rivet 3.1.0,  $\geq 100k$  events

mcplots.cern.ch [arXiv:1306.3436]

ATLAS\_2011\_S9126244

Ratio to ATLAS

2

1

0.5

0

2

4

6

$|\Delta y|$

The figure consists of two vertically stacked panels sharing a common x-axis representing the rapidity difference  $|\Delta y|$  from 0 to 6. The top panel shows the 'Gap fraction' on the y-axis (0 to 2.5), with ATLAS data points (black squares) and three MC models: Herwig 7.2.0 (green dashed line with squares), Pythia 8.130.p1 (blue solid line with triangles), and Sherpa 1.4.2 (red dotted line with diamonds). The bottom panel shows the 'Ratio to ATLAS' on the y-axis (0.5 to 2), with the same data and models. Shaded regions in the bottom panel indicate the uncertainty bands for the MC models. A horizontal line is drawn at a ratio of 1.0. The ATLAS data points in both panels include vertical error bars. The text 'ATLAS\_2011\_S9126244' is centered 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 7.2.0 Gap Fraction	Pythia 8.130.p1 Gap Fraction	Sherpa 1.4.2 Gap Fraction	ATLAS Ratio to ATLAS	Herwig 7.2.0 Ratio to ATLAS	Pythia 8.130.p1 Ratio to ATLAS	Sherpa 1.4.2 Ratio to ATLAS
0.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
0.8	0.95	0.95	0.95	0.95	1.0	1.0	1.0	1.0
1.3	0.9	0.9	0.9	0.95	1.0	1.0	1.0	1.05
1.8	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.0
2.3	0.85	0.85	0.85	0.9	1.0	1.0	1.0	1.05
2.8	0.8	0.8	0.8	0.85	1.0	1.0	1.0	1.0
3.3	0.8	0.8	0.85	0.85	1.0	1.0	1.0	1.05
3.8	0.75	0.75	0.6	0.75	1.0	1.0	0.8	1.0
4.3	0.75	0.75	0.75	0.75	1.0	1.0	1.0	1.0
4.8	0.7	0.7	0.55	0.8	1.0	1.0	0.8	1.3
5.3	0.6	0.45	0.85	0.8	1.0	0.75	1.5	1.4
5.8	0.55	0.2	1.0	0.65	1.0	0.4	1.9	1.3