

Gap fraction

Gap fraction vs  $\Delta y$  (LJ) ( $240 < p_T < 270$ )

- ATLAS
- Herwig 7.2.0 default
- ▲--- Pythia 8.183 default
- ◆--- Sherpa 1.4.1 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

1

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, ranging from 0 to 2. It displays ATLAS data points (black squares) and three Monte Carlo model predictions: Herwig 7.2.0 (green dashed line with squares), Pythia 8.183 (blue solid line with triangles), and Sherpa 1.4.1 (red dotted line with diamonds). All series show a decreasing trend as  $|\Delta y|$  increases. The bottom panel shows the 'Ratio to ATLAS' on the y-axis, ranging from 0.5 to 2. It uses the same data points and lines as the top panel. A horizontal line is drawn at a ratio of 1.0. Shaded regions in yellow and green are present in the background of the bottom panel, indicating uncertainty bands. 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)	Herwig 7.2.0 (Gap)	Pythia 8.183 (Gap)	Sherpa 1.4.1 (Gap)	ATLAS (Ratio)	Herwig 7.2.0 (Ratio)	Pythia 8.183 (Ratio)	Sherpa 1.4.1 (Ratio)
0.3	0.95	0.95	0.95	0.95	1.0	1.0	1.0	1.0
0.7	0.8	0.8	0.8	0.8	1.0	1.0	1.0	1.0
1.3	0.65	0.65	0.65	0.65	1.0	1.0	1.0	1.0
1.7	0.55	0.55	0.55	0.55	1.0	1.0	1.0	1.0
2.3	0.45	0.45	0.45	0.45	1.0	1.0	1.0	1.0
2.7	0.38	0.38	0.38	0.38	1.0	1.0	1.0	1.0
3.3	0.35	0.35	0.35	0.35	1.0	1.0	1.0	1.0
3.7	0.3	0.3	0.25	0.3	0.75	0.9	0.75	1.0
4.3	0.35	0.15	0.15	0.15	0.5	0.55	0.5	0.4
4.7	0.35	-	0.25	0.15	0.75	1.5	0.75	0.15
5.7	0.0	-	-	-	-	-	-	-