

Gap fraction

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

- ATLAS
- Herwig 7.2.0 default
- ▲ Pythia 8.212 default
- ◆ Sherpa 2.2.6 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 rapidity difference  $|\Delta y|$  from 0 to 6. The top panel shows the 'Gap fraction' on the y-axis (0 to 2), with ATLAS data points (black squares) and three Monte Carlo models: Herwig 7.2.0 (green dashed line with squares), Pythia 8.212 (blue solid line with triangles), and Sherpa 2.2.6 (red dotted line with diamonds). The bottom panel shows the 'Ratio to ATLAS' on the y-axis (0.5 to 2), with the same three Monte Carlo models overlaid on a yellow and green shaded background. A horizontal line is drawn at a ratio of 1.0. The ATLAS data point at  $|\Delta y| \approx 5.7$  is shown as a single black square at a gap fraction of 0.

$ \Delta y $	ATLAS Gap Fraction	Herwig 7.2.0 Gap Fraction	Pythia 8.212 Gap Fraction	Sherpa 2.2.6 Gap Fraction
0.3	0.95	0.95	0.95	0.95
0.8	0.78	0.80	0.78	0.78
1.3	0.68	0.68	0.62	0.58
1.8	0.55	0.55	0.58	0.48
2.3	0.45	0.45	0.48	0.40
2.8	0.38	0.38	0.35	0.40
3.3	0.35	0.35	0.35	0.30
3.8	0.32	0.30	0.32	0.52
4.3	0.33	0.20	0.45	0.20
4.8	0.35	-	0.40	0.78
5.7	0.00	-	-	-