

7000 GeV pp

Jets

Gap fraction

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

- ATLAS
- Herwig++ 2.5.2 default
- Herwig 7.2.0 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 displays two panels comparing ATLAS experimental data with Herwig++ 2.5.2 and Herwig 7.2.0 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  $|\Delta y|$  (x-axis, 0 to 6). The bottom panel also features shaded regions in yellow and green, likely representing uncertainty bands or model variations. The ATLAS data points are black squares, Herwig++ 2.5.2 is orange circles, and Herwig 7.2.0 is green squares. The text 'ATLAS\_2011\_S9126244' is visible 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++ 2.5.2 Ratio	Herwig 7.2.0 Ratio
0.2	0.95	1.0	1.0
0.8	0.8	1.1	1.0
1.4	0.7	1.1	1.0
1.8	0.6	1.2	1.0
2.2	0.45	1.0	1.0
2.8	0.4	1.0	1.0
3.4	0.35	0.9	1.0
3.8	0.3	1.3	0.9
4.2	0.35	0.7	0.5
4.8	0.35	1.9	-
5.8	0.0	-	-