

Gap fraction

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

- ATLAS
- Herwig++ 2.7.1 default
- Herwig 7.2.0 default
- ▲- Pythia 8.201 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 displays two panels sharing a common x-axis representing the rapidity difference  $|\Delta y|$  from 0 to 6. The top panel shows the gap fraction, which decreases from approximately 0.95 at  $|\Delta y| \approx 0.5$  to about 0.15 at  $|\Delta y| \approx 4.2$ . The bottom panel shows the ratio of the gap fraction to the ATLAS data, which is mostly around 1.0, with some deviations at larger  $|\Delta y|$ . Shaded regions in the bottom panel indicate the uncertainty bands for the Herwig++ (yellow) and Herwig (green) models.

$ \Delta y $	ATLAS (Gap Fraction)	Herwig++ 2.7.1 (Gap Fraction)	Herwig 7.2.0 (Gap Fraction)	Pythia 8.201 (Gap Fraction)	Herwig++ Ratio	Herwig Ratio
0.5	0.95	0.95	0.95	0.95	1.0	1.0
1.0	0.80	0.80	0.80	0.80	1.0	1.0
1.5	0.70	0.70	0.70	0.70	1.0	1.0
2.0	0.60	0.60	0.60	0.60	1.0	1.0
2.5	0.50	0.50	0.50	0.50	1.0	1.0
3.0	0.45	0.45	0.45	0.45	1.0	1.0
3.5	0.40	0.40	0.40	0.40	1.0	1.0
4.0	0.35	0.35	0.35	0.35	1.0	1.0
4.2	0.35	0.15	0.15	0.55	0.5	0.5
4.5	0.35	-	-	-	-	-
5.8	0.00	-	-	-	-	-