

Gap fraction

Gap fraction vs Δy (LJ) ($240 < p_T < 270$)

- ATLAS
- - □ Herwig 7.2.0 default
- - ▲ Pythia 8.240 default
- - ◆ Sherpa 2.2.4 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. The top panel shows the gap fraction as a function of the rapidity separation $|\Delta y|$ (ranging from 0 to 6). The gap fraction starts at approximately 0.95 for $|\Delta y| = 0.5$ and decreases to about 0.35 at $|\Delta y| = 4.5$. The bottom panel shows the ratio of the gap fraction to the ATLAS measurement. This ratio is generally close to 1.0, with some deviations at larger $|\Delta y|$. Shaded regions in the bottom panel indicate the uncertainty bands for the Herwig 7.2.0 (green) and Pythia 8.240 (yellow) models.

$ \Delta y $	ATLAS Gap Fraction	Herwig 7.2.0 Ratio	Pythia 8.240 Ratio	Sherpa 2.2.4 Ratio
0.5	0.95	1.00	1.00	1.00
1.0	0.78	1.00	1.00	1.00
1.5	0.65	1.00	0.95	0.95
2.0	0.55	1.00	0.95	0.85
2.5	0.48	1.00	1.00	0.95
3.0	0.40	1.00	0.95	1.00
3.5	0.35	0.90	1.30	1.05
4.0	0.32	0.70	1.05	0.70
4.5	0.35	0.50	1.50	0.70