

Gap fraction

Gap fraction vs  $\Delta y$  (LJ) ( $90 < p_T < 120$ )

- ATLAS
- - □ Herwig 7.0.0 default
- - ▲ Pythia 8.170 default
- - ◆ Sherpa 1.4.1 default

2

1.8

1.6

1.4

1.2

1.0

0.8

0.6

0.4

0.2

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 comparing ATLAS experimental data with Monte Carlo (MC) models for gap fractions in 7000 GeV pp collisions. The top panel shows the gap fraction as a function of the absolute rapidity difference  $|\Delta y|$  (ranging from 0 to 6). The bottom panel shows the ratio of the gap fraction to the ATLAS data, with shaded regions indicating uncertainty bands for the Herwig 7.0.0 (green) and Pythia 8.170 (yellow) models. The ATLAS data points are shown as black squares, Herwig 7.0.0 as green squares, Pythia 8.170 as blue triangles, and Sherpa 1.4.1 as red diamonds. Error bars are included for all data points.

$ \Delta y $	ATLAS (Gap Fraction)	Herwig 7.0.0 (Gap Fraction)	Pythia 8.170 (Gap Fraction)	Sherpa 1.4.1 (Gap Fraction)
0.3	0.96	0.96	0.96	0.96
0.8	0.86	0.86	0.86	0.86
1.3	0.78	0.80	0.78	0.73
1.8	0.70	0.68	0.70	0.70
2.3	0.62	0.60	0.58	0.62
2.8	0.56	0.50	0.48	0.56
3.3	0.50	0.50	0.30	0.50
3.8	0.42	0.35	0.46	0.42
4.3	0.38	0.35	0.18	0.42
4.8	0.36	0.22	0.33	0.44
5.3	0.36	-	0.25	0.36
5.8	0.26	-	0.33	0.26