

Gap fraction

Gap fraction vs Δy (FB) ($210 < p_T < 240$ ($Q_0 = \bar{p}_T$))

- ATLAS
- - □ Herwig 7.2.0 default
- - ▲ Pythia 8.205 default
- - ◆ Sherpa 1.2.2p default

2

1.5

1

0.5

0

Rivet 3.1.0, $\geq 100k$ events

mcplots.cern.ch [arXiv:1306.3436]

ATLAS_2011_S9126244

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 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, also as a function of $|\Delta y|$. The ATLAS data points are shown as black squares with error bars. The MC models are shown as lines with markers: Herwig 7.2.0 default (green dashed line with squares), Pythia 8.205 default (blue solid line with triangles), and Sherpa 1.2.2p default (red dotted line with diamonds). The bottom panel also includes a 2D histogram showing the distribution of the ratio to ATLAS, with yellow and green shaded regions.

$ \Delta y $	ATLAS Gap Fraction	Herwig 7.2.0 Gap Fraction	Pythia 8.205 Gap Fraction	Sherpa 1.2.2p Gap Fraction
0.5	1.0	1.0	1.0	1.0
1.0	0.95	0.95	0.95	0.95
1.5	0.95	0.95	0.95	0.95
2.0	0.9	0.85	0.9	0.95
2.5	0.85	0.85	0.85	0.95
3.0	0.8	0.75	0.8	0.85
3.5	0.8	0.65	0.85	0.7
4.0	0.7	0.65	0.9	0.85
4.5	0.45	0.4	0.7	0.5
5.0	0.3	-	0.5	-
5.5	0.0	-	-	-