

Gap fraction

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

- ATLAS
- Pythia 6.423 p0
- Pythia 6.423 p2010

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 consists of two vertically stacked 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 $|\Delta y| = 0.5$ to about 0.1 at $|\Delta y| = 5.8$. The bottom panel shows the ratio of the gap fraction to the ATLAS data, with a horizontal line at 1.0. The ratio is mostly between 0.8 and 1.2, with a significant dip to 0.45 at $|\Delta y| \approx 4.2$. The plot includes ATLAS data points (black squares), Pythia 6.423 p0 model (solid line with open circles), and Pythia 6.423 p2010 model (dashed line with open squares). A yellow and green shaded histogram is overlaid on the bottom panel, and a vertical dashed line is at $|\Delta y| \approx 4.2$.

$ \Delta y $	ATLAS Gap Fraction	Pythia 6.423 p0 Ratio	Pythia 6.423 p2010 Ratio
0.5	0.95	1.00	1.00
1.0	0.75	1.05	1.05
1.5	0.60	1.05	1.10
2.0	0.50	1.00	1.00
2.5	0.40	1.10	1.00
3.0	0.35	1.20	1.00
3.5	0.30	1.25	1.20
4.0	0.20	0.80	1.80
4.2	0.15	0.45	1.90
4.5	0.15	-	-
5.8	0.00	-	-