

7000 GeV pp

Jets

Gap fraction

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

- ATLAS
- Pythia 6.423 p0
- Pythia 6.423 p2010

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

0.5

0

2

4

6

$|\Delta y|$

The figure displays two panels related to the gap fraction in 7000 GeV pp collisions. The top panel shows the gap fraction as a function of the rapidity difference $|\Delta y|$ (ranging from 0 to 6). The data points are from ATLAS (black squares), and the theoretical predictions are from Pythia 6.423 p0 (solid line with open circles) and Pythia 6.423 p2010 (dashed line with open squares). The gap fraction decreases from approximately 0.95 at $|\Delta y| = 0.5$ to about 0.1 at $|\Delta y| = 4.5$. The bottom panel shows the ratio of the gap fraction to the ATLAS data, with a horizontal line at 1.0. The shaded regions represent the uncertainty of the ratio, with yellow and green colors indicating different levels of deviation. The ratio is generally close to 1.0, with some fluctuations, particularly at larger $|\Delta y|$.

$ \Delta y $	ATLAS (Gap fraction)	Pythia 6.423 p0 (Gap fraction)	Pythia 6.423 p2010 (Gap fraction)
0.5	0.95	0.95	0.95
1.0	0.80	0.80	0.80
1.5	0.65	0.65	0.65
2.0	0.55	0.55	0.55
2.5	0.45	0.45	0.45
3.0	0.40	0.45	0.40
3.5	0.35	0.30	0.35
4.0	0.35	0.25	0.35
4.5	0.35	0.10	0.40
5.5	0.00	-	-