

Gap fraction

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

- ATLAS
- - ■ Pythia 6.424 default
- - ▲ Pythia 8.150 default

2

1.5

1

0.5

0

Rivet 3.1.0,  $\geq 100$ k 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 displays the 'Gap fraction' on the left y-axis (0 to 2) and the number of events on the right y-axis (Rivet 3.1.0,  $\geq 100$ k events). It shows three data series: ATLAS (black squares), Pythia 6.424 default (orange dashed line with squares), and Pythia 8.150 default (blue solid line with triangles). All series show a general decrease in gap fraction as  $|\Delta y|$  increases, with ATLAS data points and error bars. The bottom panel displays the 'Ratio to ATLAS' on the left y-axis (0.5 to 2) and the number of events on the right y-axis (0.5 to 2). It shows the same three data series, with the Pythia models plotted as lines with markers and error bars, and a shaded region (yellow and green) representing the uncertainty or distribution of the ratio. A horizontal line is drawn at a ratio of 1.0. The text 'ATLAS\_2011\_S9126244' is visible in the top panel.

$ \Delta y $	ATLAS Gap Fraction	Pythia 6.424 Gap Fraction	Pythia 8.150 Gap Fraction	ATLAS Ratio to ATLAS	Pythia 6.424 Ratio to ATLAS	Pythia 8.150 Ratio to ATLAS
0.2	1.0	1.0	1.0	1.0	1.0	1.0
0.8	0.95	1.0	0.9	1.0	1.0	0.9
1.4	0.9	0.9	0.9	1.0	0.9	0.9
2.0	0.85	0.85	0.85	1.0	0.9	0.9
2.6	0.8	0.9	0.8	1.0	0.9	0.8
3.2	0.7	0.9	0.7	1.0	1.0	0.8
3.8	0.8	0.9	0.9	1.0	1.1	1.1
4.4	0.7	0.7	0.7	1.0	1.0	1.0
5.0	0.45	0.5	0.75	0.5	1.1	1.7
5.6	0.3	0.5	-	0.5	1.1	-
5.8	0.0	0.5	-	0.5	1.1	-