

Gap fraction vs Δy (FB) ($90 < p_T < 120$)

Gap fraction

- ATLAS
- Pythia 6.428 345
- △- Pythia 6.428 370
- △- Pythia 6.428 ambt1
- Pythia 6.428 z2

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 sharing a common x-axis representing the rapidity difference $|\Delta y|$ from 0 to 6. The top panel plots the 'Gap fraction' (y-axis, 0 to 2) against $|\Delta y|$. It shows ATLAS data points (black squares) and four Pythia 6.428 models: 345 (red dashed line with open circles), 370 (red solid line with open triangles), ambt1 (yellow solid line with open triangles), and z2 (green solid line with solid circles). The gap fraction generally decreases as $|\Delta y|$ increases, starting around 0.95 at $|\Delta y| \approx 0.5$ and reaching approximately 0.1 at $|\Delta y| \approx 5.8$. The bottom panel plots the 'Ratio to ATLAS' (y-axis, 0.5 to 2) against $|\Delta y|$. It uses the same data series as the top panel. A horizontal line is drawn at a ratio of 1.0. A shaded region, composed of yellow and green horizontal bands, is overlaid on the plot, representing the ratio to ATLAS. The ratio to ATLAS fluctuates around 1.0, with some models showing significant deviations, particularly at larger $|\Delta y|$.