

Gap fraction

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

- ATLAS
- Pythia 6.428 390
- Pythia 6.428 391
- ◇ Pythia 6.428 392
- ★ Pythia 6.428 396
- ☆ Pythia 6.428 397
- ▼ Pythia 6.428 398

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

1

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' on the y-axis, ranging from 0 to 2. It displays data points for ATLAS (black squares) and six different Pythia 6.428 models (circles, squares, diamonds, stars, and triangles) connected by dashed lines. The gap fraction generally decreases from approximately 0.9 at $|\Delta y| = 0.5$ to around 0.3-0.4 at $|\Delta y| = 4.5$. The bottom panel shows the 'Ratio to ATLAS' on the y-axis, ranging from 0.5 to 2.0. It uses the same data points and lines as the top panel. A horizontal line is drawn at a ratio of 1.0. A shaded region, colored in yellow and green, highlights the area where the ratio deviates from 1.0, primarily between $|\Delta y| = 3.5$ and 4.5 . The ATLAS data point at $|\Delta y| \approx 5.7$ is shown as a single black square at a gap fraction of 0.