

Gap fraction

Gap fraction vs  $\Delta y$  (LJ) ( $240 < p_T < 270$ )

- ATLAS
- - □ Herwig 7.2.0 default
- - ▲ Pythia 8.212 default
- - ◆ Sherpa 2.1.1 default

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 consists of two vertically stacked panels sharing a common x-axis representing the absolute 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 with error bars for ATLAS (black squares) and three Monte Carlo models: Herwig 7.2.0 (green dashed line with squares), Pythia 8.212 (blue solid line with triangles), and Sherpa 2.1.1 (red dotted line with diamonds). The gap fraction generally decreases from approximately 0.9 at  $|\Delta y| \approx 0.5$  to around 0.3-0.4 at  $|\Delta y| \approx 4.5$ . 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. The plot includes shaded regions: yellow for  $|\Delta y| < 4.5$  and green for  $4.5 < |\Delta y| < 5.0$ . The ratio to ATLAS is mostly close to 1.0, with some deviations at larger  $|\Delta y|$ .