

Gap fraction

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

- ATLAS
- - □ Herwig 7.0.4 default
- - ▲ Pythia 8.301 default
- - ◆ Sherpa 1.4.2 default

2

1.5

1

0.5

0

Rivet 3.1.0,  $\geq 100k$  events

mcplots.cern.ch [arXiv:1306.3436]

ATLAS\_2011\_S9126244

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 absolute rapidity difference  $|\Delta y|$  from 0 to 6. The top panel shows the 'Gap fraction' on the y-axis (0 to 2), with data points and error bars for ATLAS (black squares), Herwig 7.0.4 (green dashed line with squares), Pythia 8.301 (blue solid line with triangles), and Sherpa 1.4.2 (red dotted line with diamonds). The gap fraction generally decreases from approximately 0.9 at  $|\Delta y| \approx 0.5$  to about 0.15 at  $|\Delta y| \approx 5.5$ . The bottom panel shows the 'Ratio to ATLAS' on the y-axis (0.5 to 2), with the same four data series. A horizontal line is drawn at a ratio of 1.0. The Herwig and Pythia models are overlaid with shaded regions: green for Herwig and yellow for Pythia, indicating the uncertainty bands. The Sherpa model also shows a shaded region in yellow. The ATLAS data point at  $|\Delta y| \approx 5.5$  is a single black square at a ratio of 1.0.