

7000 GeV pp

Jets

Gap fraction

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

- ATLAS
- - □ Herwig 7.2.0 default
- - ◆ Sherpa 2.2.8 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

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 (0 to 2). It features three data series: ATLAS experimental data (black squares), Herwig 7.2.0 default (green dashed line with open squares), and Sherpa 2.2.8 default (red dotted line with red diamonds). All series show a general downward trend from $|\Delta y| \approx 0.5$ to $|\Delta y| \approx 4.5$, followed by a sharp increase at $|\Delta y| \approx 4.8$. The bottom panel shows the 'Ratio to ATLAS' on the y-axis (0.5 to 2). It displays the same three series as the top panel, with shaded regions (yellow for Sherpa, green for Herwig) representing uncertainty bands. A horizontal line is drawn at a ratio of 1.0. The ratio for the models generally stays near 1.0 until $|\Delta y| \approx 4.5$, where it deviates significantly, with Sherpa reaching a ratio of approximately 1.5 and Herwig reaching approximately 1.0 at $|\Delta y| \approx 4.8$.