

Gap fraction

Gap fraction vs Δy (FB) ($210 < p_T < 240$ ($Q_0 = \bar{p}_T$))

- ATLAS
- - □ Herwig 7.2.0 default
- - ◆ Sherpa 2.2.5 default

2

1.5

1

0.5

0

Rivet 3.1.0, ≥ 100 k events

mcplots.cern.ch [arXiv:1306.3436]

ATLAS_2011_S9126244

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 rapidity difference $|\Delta y|$ from 0 to 6. The top panel shows the 'Gap fraction' on the left y-axis (0 to 2) and the number of events on the right y-axis (Rivet 3.1.0, ≥ 100 k events). The bottom panel shows the 'Ratio to ATLAS' on the left y-axis (0.5 to 2) and the same event count on the right y-axis. The top panel includes data points for ATLAS (black squares), Herwig 7.2.0 default (green dashed line with open squares), and Sherpa 2.2.5 default (red dotted line with filled diamonds). The bottom panel includes the same data points and a shaded histogram representing the distribution of the ratio to ATLAS. A horizontal line is drawn at a ratio of 1.0. The ATLAS data points in the top panel show a decreasing trend from approximately 1.0 at $|\Delta y| \approx 0.5$ to 0.3 at $|\Delta y| \approx 5.5$. The Herwig and Sherpa models generally follow this trend but show some deviations, particularly at larger $|\Delta y|$ values.