

Gap fraction

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

- ATLAS
- - □ Herwig 7.2.0 default
- - ◆ Sherpa 2.1.0 default

2

1.5

1

0.5

0

Rivet 3.1.0,  $\geq 100$ 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 absolute 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 (0 to 100k). It displays ATLAS data points (black squares) and two Monte Carlo models: Herwig 7.2.0 (green dashed line with open squares) and Sherpa 2.1.0 (red dotted line with filled diamonds). Both models show a decreasing trend in gap fraction as  $|\Delta y|$  increases, with Sherpa generally predicting a higher gap fraction than Herwig. 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. It features the same data points and model lines as the top panel, along with a 2D histogram in the background. The histogram is colored in shades of green and yellow, indicating the distribution of the ratio to ATLAS. A horizontal line is drawn at a ratio of 1.0. The text 'ATLAS\_2011\_S9126244' is centered in the top panel.