

Gap fraction

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

- ATLAS
- Herwig++ 2.7.1 default
- Herwig 7.2.0 default
- ▼- Herwig 7.2.0 softTune

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 plots the 'Gap fraction' on the y-axis, ranging from 0 to 2. It shows experimental data from ATLAS (black squares) and three Monte Carlo models: Herwig++ 2.7.1 default (orange dashed line with open circles), Herwig 7.2.0 default (green dashed line with open squares), and Herwig 7.2.0 softTune (blue solid line with solid inverted triangles). All models show a decreasing trend in gap fraction as  $|\Delta y|$  increases. The bottom panel plots the 'Ratio to ATLAS' on the y-axis, ranging from 0.5 to 2. It shows the same data points as the top panel, but with shaded regions representing uncertainty bands: yellow for Herwig++ and green for Herwig 7.2.0. A horizontal line is drawn at a ratio of 1.0. The ATLAS data point at  $|\Delta y| \approx 5.7$  is significantly below the ratio of 1.0.