

Gap fraction

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

- ATLAS
- Herwig++ 2.6.1a 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

0.5

0

2

4

6

$|\Delta y|$

The figure displays two panels. The top panel shows the gap fraction as a function of the longitudinal separation  $|\Delta y|$  between leading and next-to-leading jets. The data points (ATLAS, Herwig++ 2.6.1a default, Herwig 7.2.0 default, Herwig 7.2.0 softTune) show a decreasing trend from approximately 0.95 at  $|\Delta y| \approx 0.5$  to about 0.35 at  $|\Delta y| \approx 4.8$ . The bottom panel shows the ratio of the gap fraction to the ATLAS measurement. The Herwig++ 2.6.1a default model (orange dashed line) shows a significant deviation from the ATLAS data at larger  $|\Delta y|$ , while the Herwig 7.2.0 models (green and blue lines) remain closer to the ATLAS data. Shaded regions in the bottom panel represent the uncertainty bands for the Herwig models.