

7000 GeV pp

Jets

Gap fraction

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

- ATLAS
- - □ Herwig 7.0.3 default
- - ◆ Sherpa 2.2.8 default

2

1.5

1

0.5

0

Rivet 3.1.0,  $\geq 100k$  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, which decreases from approximately 0.95 at  $|\Delta y| \approx 0.5$  to about 0.15 at  $|\Delta y| \approx 5.5$ . The bottom panel shows the ratio of the gap fraction to the ATLAS data, with a horizontal line at 1.0. The Herwig 7.0.3 default model (green dashed line with squares) and Sherpa 2.2.8 default model (red dotted line with diamonds) are compared to the ATLAS data (black solid line with squares). The models generally follow the ATLAS data, with some deviations at larger  $|\Delta y|$ . The bottom panel also features shaded regions: yellow for the Sherpa model and green for the Herwig model, indicating the uncertainty or spread of the model predictions.

$ \Delta y $	ATLAS Gap Fraction	Herwig 7.0.3 Ratio	Sherpa 2.2.8 Ratio
0.5	0.95	0.95	0.95
1.0	0.75	0.75	0.75
1.5	0.60	0.55	0.55
2.0	0.50	0.45	0.45
2.5	0.40	0.35	0.35
3.0	0.35	0.35	0.35
3.5	0.25	0.20	0.25
4.0	0.18	0.15	0.18
4.5	0.18	0.20	0.18
5.5	0.15	-	-