

Gap fraction

Gap fraction vs pT (FB) ($1 < \Delta y < 2$)

- ATLAS
- Herwig 7.0.0 default
- ▲— Pythia 8.308 default
- ◆--- Sherpa 1.3.0 default

Rivet 3.1.10, $\geq 100k$ events

mcplots.cern.ch [arXiv:1306.3436]

ATLAS_2011_S9126244

Ratio to ATLAS

2.5

2.0

1.5

1.0

0.5

0

2

1

0.5

2

0.5

100

200

300

400

500

$\overline{P_T}$ [GeV]

The figure displays two panels. The top panel shows the gap fraction (y-axis, 0 to 2.5) versus the average transverse momentum $\overline{P_T}$ (x-axis, 0 to 500 GeV). The bottom panel shows the ratio of the gap fraction to the ATLAS data (y-axis, 0.5 to 2) versus $\overline{P_T}$. The ATLAS data (black squares) shows a gap fraction that starts around 0.75 at low $\overline{P_T}$ and decreases to about 0.5 at 500 GeV. The Herwig 7.0.0 default model (green dashed line with squares) and Pythia 8.308 default model (blue solid line with triangles) show a gap fraction that is mostly below 1.0, with some fluctuations. The Sherpa 1.3.0 default model (red dotted line with diamonds) shows a gap fraction that is mostly above 1.0, with some fluctuations. The ratio to ATLAS plot shows that the Herwig and Pythia models generally predict a lower gap fraction than ATLAS, while the Sherpa model predicts a higher gap fraction. The ratio to ATLAS plot also shows that the Herwig and Pythia models generally predict a lower ratio to ATLAS than 1.0, while the Sherpa model predicts a higher ratio to ATLAS than 1.0. The ratio to ATLAS plot also shows that the Herwig and Pythia models generally predict a lower ratio to ATLAS than 1.0, while the Sherpa model predicts a higher ratio to ATLAS than 1.0.