

Gap fraction

Gap fraction vs Δy (LJ) ($240 < p_T < 270$)

- ATLAS
- ▲ Pythia 8.308 default
- -▲ Pythia 8.308 default-CD
- -▲ Pythia 8.308 default-DL
- ⋯▲ Pythia 8.308 default-MBR

2

1.5

1

0.5

0

ATLAS_2011_S9126244

Rivet 3.1.10, $\geq 100k$ 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 displays two panels comparing ATLAS experimental data with Pythia 8.308 Monte Carlo models for gap fractions in 7000 GeV pp collisions. The top panel shows the gap fraction as a function of the rapidity separation $|\Delta y|$ (ranging from 0 to 6). The bottom panel shows the ratio of the gap fraction to the ATLAS data, with shaded regions indicating the uncertainty or range of the ratio. The ATLAS data (black squares) shows a decreasing trend from approximately 0.95 at $|\Delta y| = 0.2$ to 0.35 at $|\Delta y| = 5.8$. The Pythia models generally follow this trend, with some variations in the ratio to ATLAS, particularly at larger $|\Delta y|$ values.

$ \Delta y $	ATLAS (Gap Fraction)	Pythia 8.308 default (Gap Fraction)	Pythia 8.308 default-CD (Gap Fraction)	Pythia 8.308 default-DL (Gap Fraction)	Pythia 8.308 default-MBR (Gap Fraction)
0.2	0.95	0.95	0.95	0.95	0.95
0.8	0.80	0.80	0.80	0.80	0.80
1.4	0.65	0.65	0.65	0.65	0.65
1.8	0.55	0.55	0.55	0.55	0.55
2.4	0.45	0.45	0.45	0.45	0.45
2.8	0.38	0.38	0.38	0.38	0.38
3.4	0.35	0.35	0.35	0.35	0.35
3.8	0.30	0.30	0.30	0.30	0.30
4.4	0.32	0.32	0.32	0.32	0.32
5.0	0.35	0.35	0.35	0.35	0.35