

## Z+Jet

Figure 1 displays the multiplicity distribution of jets in CMS and Herwig 7.2.1 default. The top panel shows the multiplicity distribution  $\frac{dN}{dp_T}$  for CMS (black squares) and Herwig 7.2.1 default (green dashed line with open squares). The bottom panel shows the ratio of the Herwig 7.2.1 default distribution to the CMS distribution, with a yellow band indicating the 1-sigma uncertainty and a green band indicating the 2-sigma uncertainty. The x-axis is multiplicity (0 to 60) and the y-axis is  $\frac{dN}{dp_T}$  (0 to 180).

| Multiplicity | CMS $\frac{dN}{dp_T}$ | Herwig 7.2.1 default $\frac{dN}{dp_T}$ | Ratio (Herwig/CMS) |
|--------------|-----------------------|----------------------------------------|--------------------|
| 0            | 0                     | 0                                      | 1.0                |
| 5            | ~1                    | ~12                                    | ~12                |
| 10           | ~1                    | ~75                                    | ~75                |
| 15           | ~1                    | ~82                                    | ~82                |
| 20           | ~1                    | ~45                                    | ~45                |
| 25           | ~1                    | ~12                                    | ~12                |
| 30           | ~1                    | ~5                                     | ~5                 |
| 35           | ~1                    | ~2                                     | ~2                 |
| 40           | ~1                    | ~1                                     | ~1                 |
| 45           | ~1                    | ~1                                     | ~1                 |
| 50           | ~1                    | ~1                                     | ~1                 |
| 55           | ~1                    | ~1                                     | ~1                 |
| 60           | ~1                    | ~1                                     | ~1                 |

mcplots.cern.ch [arXiv:1306.3436] Rivet 3.1.10, 2.9M events

A vertical number line with tick marks at 0, 1, and 2.

multiplicity