## Three-jet events

| Transverse momentum of the leading jet $\left(j_{1}\right)$ | $p_{\mathrm{T} 1}>510 \mathrm{GeV}$ |
| :--- | :--- |
| Transverse momentum of each jet and rapidity of $j_{1,2}$ | $p_{\mathrm{T}}>30 \mathrm{GeV},\left\|y_{1,2}\right\|<2.5$ |
| Azimuthal angle difference between $j_{1}$ and $j_{2}$ | $\pi-1<\Delta \phi_{12}<\pi$ |
| Transverse momentum ratio between $j_{2}$ and $j_{3}$ | $0.1<p_{\mathrm{T} 3} / p_{\mathrm{T} 2}<0.9$ |
| Angular distance between $j_{2}$ and $j_{3}$ | $R_{\text {jet }}+0.1<\Delta R_{23}<1.5$ |
| Number of selected events at $\sqrt{s}=8(13) \mathrm{TeV}$ | $777618(613254)$ |
| $\mathrm{Z}+$ two-jet events |  |
| Transverse momentum of the Z boson $\left(j_{1}\right)$ | $p_{\mathrm{T} 1}>80 \mathrm{GeV},\left\|y_{1}\right\|<2$ |
| Transverse momentum and rapidity of $j_{2}$ | $p_{\mathrm{T} 2}>80 \mathrm{GeV},\left\|y_{2}\right\|<1$ |
| Transverse momentum and rapidity of $j_{3}$ | $p_{\mathrm{T} 3}>20 \mathrm{GeV},\left\|y_{3}\right\|<2.4$ |
| Azimuthal angle difference between Z and $j_{2}$ | $2<\left\|\Delta \phi_{12}\right\|<\pi$ |
| Dimuon mass | $70<m_{\mu^{+} \mu^{-}}<110 \mathrm{GeV}$ |
| Angular distance between $j_{3}$ and $j_{2}$ | $0.5<\Delta R_{23}<1.5$ |
| Number of selected events | 15466 |

