| Source | # | Description | Range |
|---|---|---|---|
| Pileup | | | |
| *PileUpDataMC* | 01 | Data vs. MC simulation offset with random cone (RC) method | $\lvert\eta\rvert < 5.2$ |
| *PileUpPtRef* | 02 | True offset vs. RC $\otimes$ absolute $p_{\mathrm{T}}$ | $\lvert\eta\rvert < 5.2$ |
| *PileUpPtBB* | 03 | True offset vs. RC $\otimes$ relative $\eta$ | $\lvert\eta\rvert < 1.3$ |
| *PileUpPtEC1* | 04 | True offset vs. RC $\otimes$ relative $\eta$ | $1.3 < \lvert\eta\rvert < 2.5$ |
| *PileUpPtEC2* | 05 | True offset vs. RC $\otimes$ relative $\eta$ | $2.5 < \lvert\eta\rvert < 3.0$ |
| *PileUpPtHF* | 06 | True offset vs. RC $\otimes$ relative $\eta$ | $3.0 < \lvert\eta\rvert < 5.2$ |
| (alternative source) | | | |
| *PileUpMuZero* | 02-06b | True offset vs. RC $\otimes$ residual JES for $\langle\mu\rangle = 0$ | $\lvert\eta\rvert < 5.2$ |
| (benchmark source) | | | |
| *PileUpEnvelope* | 02-06c | True offset vs. RC $\times$ 60% | $\lvert\eta\rvert < 5.2$ |
| Relative JES (vs. $\eta$) | | | |
| *RelativeJEREC1* | 07 | Jet $p_{\mathrm{T}}$ resolution | $1.3 < \lvert\eta\rvert < 2.5$ |
| *RelativeJEREC2* | 08 | Jet $p_{\mathrm{T}}$ resolution | $2.5 < \lvert\eta\rvert < 3.0$ |
| *RelativeJERHF* | 09 | Jet $p_{\mathrm{T}}$ resolution | $3.0 < \lvert\eta\rvert < 5.2$ |
| *RelativeFSR* | 10 | ISR+FSR correction | $\lvert\eta\rvert < 5.2$ |
| *RelativeStatFSR* | 11 | ISR+FSR statistical uncertainty | $\lvert\eta\rvert < 5.2$ |
| *RelativeStatEC2* | 12 | Statistical uncertainty | $2.5 < \lvert\eta\rvert < 3.0$ |
| *RelativeStatHF* | 13 | Statistical uncertainty | $3.0 < \lvert\eta\rvert < 5.2$ |
| *RelativePtBB* | 14 | Log-lin. vs. flat fit $\times$ 50% | $\lvert\eta\rvert < 1.3$ |
| *RelativePtEC1* | 15 | Log-lin. vs. flat fit $\times$ 50% | $1.3 < \lvert\eta\rvert < 2.5$ |
| *RelativePtEC2* | 16 | Log-lin. vs. flat fit $\times$ 50% | $2.5 < \lvert\eta\rvert < 3.0$ |
| *RelativePtHF* | 17 | Log-lin. vs. flat fit $\times$ 50% | $3.0 < \lvert\eta\rvert < 5.2$ |
| *TimeEta* | 18 | Relative $\eta$ time dependence | $\lvert\eta\rvert < 5.2$ |
| Absolute JES (vs. $p_{\mathrm{T}}$) | | | |
| *AbsoluteScale* | 19 | Lepton scale, $\pm$0.11% | $\lvert\eta\rvert < 5.2$ |
| *AbsoluteMPFBias* | 20 | MPF bias, $\pm$0.28% (from $\nu$'s $\oplus$ ISR acceptance, 0.2% $\oplus$ 0.2%) | $\lvert\eta\rvert < 5.2$ |
| *AbsoluteStat* | 21 | Statistical uncertainty vs. $p_{\mathrm{T}}$ | $\lvert\eta\rvert < 5.2$ |
| *SinglePionECAL* | 22 | Single-pion response in ECAL, $\pm$4.2% | $\lvert\eta\rvert < 5.2$ |
| *SinglePionHCAL* | 23 | Single-pion response in HCAL, $\pm$1.5% | $\lvert\eta\rvert < 5.2$ |
| *Fragmentation* | 24 | Jet fragmentation in PYTHIA6.4 vs. HERWIG++2.3 | $\lvert\eta\rvert < 5.2$ |
| *TimePt* | 25 | Absolute $p_{\mathrm{T}}$ time dependence (indirectly with charged-pion $E_{\mathrm{HCAL}}/p$) | $\lvert\eta\rvert < 5.2$ |
| Jet flavor | | | |
| (only one of these) | | | |
| *FlavorQCD* | 26a | QCD dijet mixture (default) | $\lvert\eta\rvert < 5.2$ |
| *FlavorZJet* | 26b | Z+jet mixture | $\lvert\eta\rvert < 5.2$ |
| *FlavorPhoton* | 26c | $\gamma$+jet mixture | $\lvert\eta\rvert < 5.2$ |
| (or mixture of these) | | | |
| *FlavorGluon* | 26d1 | Pure gluon (g) (incl. g $\rightarrow$ q$\bar{\mathrm{q}}$ and unmatched) | $\lvert\eta\rvert < 5.2$ |
| *FlavorQuark* | 26d2 | Pure light quark (uds) | $\lvert\eta\rvert < 5.2$ |
| *FlavorCharm* | 26d3 | Pure charm (c) | $\lvert\eta\rvert < 5.2$ |
| *FlavorBottom* | 26d4 | Pure bottom (b) (Pure flavors refer to the *Physics* definition) | $\lvert\eta\rvert < 5.2$ |