The triggered data includes events containing cosmic ray interactions, beam halo and detector noise. These contributions are mostly asymmetric and lead to a large imbalance in the momentum in the plane transverse to beam direction, $\not{E}_T$. In contrast, for QCD jet production, $\not{E}_T$ is ideally zero, apart from a small neutrino contribution. In QCD events, $\not{E}_T$ arises mainly from fluctuations in calorimeter response and is much smaller than the total energy observed in the detector. Most of these background events are removed by requiring the ratio of $\not{E}_T$ to the transverse momentum of the leading jet to be small. Remaining backgrounds are removed by requiring that the shape of energy deposition in the calorimeters be consistent with the expected shape from a hadronic jet. The shape of energy deposition for a jet is very different from the energy deposited by a cosmic muon or a beam halo particle, as a jet consists of many particles. These shape requirements also remove photons and electrons. These requirements are highly efficient for the signal and the remaining background is estimated to be $< 0.1\%$.

The measured p_{T} of each jet is corrected for calorimeter non-linearity and energy lost in uninstrumented regions. These average jet-by-jet energy corrections do not correct the smearing (bin-to-bin migration) of jets due to the finite energy resolution. This smearing is determined using an iterative procedure. It is assumed that the particle level physics (true) spectrum is described by the function

$$F(p_{\mathrm{T}}, y) = N_0 \left(\frac{p_{\mathrm{T}}}{100\,\mathrm{GeV/c}} \right)^{\alpha} \left(1 - \frac{2p_{\mathrm{T}} \cosh(y_{\mathrm{min}})}{\sqrt{s}} \right)^{\beta} \exp(-\gamma p_{\mathrm{T}}), \tag{6}$$

where y_{min} is the rapidity lower bin edge. This functional form is a good representation of the NLO pQCD prediction and fits the measured raw inclusive jet spectrum well. This true spectrum is smeared using the jet energy resolution function, which is determined using $p\bar{p}$ collider dijet data and simulated dijet events. The resulting smeared spectrum is compared with data using a χ^2 test. The process is iterated to determine the best parameters $(N_0, \alpha, \beta, \gamma)$ of the true function, $F(p_{\mathrm{T}}, y)$. This true spectrum is used to correct the migrations between bins in p_{T} in the observed data. In the central region, the migration correction is a multiplicative factor that is $0.8 - 0.9$ at low p_{T} and 0.7 at higher p_{T}, with a strong dependence on y. The true spectrum $F(p_{\mathrm{T}}, y)$ is measured separately for each rapidity bin. The jet rapidity is measured very precisely and thus migration between rapidity bins is small. The y migration corrections are less than 2% in most bins and 10% in the highest p_{T} bin where spectrum is the steepest. The rapidity unsmearing is applied after the