Signal in pure DC pixel without shower

Distribution of QDC-reconstructed Events

Distribution of BDT-reconstructed Events

Distribution of BDT-reconstructed Events, after cuts

We have 198 events. 39 events having a multiplicity > 3 using BDT cuts,
and 7 events having a multiplicity > 3 using QDC cuts
We define a target pixel as one in which the DC pixel has a shower-free intensity of 150 or more.
Of 175 identified pixels, we have 102 target pixels, which we would hope to identify.
In total, 11 pixels are correctly identified using QDC method. Method Identified 6.3 % of all images.
In total, 50 pixels are correctly identified using BDT method. Method Identified 28.6 % of all images.
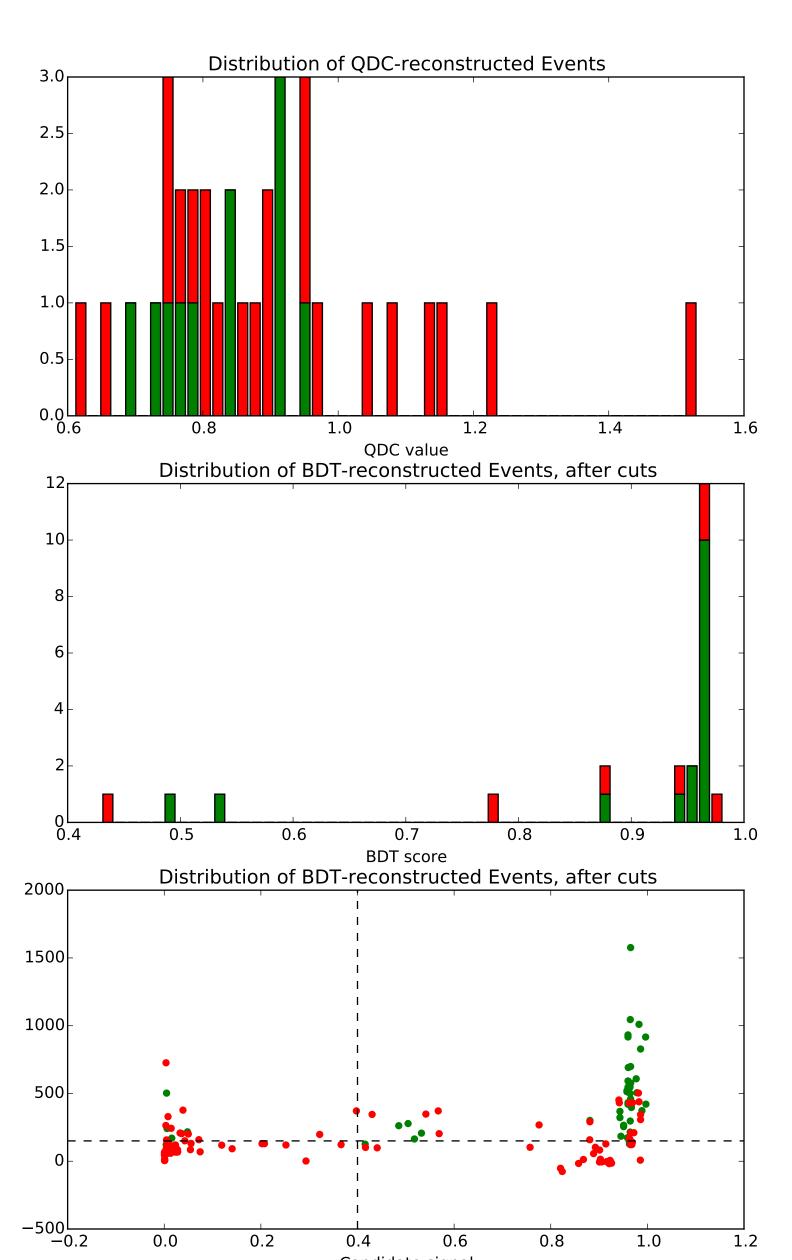
Our QDC cut requires QDC < 0.14 log(Itot / 161 cos(theta)), and multiplicity > 3 .
We have 4 images passing this cut.
Of these, 0 are correctly identified images.
Successful ID rate after cut is 0.0 % Fraction of target pixels correctly identified is 0.0 %

Our BDT cut requires Signal Probability > 0.4 .
We have 83 pixels passing this cut. Of these, 41 are correctly identified pixels.
Successful ID rate after cut is 49.4 % Fraction of target pixels correctly identified is 23.4 %

We check for pixels that have Signal Probability > 0.4 and signal > 150 , and multiplicity > 3.
We check for events that have a multiplicity > 3 .
We have 23 pixels passing this cut. Of these, 16 are correctly identified pixels.
Successful ID rate after cut is 69.6 % Fraction of target pixels correctly identified is 9.1 %

Distribution of BDT-reconstructed Events, after cuts