

Improving pile-up handling in the Mu2e calorimeter MC

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Abstract

In a pileup-dominated Mu2e environment, reconstruction of the conversion electron clusters in the calorimeter is affected by the presence of the background hits overlapping in space and time with hits produced by the conversion electron.

We present an algorithm which, in a parameterized way, emulates the waveform digitization and pulse reconstruction in the calorimeter in the presence of pileup.

For the CE Monte Carlo, using the new algorithm increases the number of clusters in the CE peak $[95 - 105]$ MeV by about 20-25%, compared to the present defaults.