CNN in offline reconstruction

Goal: train Convolutional Neural Network (CNN) prototype
for clustering and energy regression

→ Useful as baseline for later studies of graph networks (GNN)

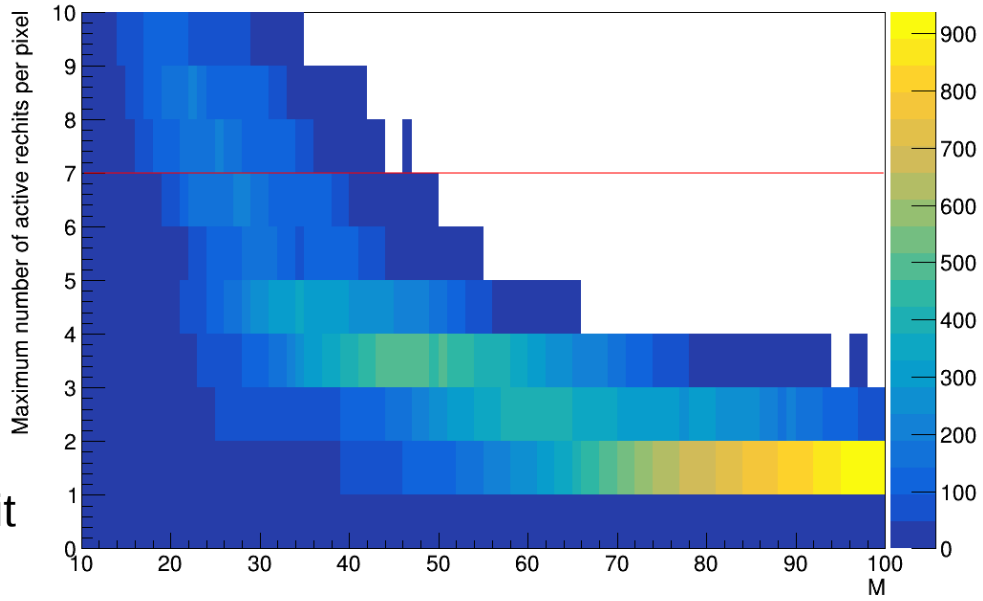
Today:

- Define coarse grid (“pixels”)
in (η, φ, layer number)
with ≤ 6 active sensors per “pixel”

  Layer number
  obtained from rechit z

Find sensible grid in (η, φ) space:

Center: energy weighted rechit (η, φ)
Boundary: square in (η, φ) plane around it
Grid division: MxM pixels



Grid of 50 x 50 pixels in (η, φ) seems OK

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Plan for tomorrow:

- Transform GNN training input to input needed for CNN
  - e.g. each pixel in grid will have corresponding features of contained rechits
- Convert GNN training dataset root files in the new format
- Once done, can look at CNN implementation itself