Weekly

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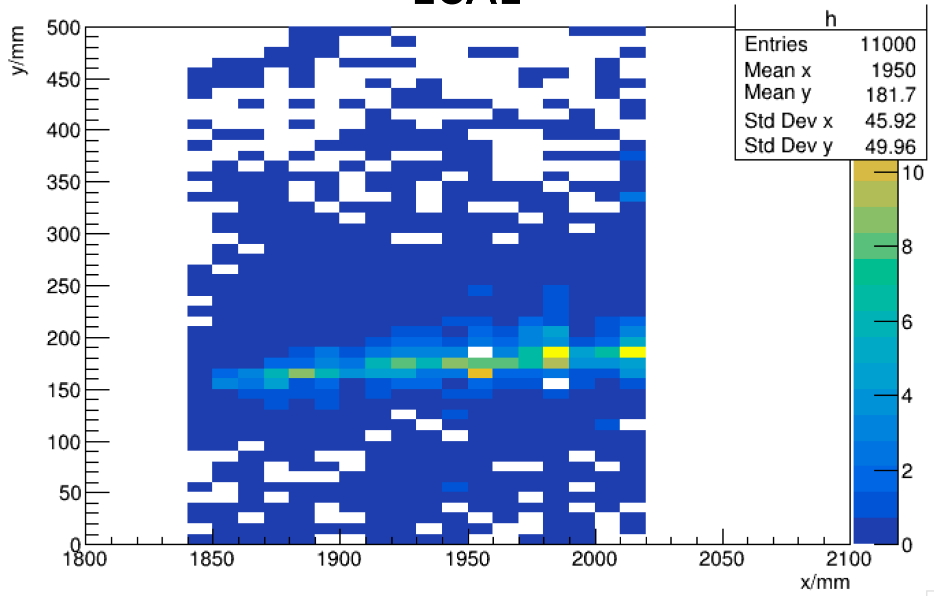
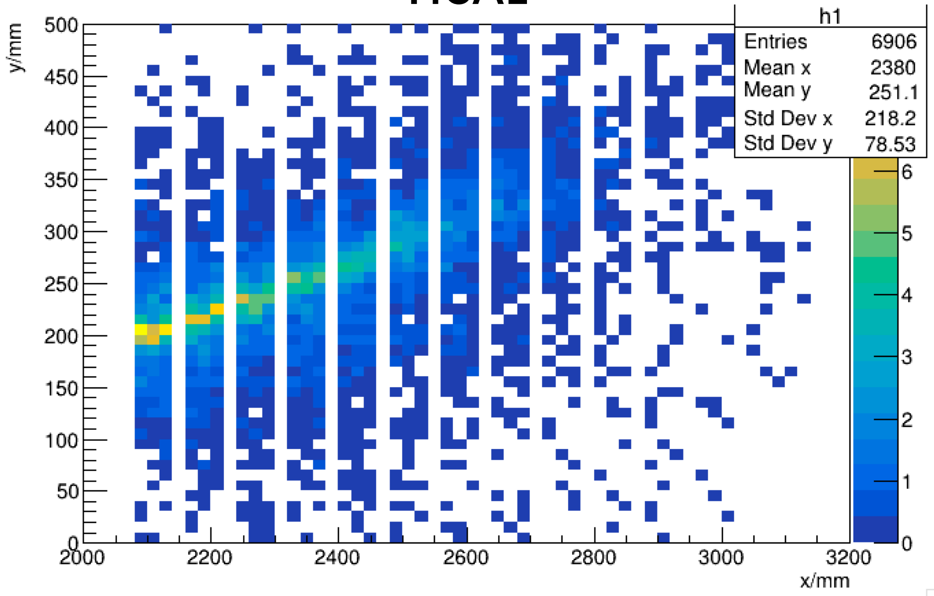
Working status

- **Deep-learning study for CEPC calorimeter:**
  - Template preparation: single particle (e^-, π^-) with CEPC_v4 in CDR.
    - ECAL: Si-W, cell size 1*1 cm^2, 30 layers.
    - HCAL: RPC, cell size 1*1 cm^2, 40 layers, digital readout mode (E_{hit} is uniform).
    - Data structure: vectors in ROOT file, with (x, y, z, E, T, $\mathrm{tag_{MCP}}$, $\mathrm{tag_{PID}}$) for each hit.
      - tag_{PID} for particle ID, tag_{MCP} for clustering.

ECAL



HCAL



Working status

- **Data size (Nhit in each event)**
  - Single π^- in barrel region: ~200 for ECAL+HCAL.
- **Next step:**
  - Investigate the data frame for DGCNN, PointNet and Transformer, try to implement the data to the network.
  - Report in CALICE about the calorimeter clustering with GNN.