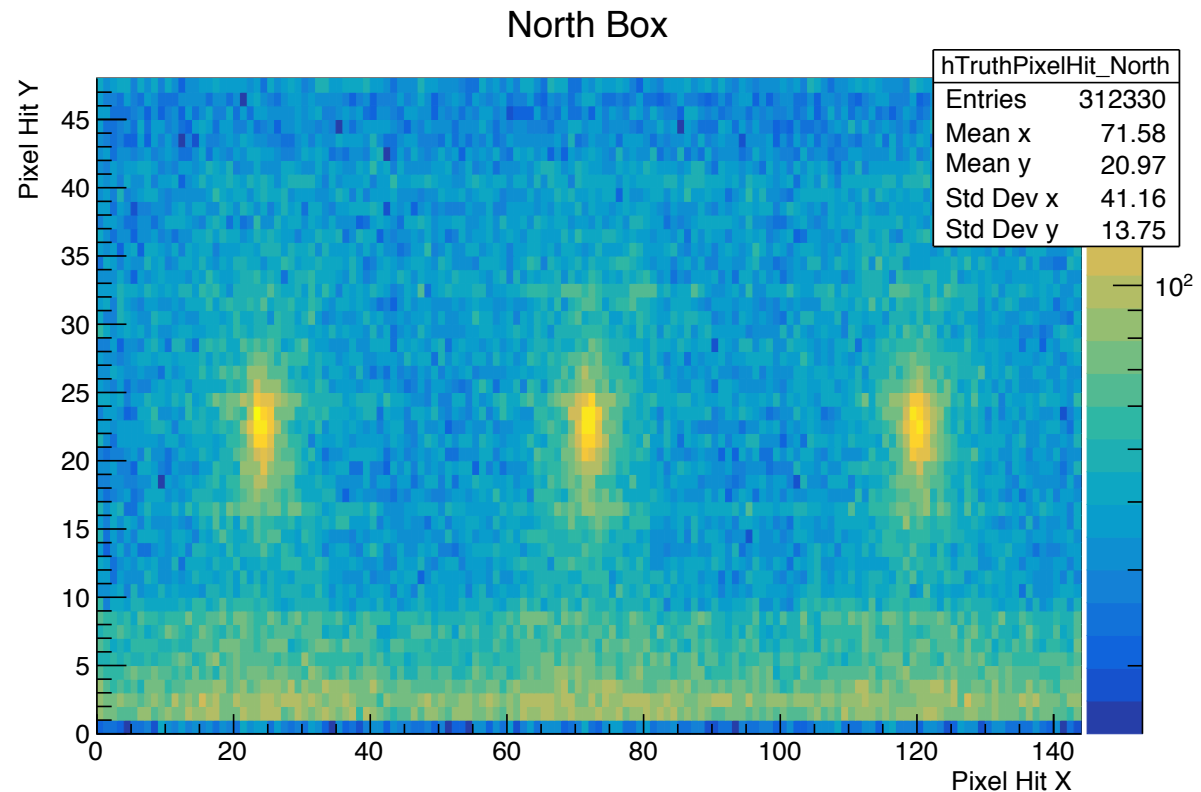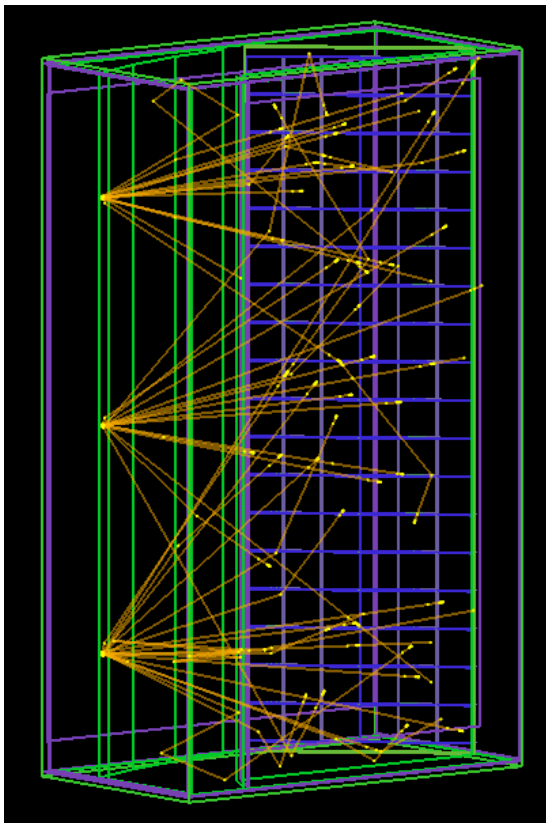# LED generator: status

- An LED generator is written in HDGeant4 and can produce hit maps

LED generator: details

- Photons are generated as particle gun

- For each event, throw a random number in [0, 1] and decide from which fiber feed-through to generate this photon

- Smear the starting location of this photon according to the diffuser shape

- Randomly pick the photon direction (θ, φ), with θ range given by some maximum "opening angle", and φ in [0, 2π]

- Photon energy is monochromatic currently. Can smear this easily if needed

LED generator: next

- Need inputs of:
  - Diffuser shape
  - "Opening angle"

- Next:
  - Specify detailed goals of the LED simulation study
  - Write calibration plugin(s) to analyze hits