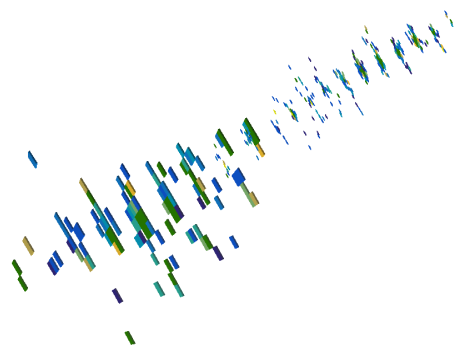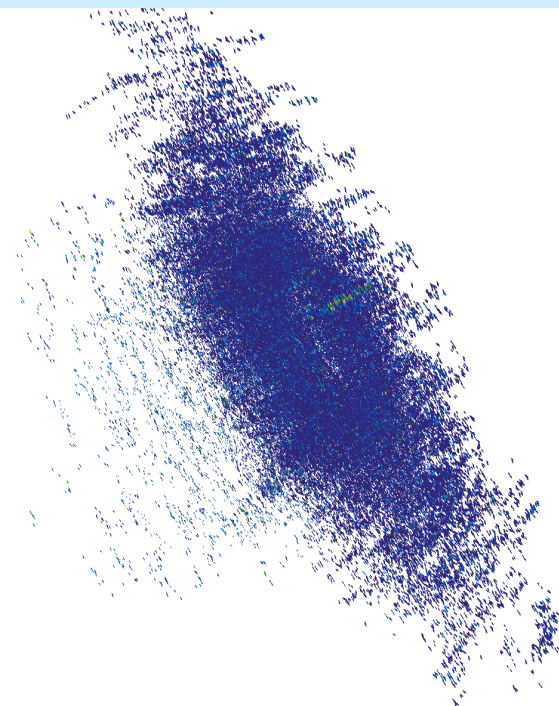# A big challenge: Pile Up [PU]

■ Average pileup in Run2 ~30; expected ~70 for Run3; ~150-200 at HL-LHC

   ◆ Requires extended detector capabilities [we have it with HGC ☺]

   ◆ And innovation in pileup mitigation techniques

      ● E.g. timing information, energy deposit in the detector, shower pattern, etc..

Single-pion with E=100 GeV [PU=0]

The same particle in PU=200

Task: identify the single-pion in PU=200