

TPC Software Framework

- **Conceptual design of LAMPS-TPC software**

- C++ framework based on the CERN ROOT framework
- Being developed based on FOPIROOT

FOPIROOT

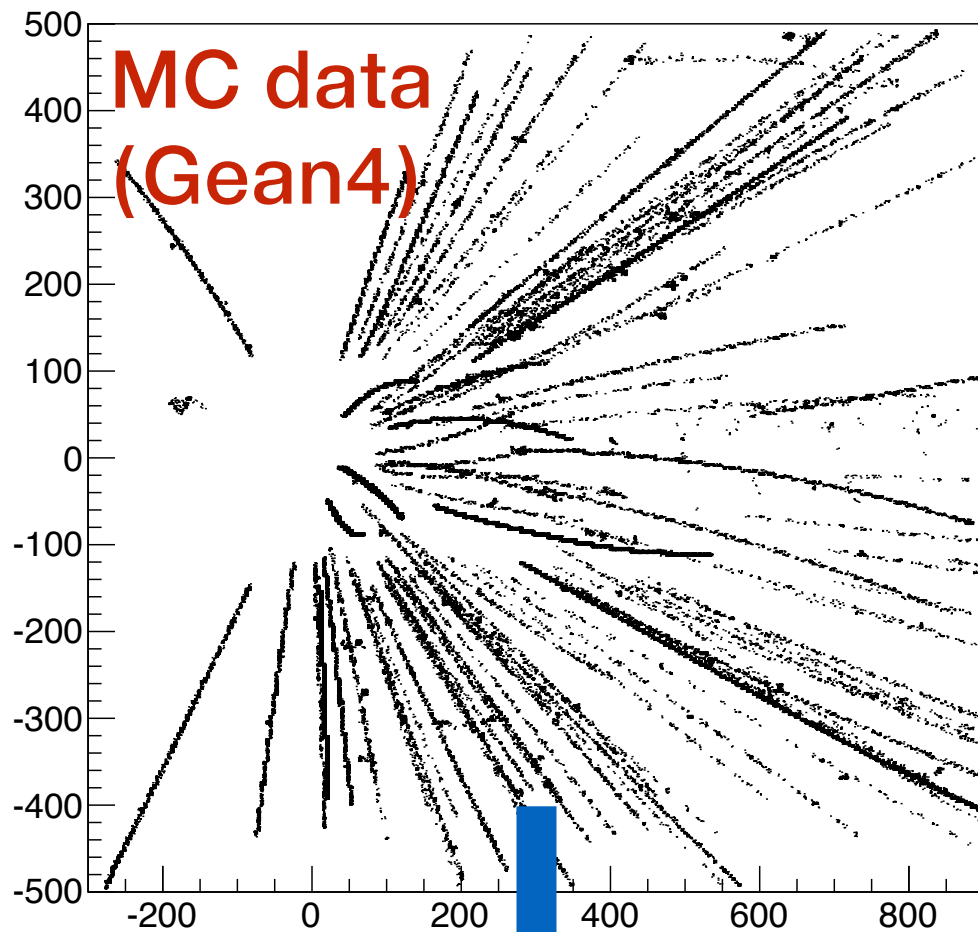
- ROOT based software package for FOPI-TPC which has very similar hardware structure to LAMPS-TPC
- Complete framework, modular design, open source, large user/experiment base

- **Structure of Monte Carlo simulations and data reconstructions**

- Particle generation (✓)
- Particle transport (GEANT4): energy loss via interaction with material in the magnetic field. (✓)
- Detector response: hits (✓), drifting (✓), pad response, digitization (✓)
- Tracking: clusterization (✓), tracking

- **Status and plan**

- Framework will be developed based on FOPIROOT
- (✓) has been already developed separately as a priori version, and it will be modified/integrated into the framework



Event display at different Monte Carlo simulation steps based on a priori package

Note: plots on the level of debugging and tuning

- **AuAu at 250 MeV central collisions, IQMD soft model (input from GSI)**
- **B field: 0.5 T, E field: 1 kV/cm**
- **Gas mixture: Ar(90%)+CO₂(10%)**
- **Hexagonal pad (5mm), non-maya pattern**

