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%)+CO_2(10%)**
- **Hexagonal pad (5mm), non-maya pattern**