DRUID: Displaying Root module Used for ILD

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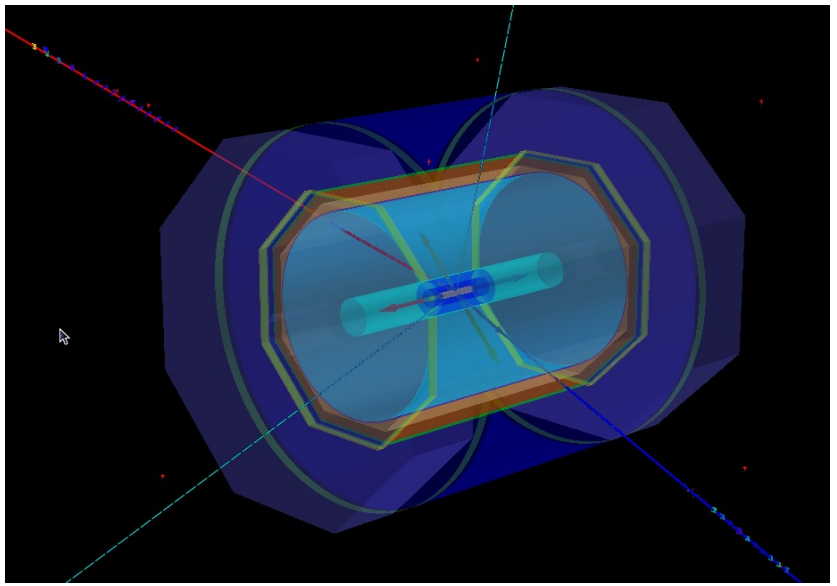
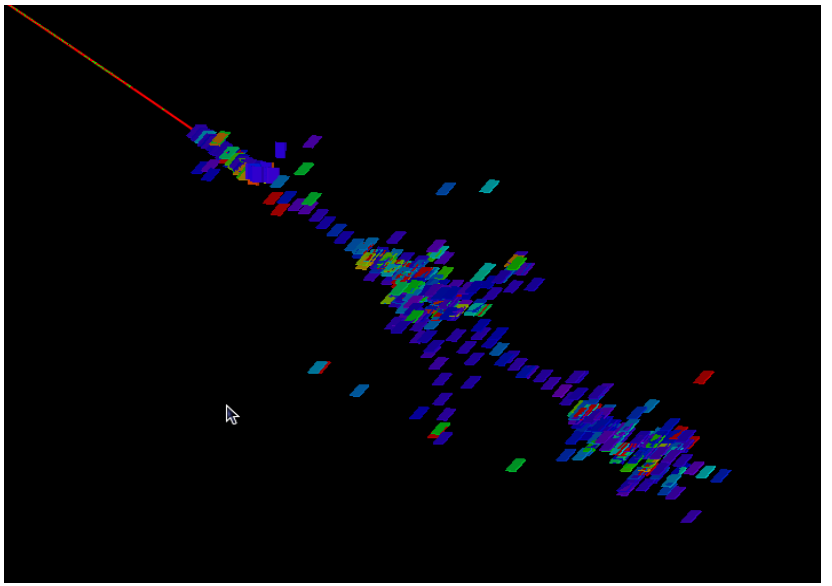
Introduction

- Motivation: understand the ILC events & jet/shower details!



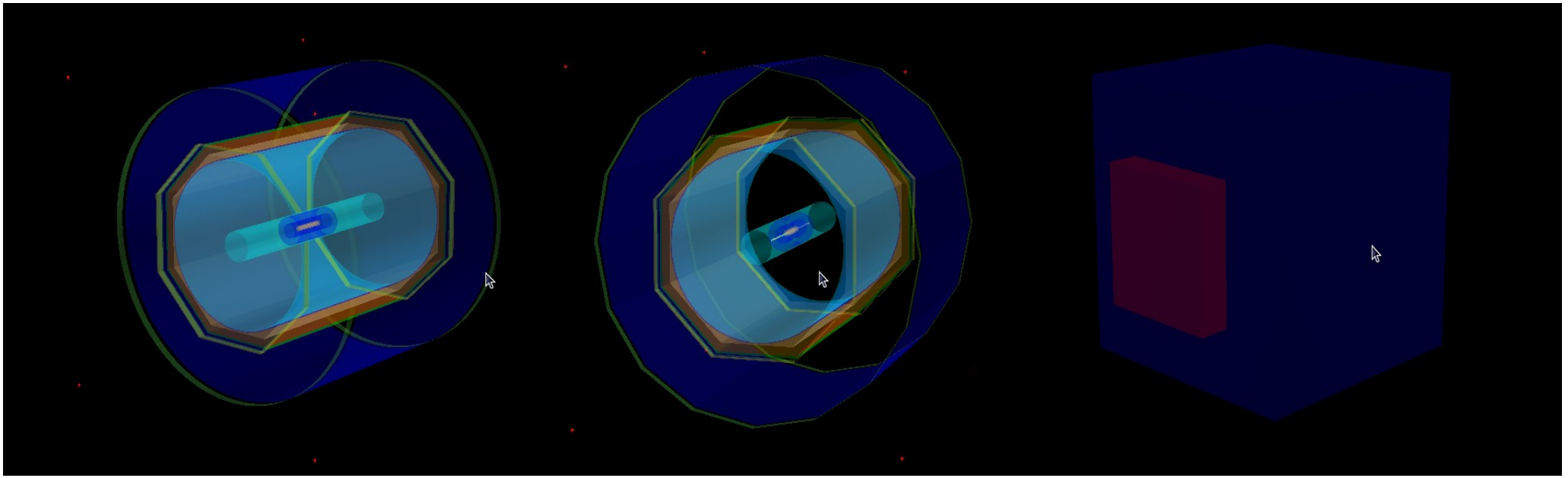


Left: μμνν event; Right: shower created by 100GeV Pion

- DRUID: a compilable, lightly weighted 3D event display package based on ROOT TEve class (src code ~ 200K)
  - Input: lcio file + gear xml geometry description file

Supported Geometries

- ILD with TESLA/a la Videau HCAL;
- CALICE test beam frame (parameters not tuned);

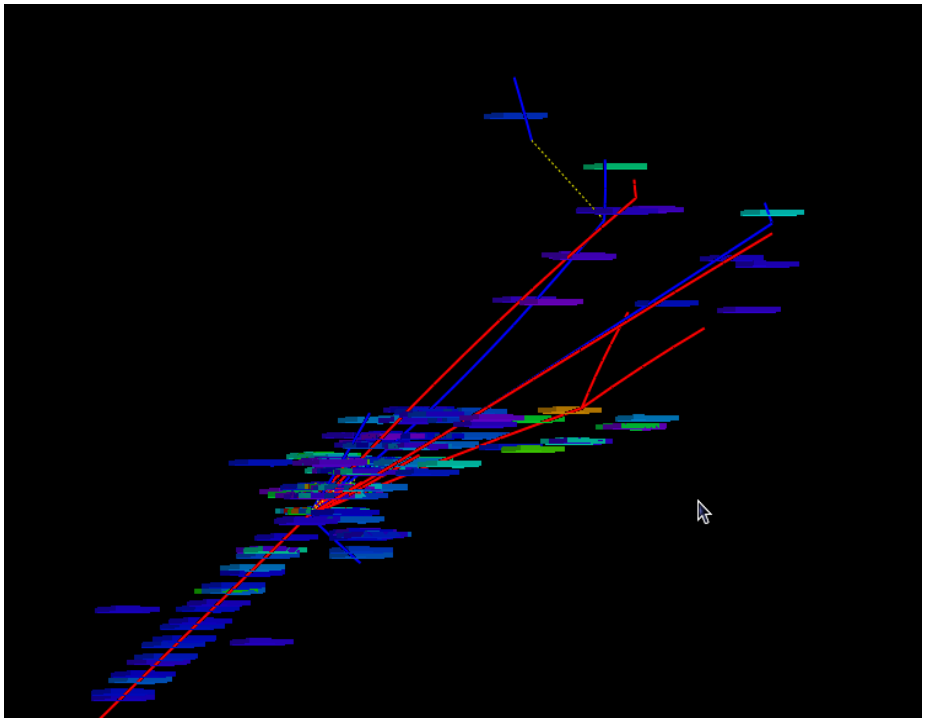


Left to Right: a la Videau, TESLA (DHCAL EndCap dismounted) & CALICE TB

- Mount and dismount sub detectors interactively in GUI;
- Tune parameters of detectors in input gear file;

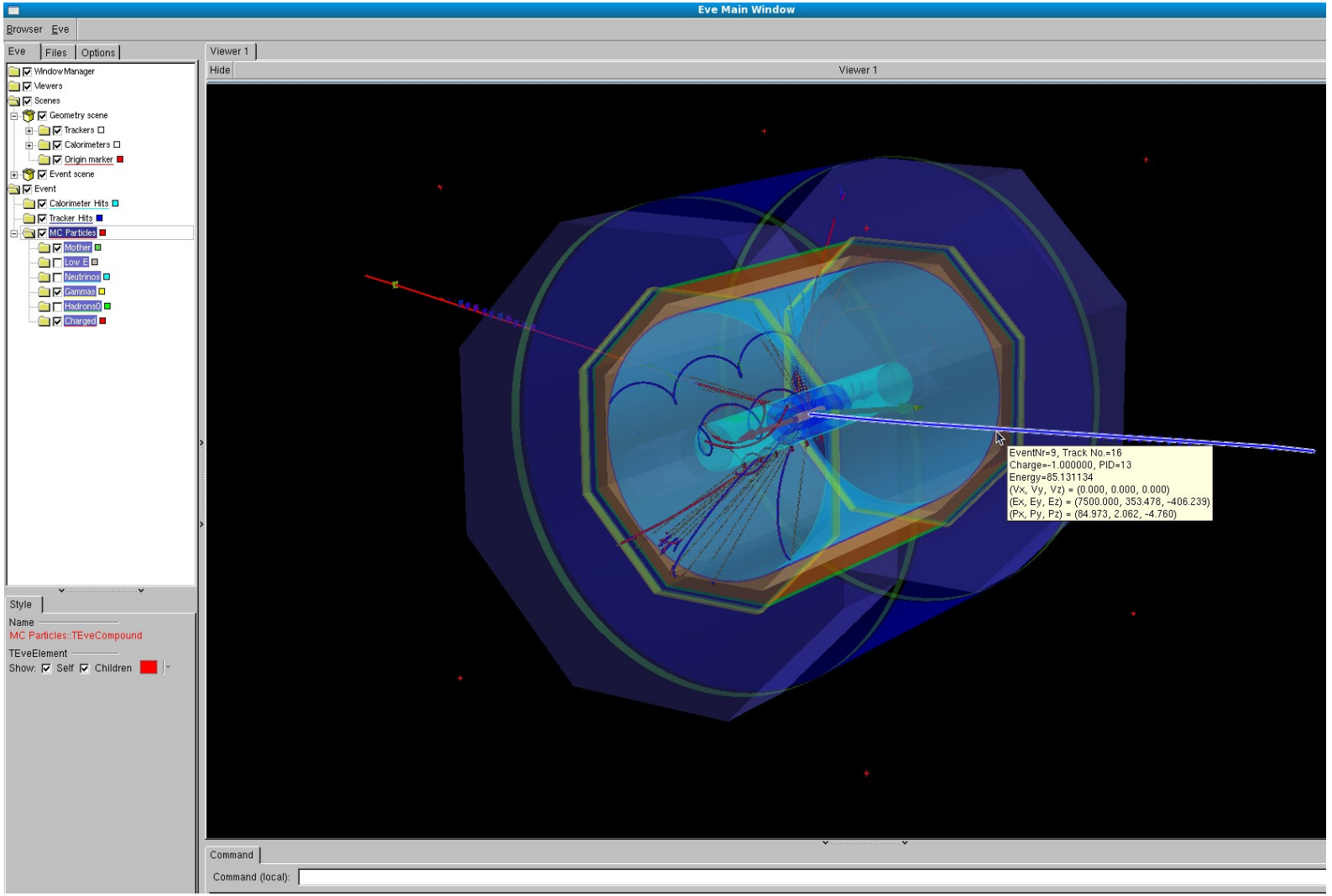
Displayed objects

- Detector Geometry;
- Detector hits:
  - Simulated/reconstructed hits for each sub-detector. Color is used to denotes the hits energy.
- Estimated Tracks:
  - From the MCParticle list (contains the particles generated in simulation, i.e, shower details)
  - Divided into different groups: charged, low energy, neutrinos ...



Displaying options

- Zoom;
- Rotate;
- Projection;
- Display/hidden;
- Pick up object & read attached text information



To do list

- Style optimization
  - Simulated objects: classify all the detector hits/estimated tracks according to their origin (quark & leptons in the VTX)
  - Reconstructed objects: define the style for complex objects (clusters, PFOs, etc)
- Detector geometry extension
  - Specify parameters for test beam geometries: (Si-W ECAL, AHCAL, Mini-DHCAL, 1 cubic meter...)
- Display acceleration

Summary

- DRUID is now available to do the event display for ILD/CALICE test beam events
- Preliminary version available at the in2p3 SVN server http://cvs.in2p3.fr/calice/analyse/trunk/ILDDisplay or http://polywww.in2p3.fr/~ruan/ILDDisplay/Druid_0.0.tar.gz
- New versions will be released with Mokka to include the new geometries
- To improve: waiting for your comments & suggestions!