Linear Collider Event Display: Druid

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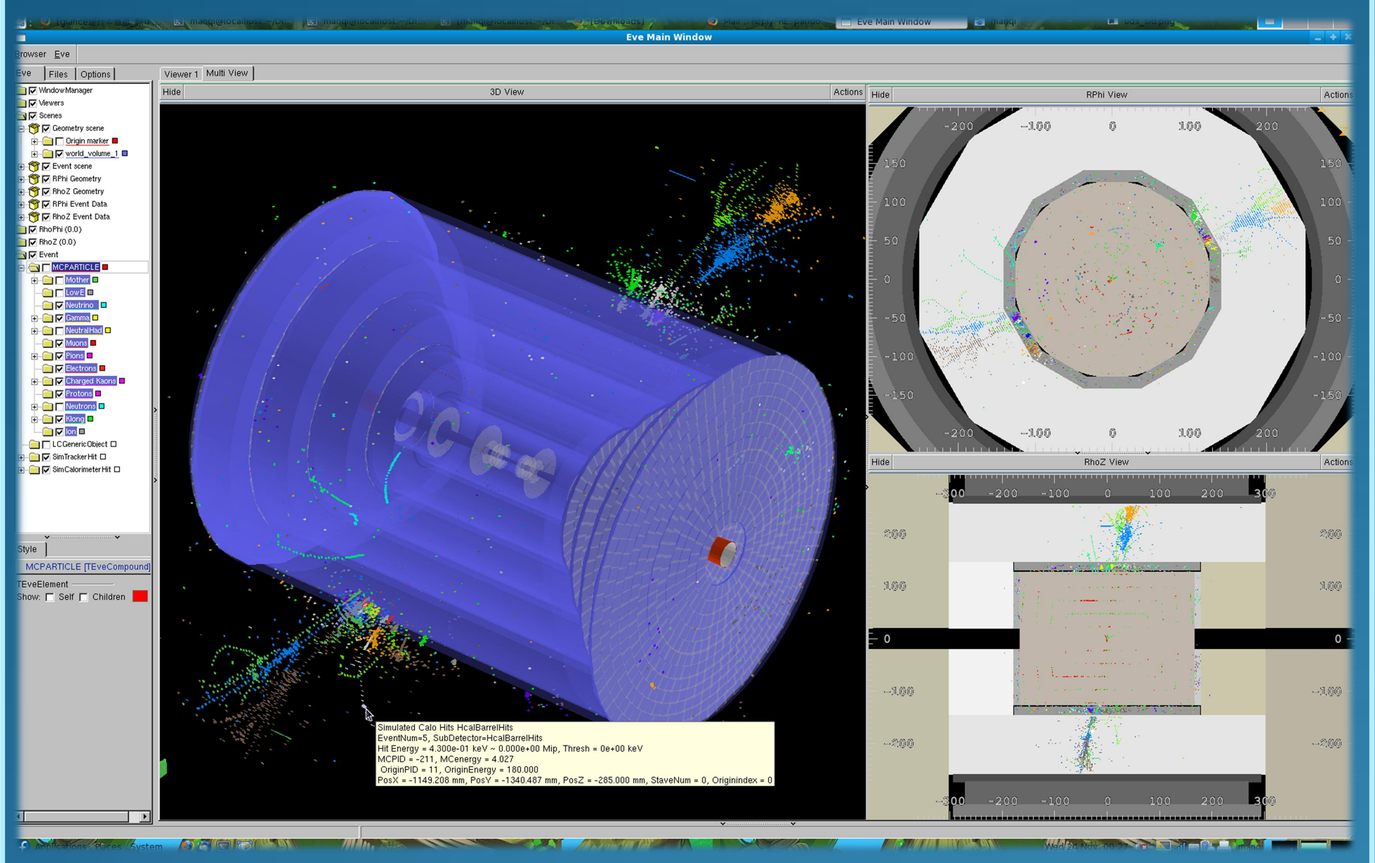
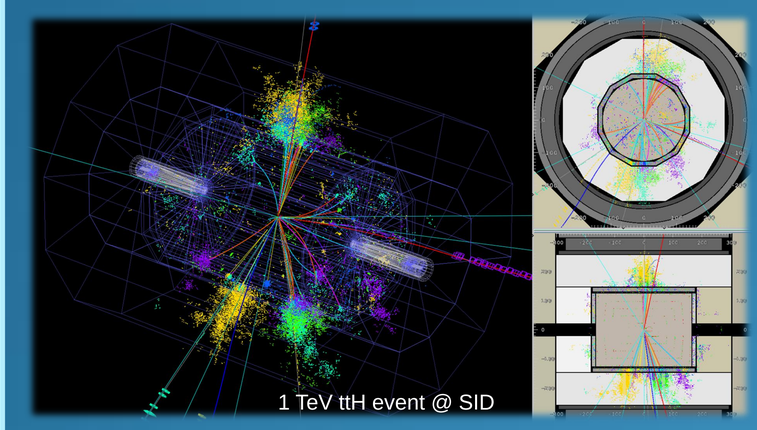
Motivation: to understand simulated/experimental data, to verify detector geometry, to debug reconstruction/analysis code & online/offline monitoring…

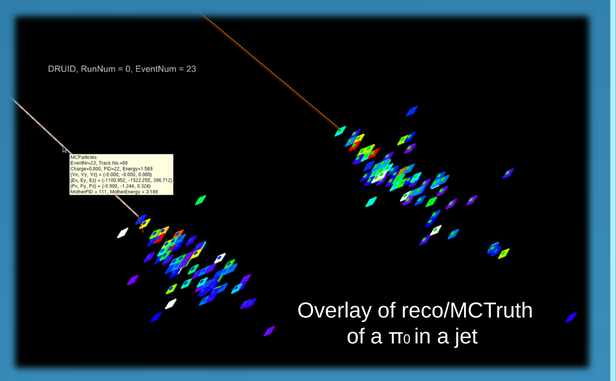
ROOT[1] & LCIO[2]: utilizing root TEve[3] object to visualize event data (based on LCIO file) and TGeo object to visualize detector geometry (based on gdml[4] file)

Event data

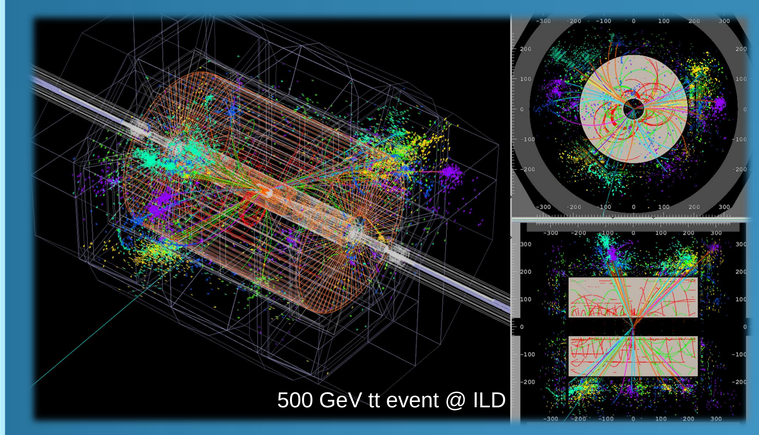
Independent event/geometry browsers allow arbitrary combination and overlay of different object selections, mouse-pick text information, zoom in/out, rotate, adjustable background illumination, reference frame & point…



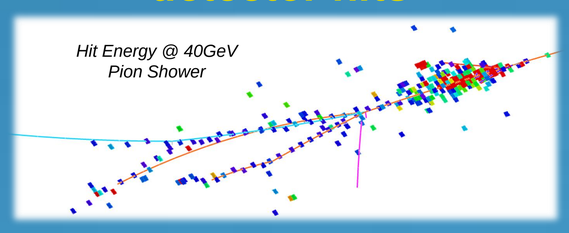

1 TeV ttH event @ SID

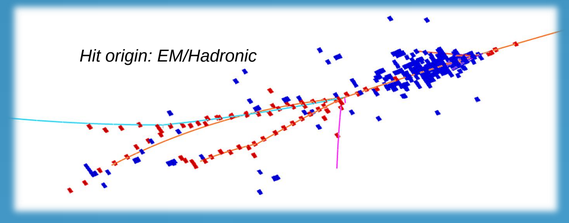


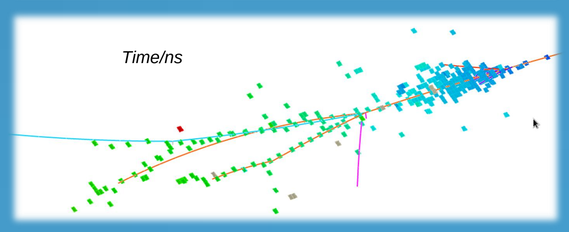
Overlay of reco/MCTruth of a π_0 in a jet

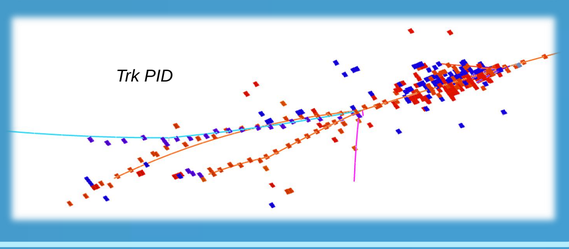

500 GeV tt event @ ILD

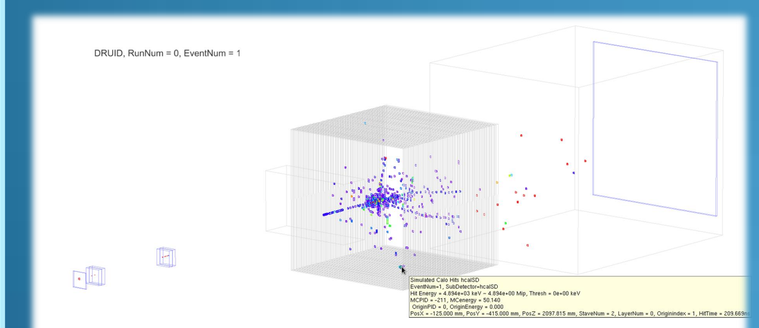
Color options for detector hits







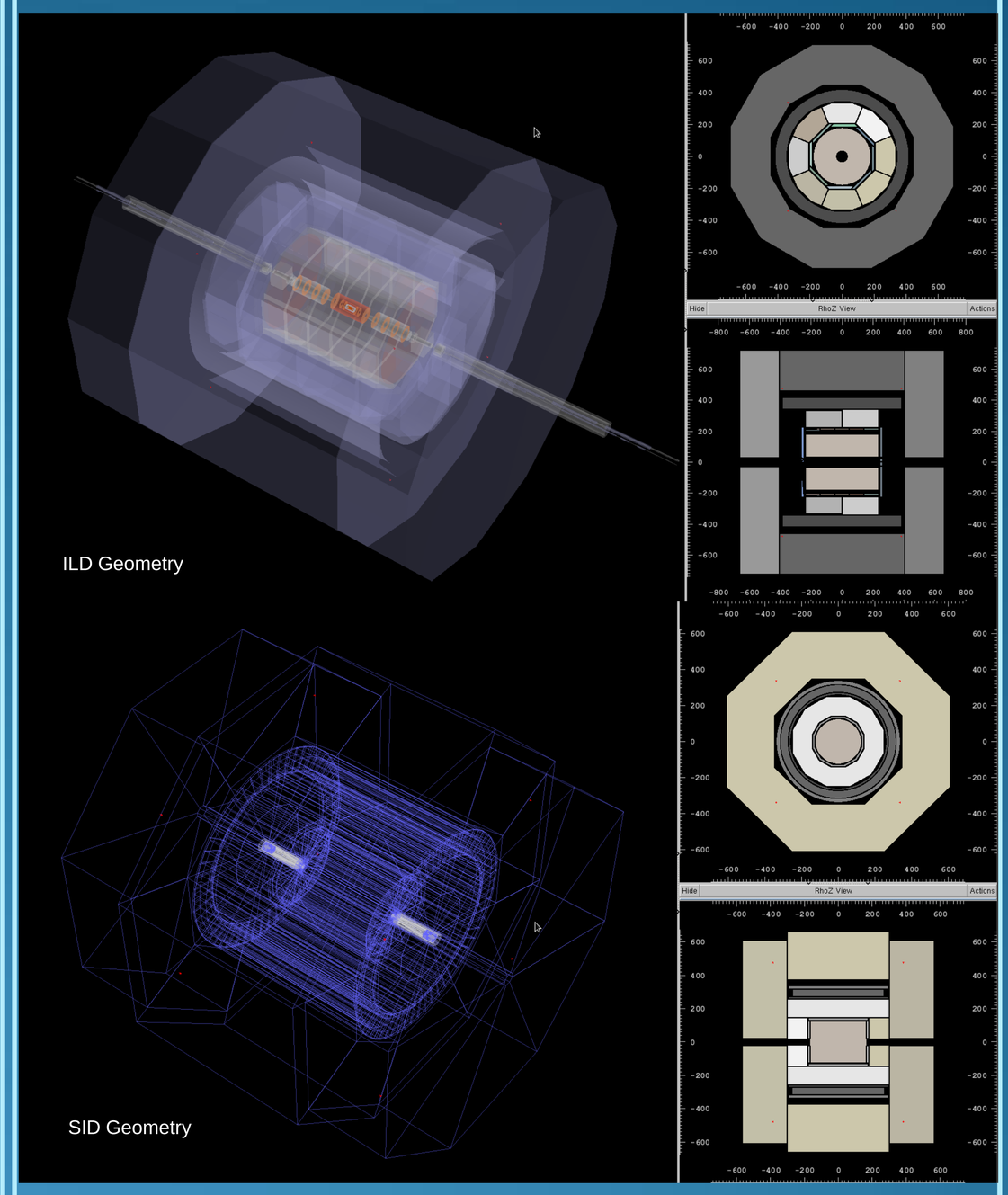




50 GeV Pion shower @ CALICE Test beam

Detector geometry

Support the geometries of all the latest Linear Collider detector concepts and test beam prototypes, with adjustable level of details up to simulation level



One ECAL Module with 30 layers

ILD: Tracker and part of Calo

Conclusion

Druid is ready, and is being heavy used in data analysis and reconstruction algorithm development…

Refefences

[1] http://root.cern.ch
[2] http://lcio.desy.de
[3] M. Tadel, PoS ACAT08 103 (2008): Eve - Event Visualization Environment of the root framework
[4] http://gdml.web.cern.ch/GDML