



JavaScript ROOT

Bertrand Bellenot (CERN), Sergey Linev (GSI Darmstadt)

Introduction

JavaScript ROOT provides interactive graphics in the web browsers for the major classes like histograms (TH1/TH2/TH3), graphs (TGraph), functions (TF1) and many others. Reading of binary and JSON ROOT files are supported.

Flexible and powerful JSROOT API used in different web-based applications to implement interactive data display - CERNBox, iPython notebooks, THttpServer UI and many others.

JSROOT with documentation and many examples can be found on <https://root.cern.ch/js/> website, developer repository is <https://github.com/linev/jsroot/>.

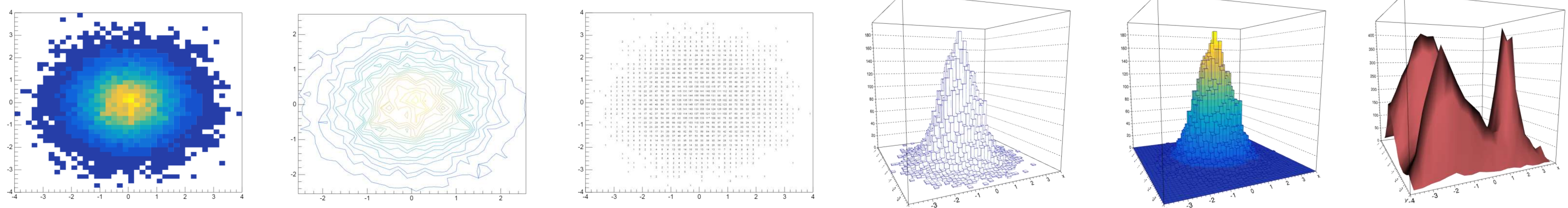
Improvements

- factor 5 faster binary I/O
- factor 3-10 faster 2D graphics
- factor 10 faster 3D graphics
- 2D and 3D zooming with mouse, touch and keyboard devices
- informative 2D/3D tooltips, also for superimposed objects
- many new TH2 draw options: 'text', 'arr', 'scat', 'cont', 'surf'
- more new classes supported like TH2Poly
- elementary TTree::Draw
- generic inspector for arbitrary ROOT objects
- full support of require.js
- integration with bower package manager and Node.js

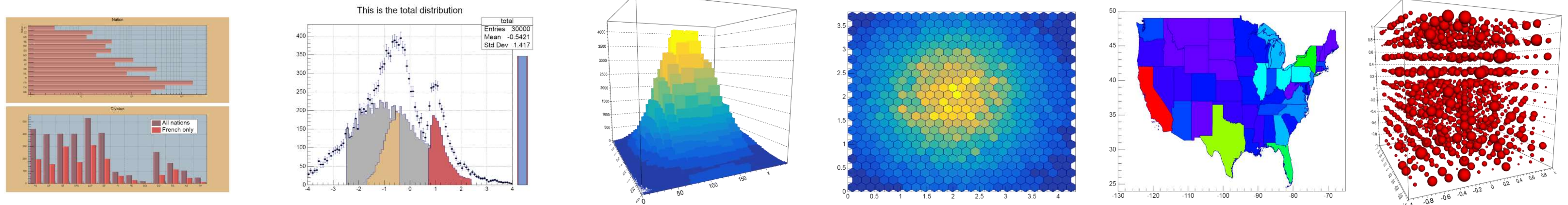
New geometry viewer

- Support both TGeo and TEve based classes
- Support all shapes kinds, including composite
- Display models of arbitrary complexity
- Superimpose with tracks and/or hits
- Browsing of complete nodes hierarchy
- Tooltips and volume highlight
- Toggling visibility flags
- Focus on selected volume
- Optional clip panels
- Simple animation
- Configurable global transparency

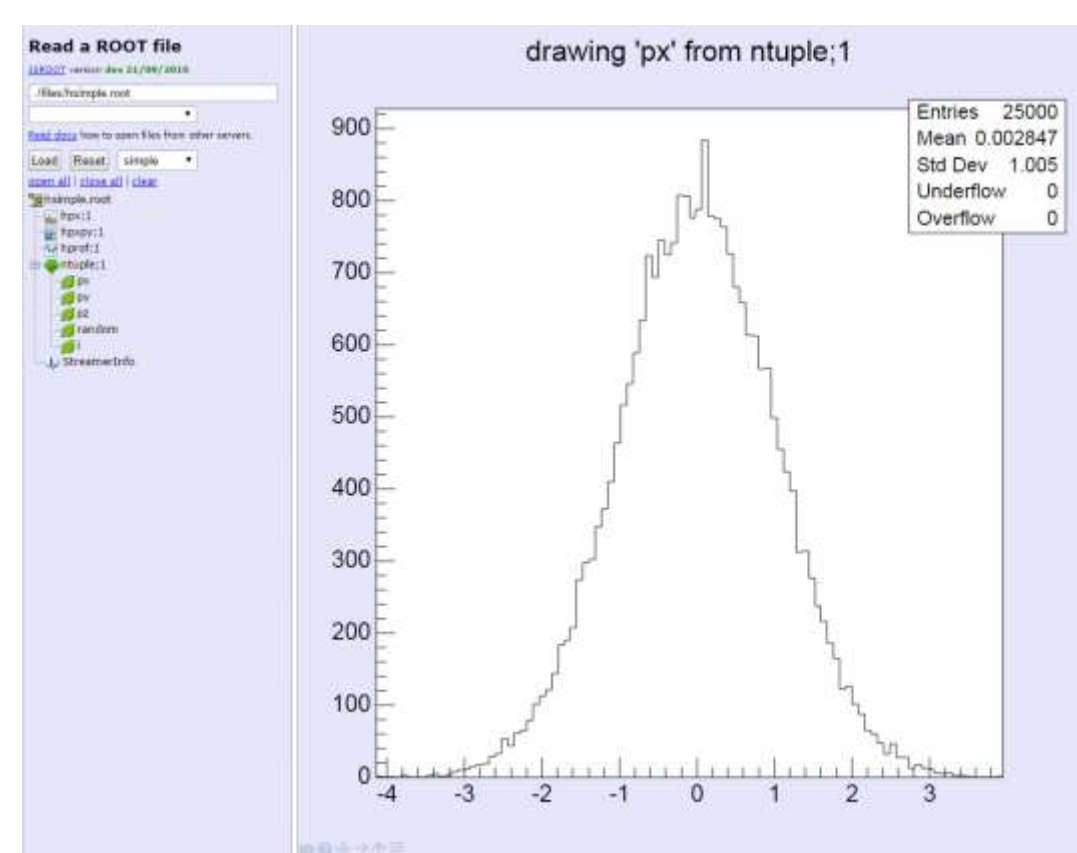
Different TH2 draw options



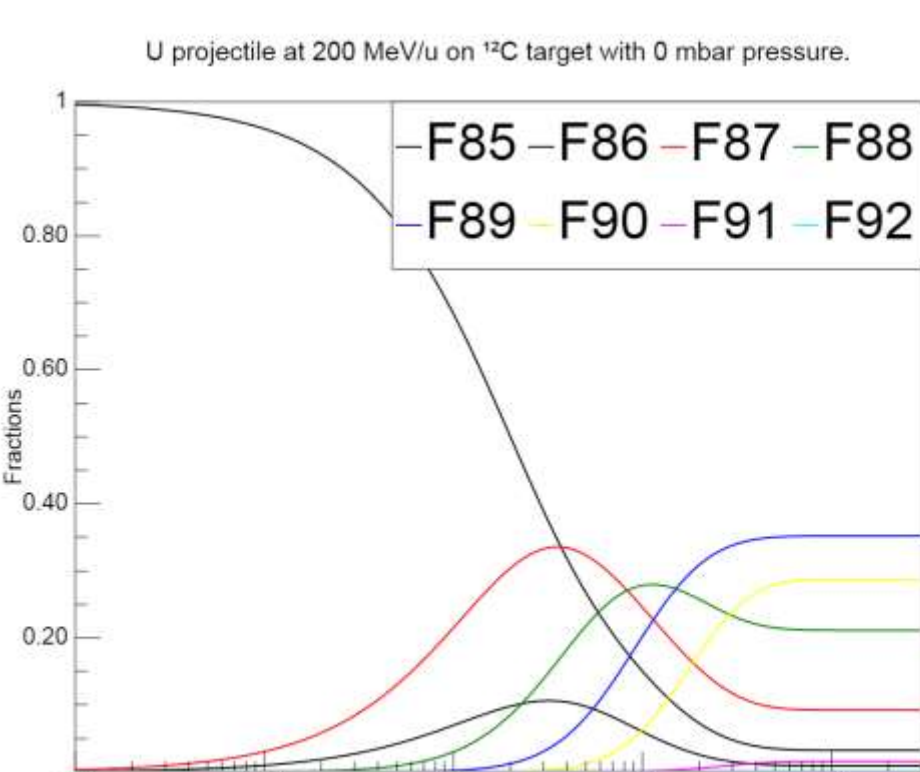
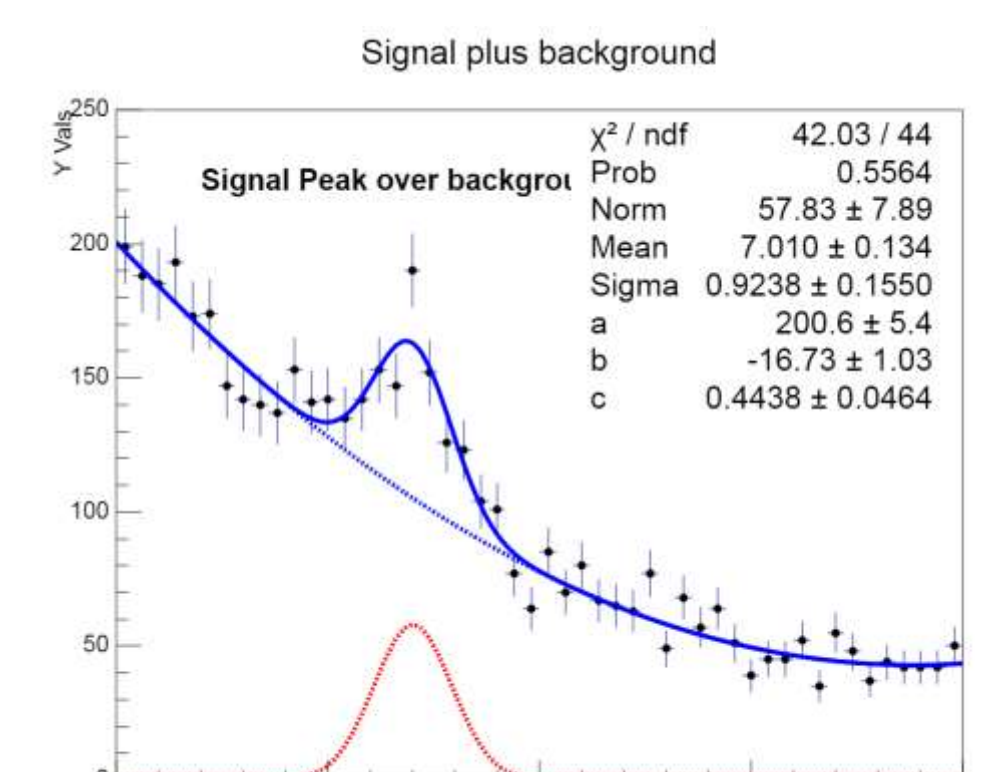
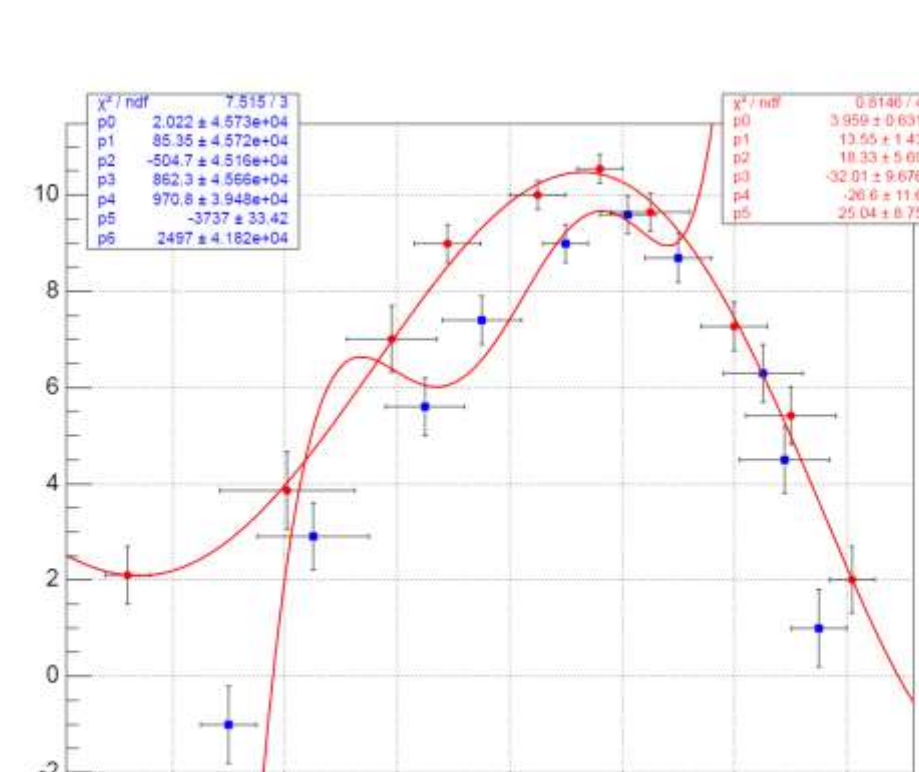
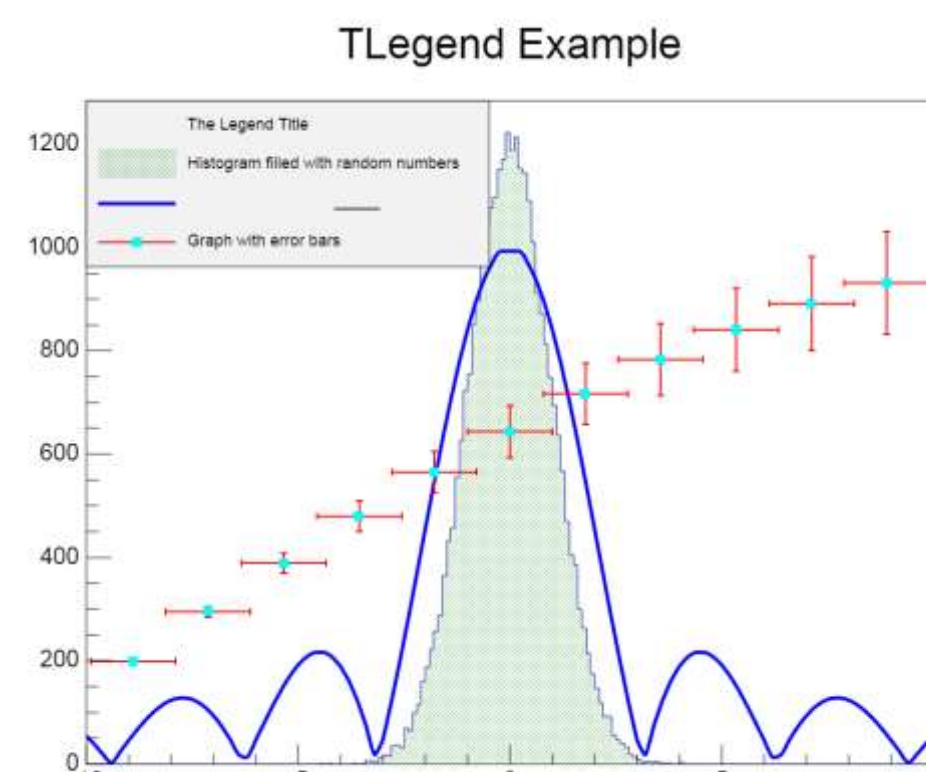
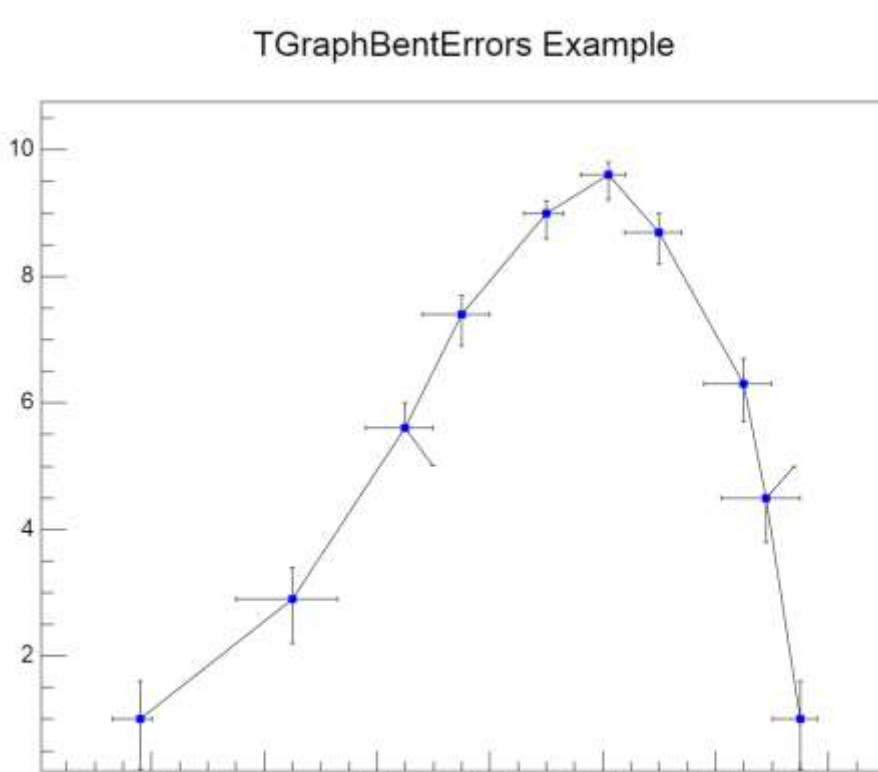
Other histogram classes



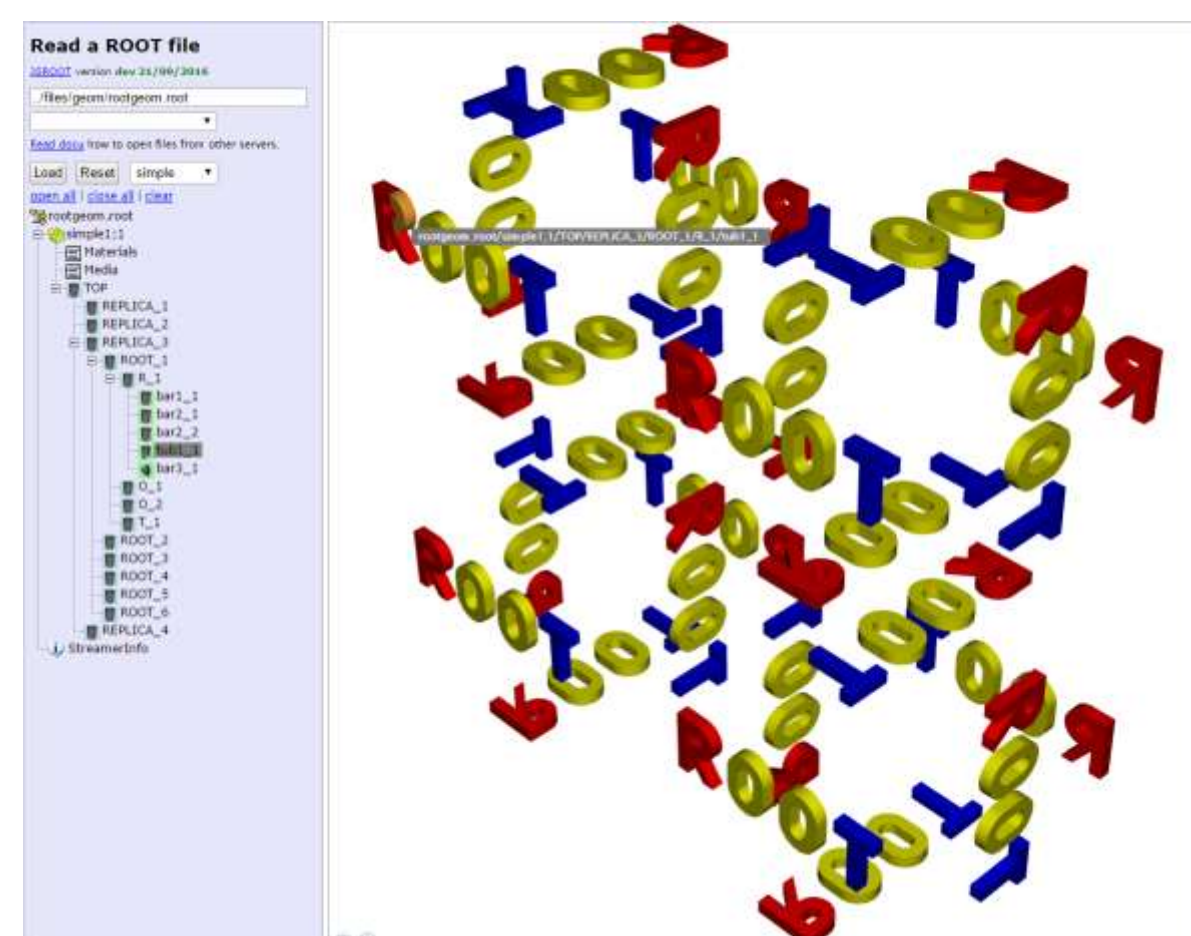
TTree::Draw



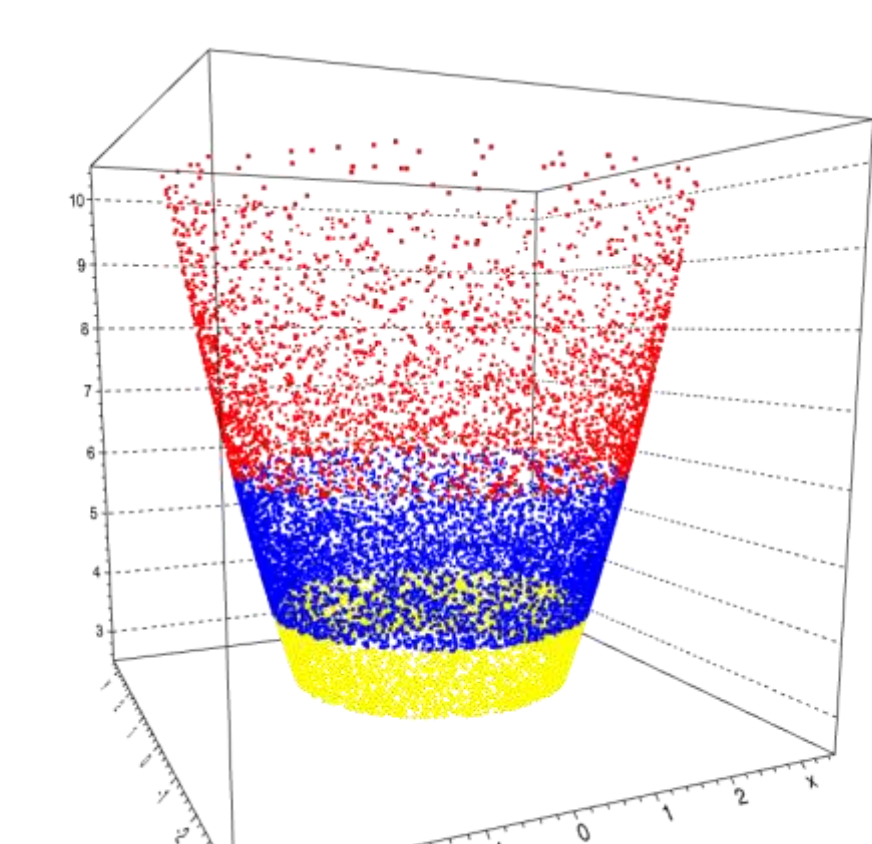
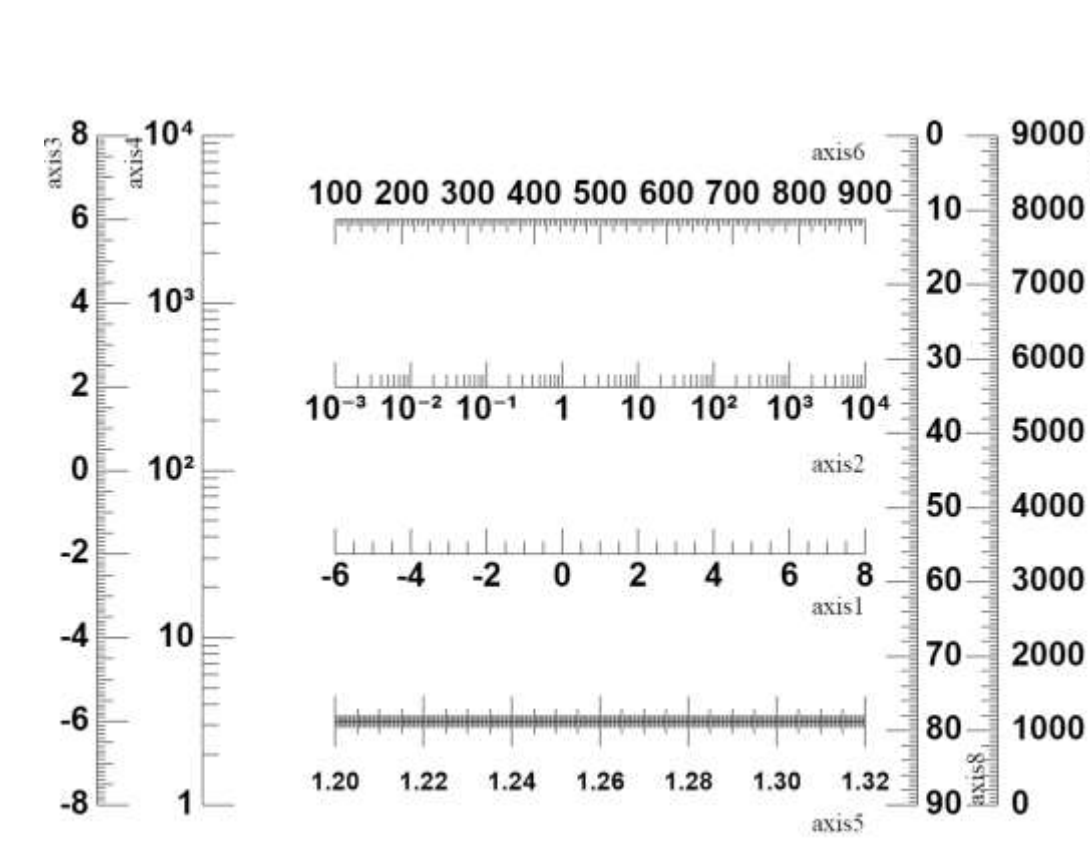
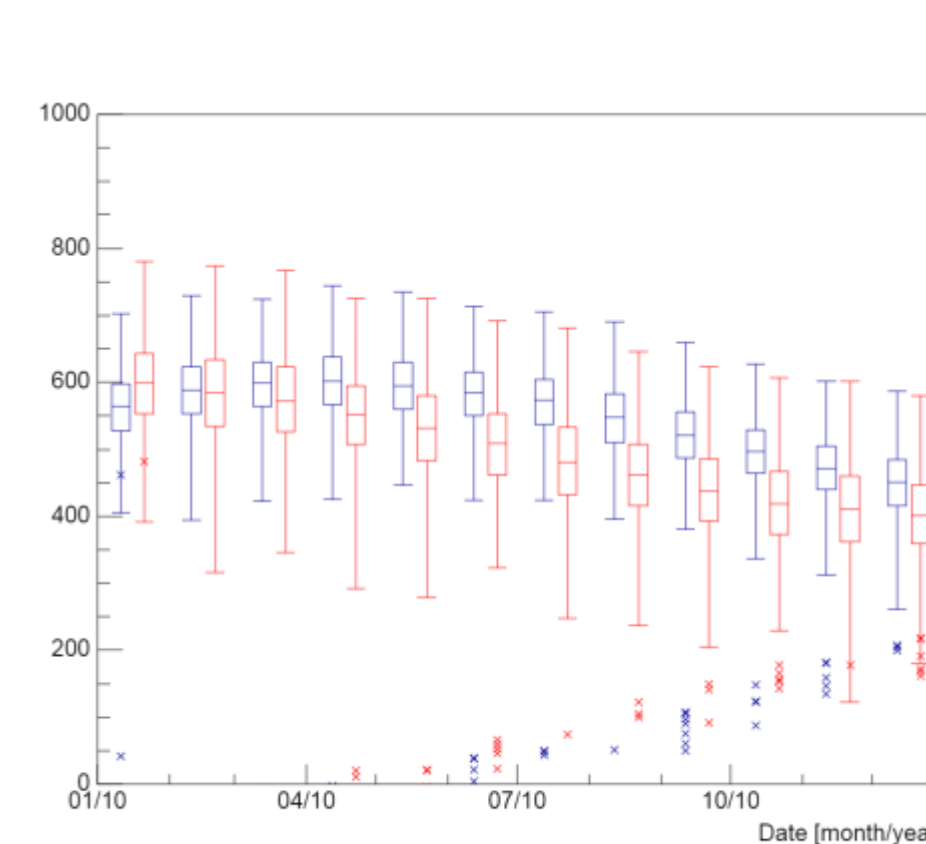
Graphs and functions



Display and browse TGeo



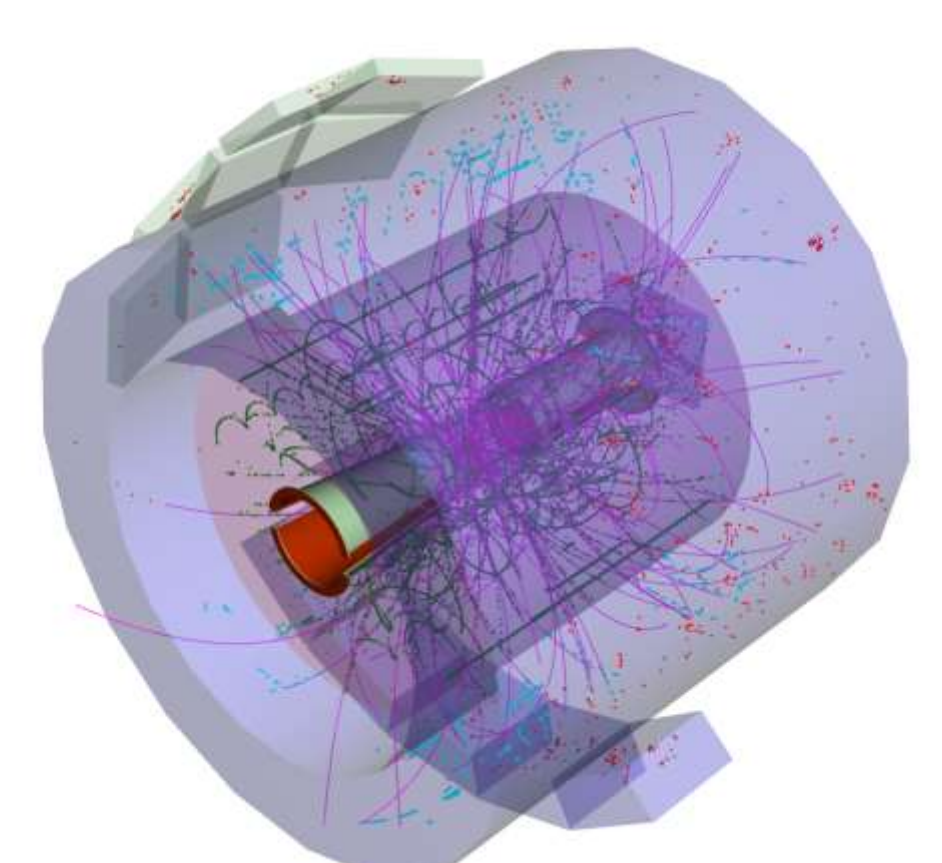
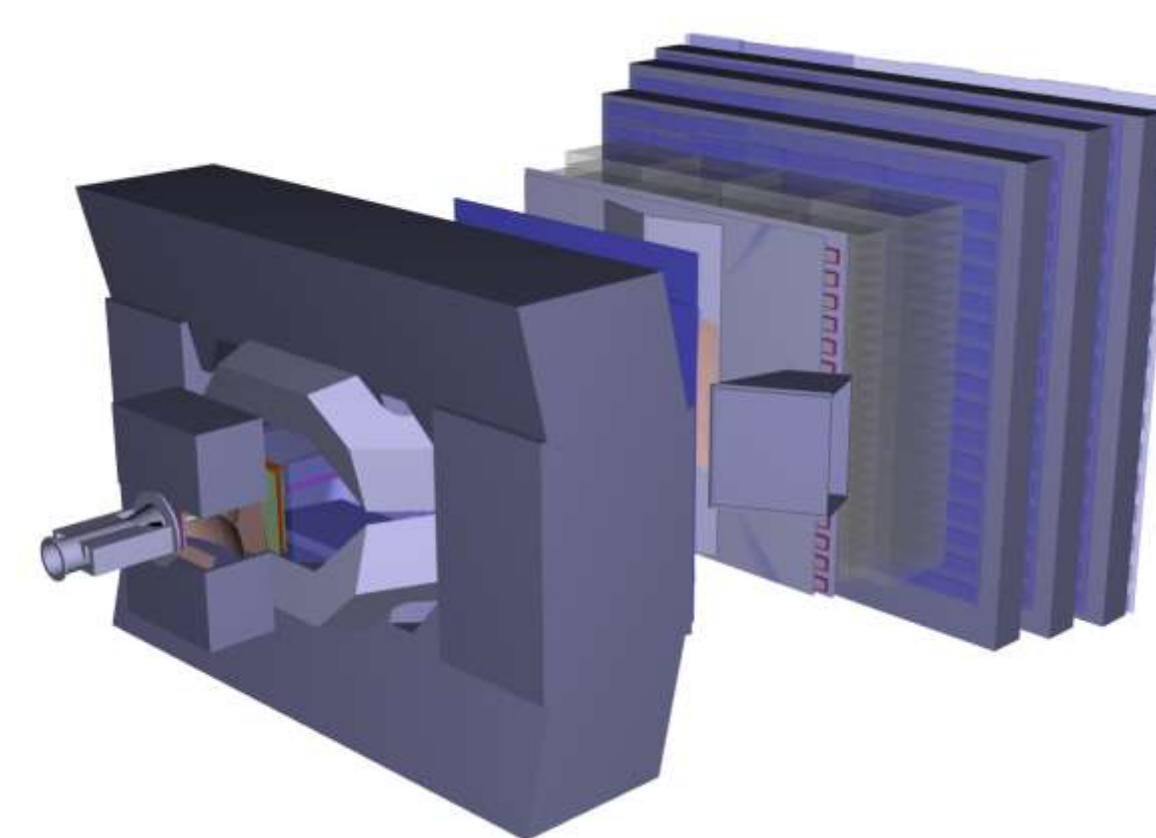
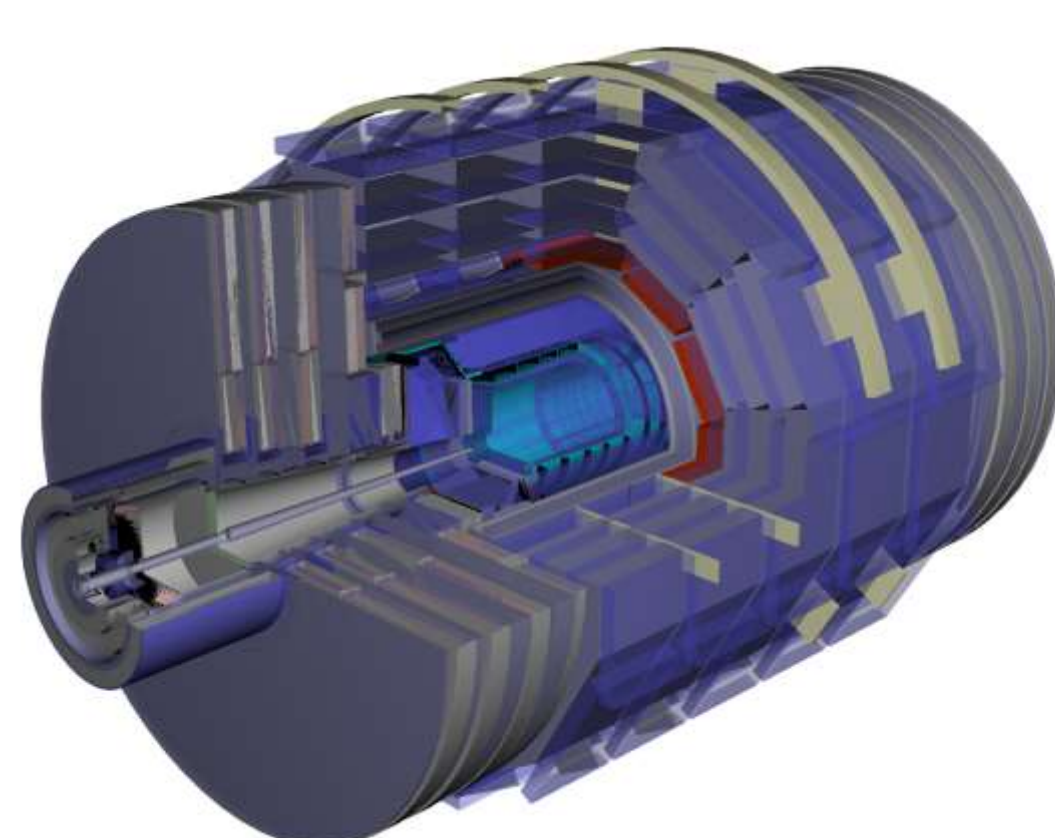
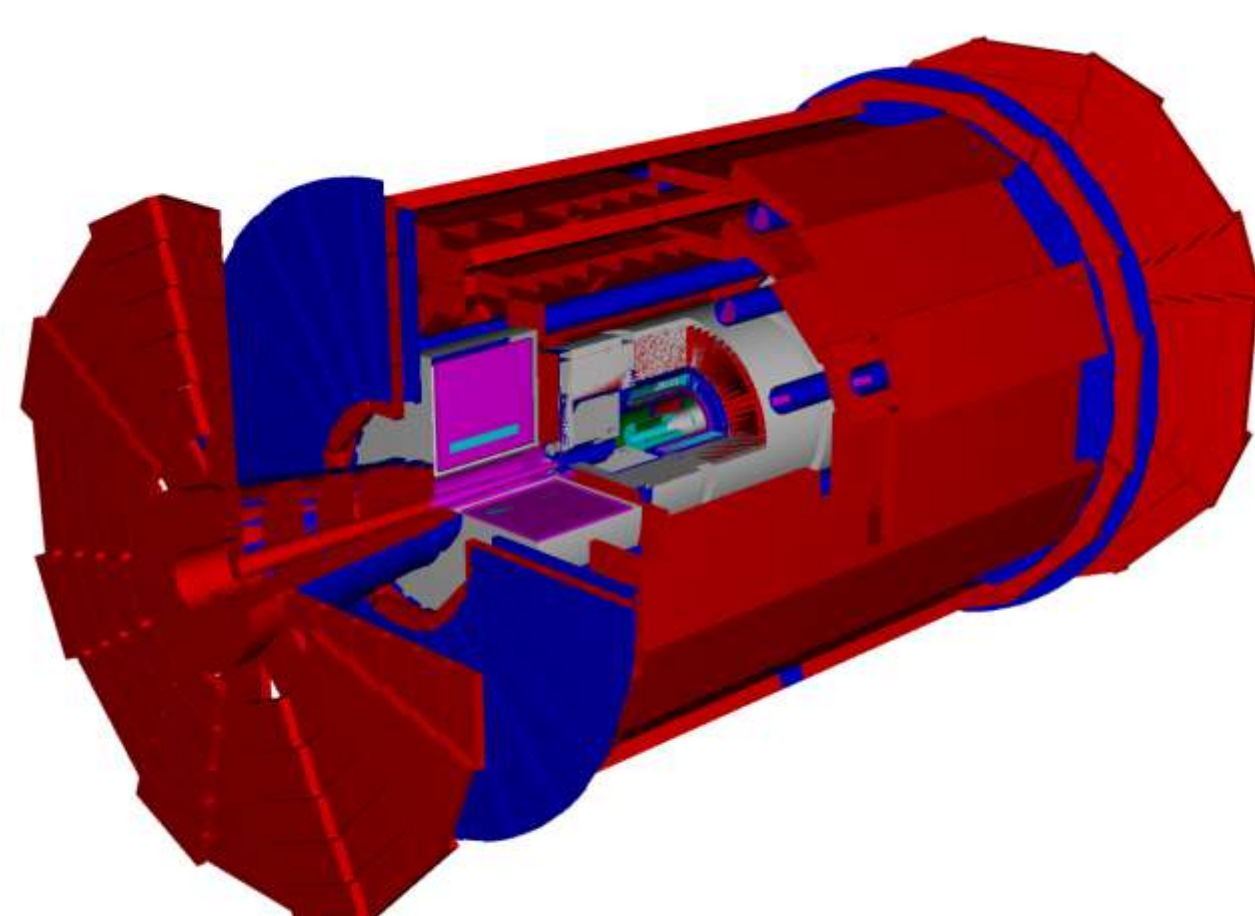
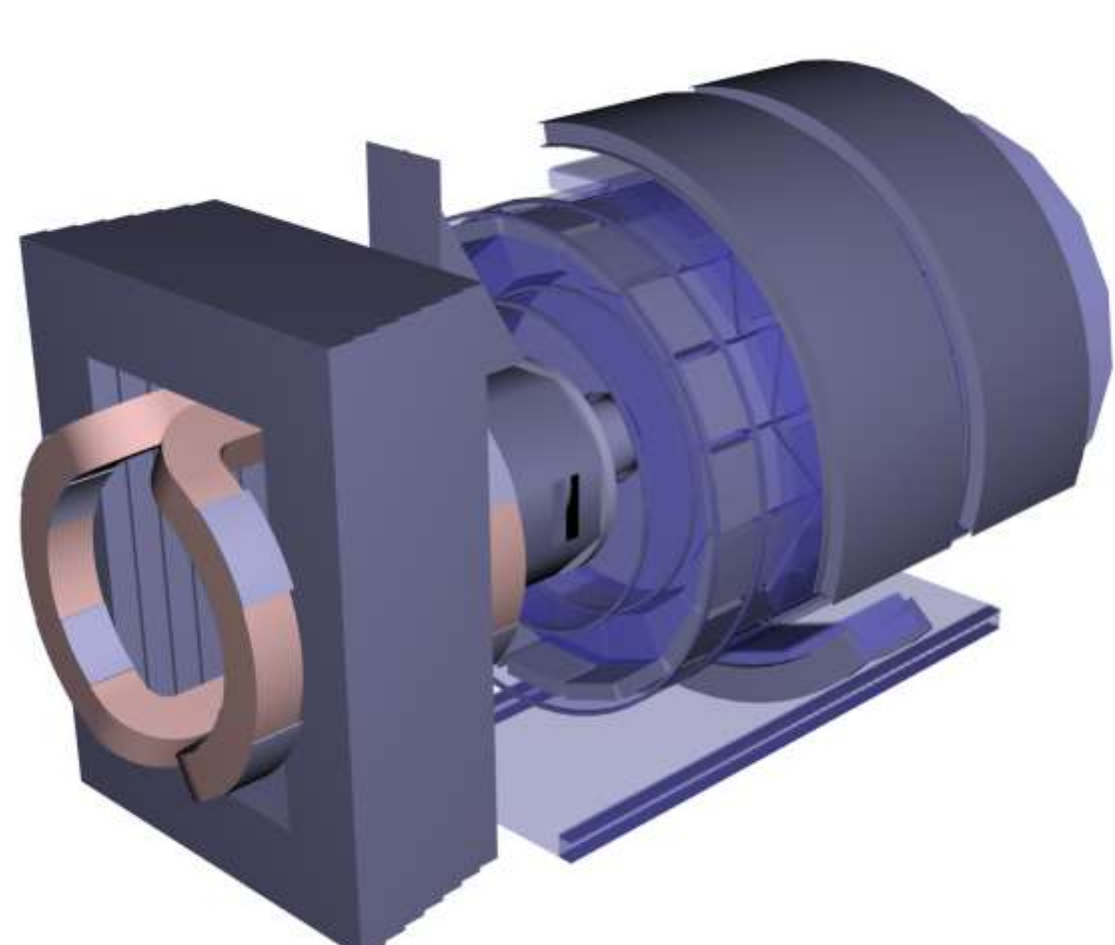
Other supported classes



Inspector



Some detectors drawings



Event display