CMS Visualisation

- IGUANA:
  - architecture and features
  - web GUI
  - Qt/ROOT integration
- Desiderata for QT/Root

Giulio Eulisse on behalf of the IGUANA team
Northeastern University, Boston, U.S.A.

IGUANA

CMS Software
- Offline
- Online
- Data Quality Monitoring
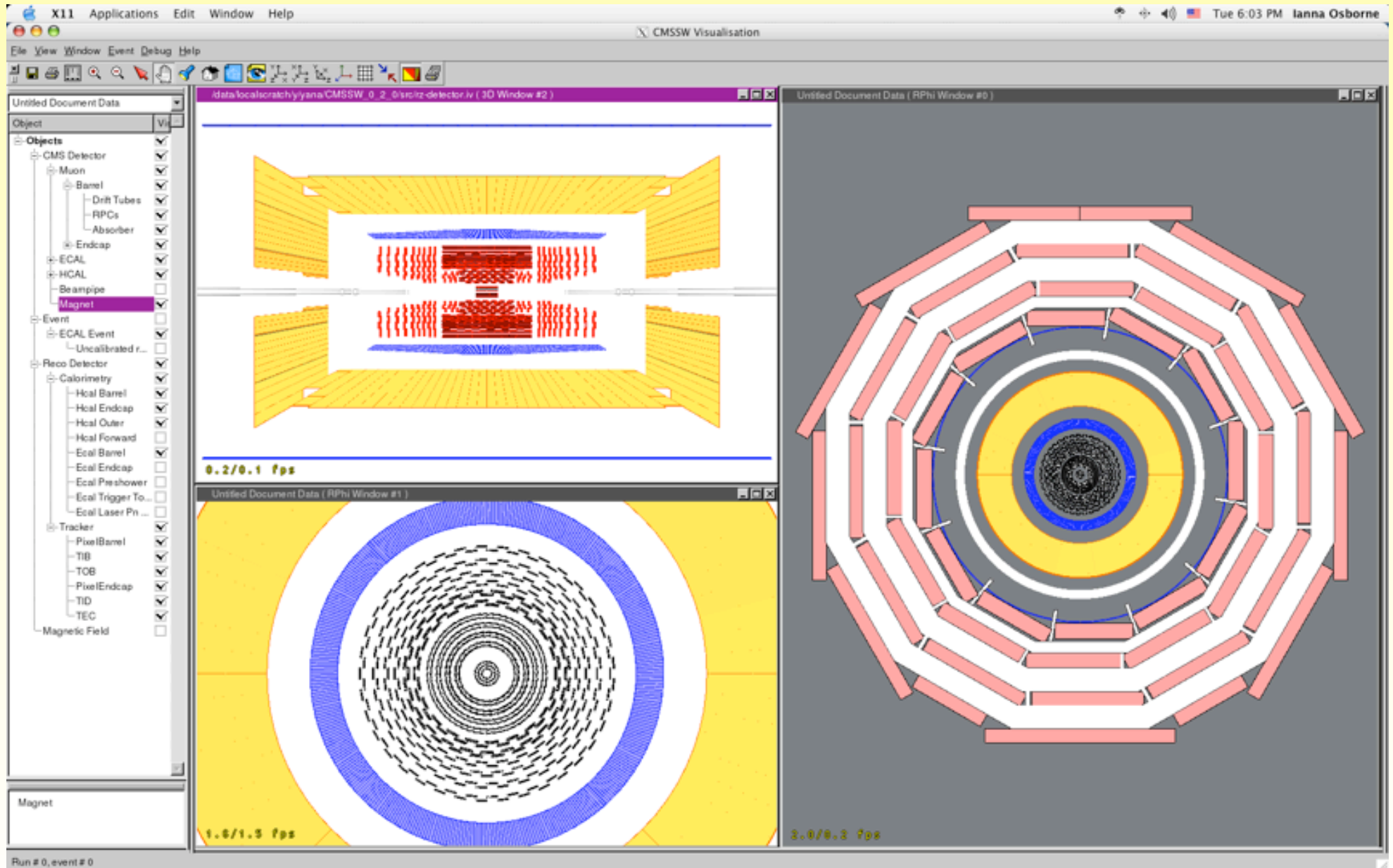
Open Source components
- Python
- QT
- HippoDraw
- COIN

HEP Software
- Geant4
- ROOT
- SEAL

IGUANA Features

IGUANA Features
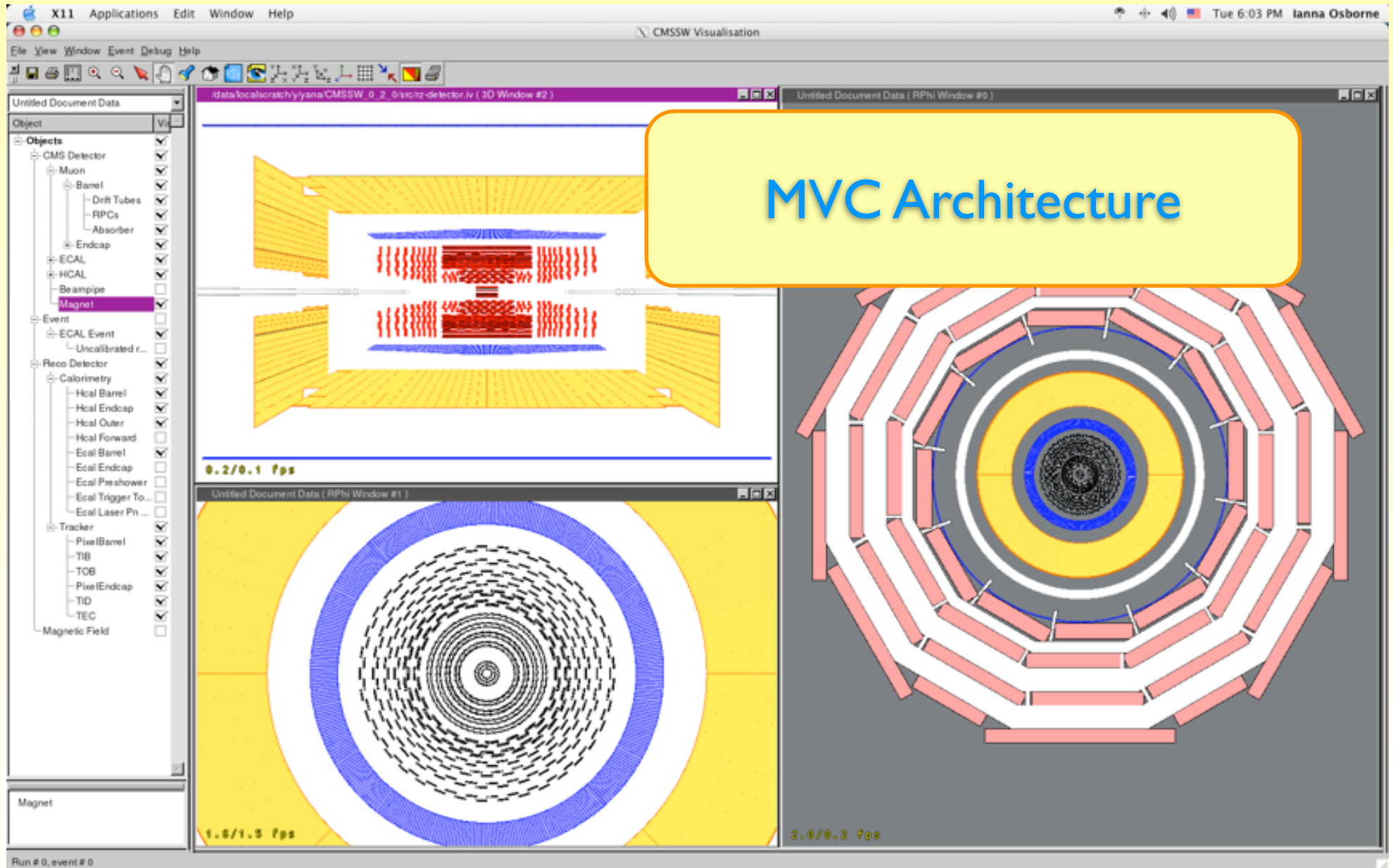
MVC Architecture

IGUANA Features

MVC Architecture

IGUANA provided generic components
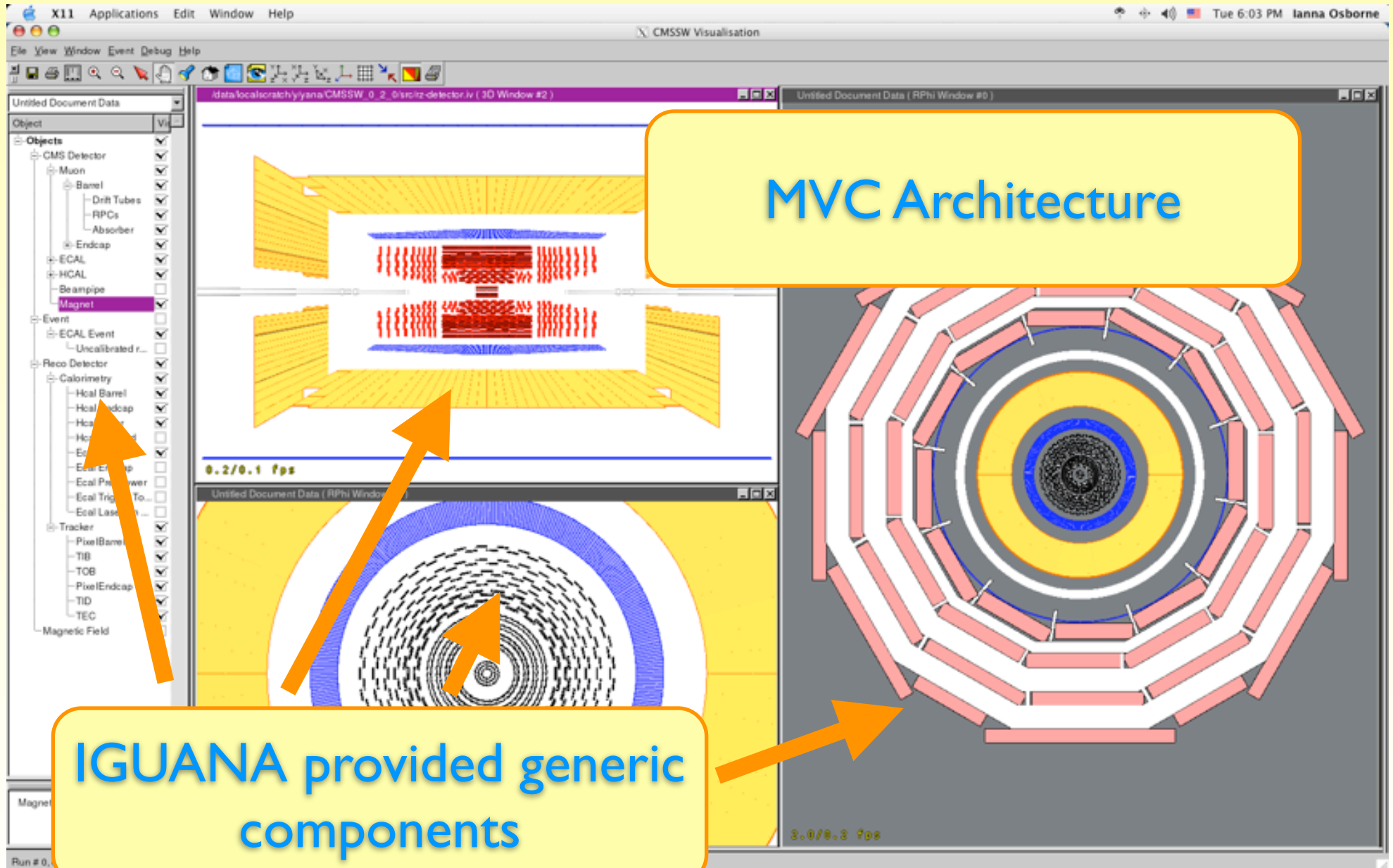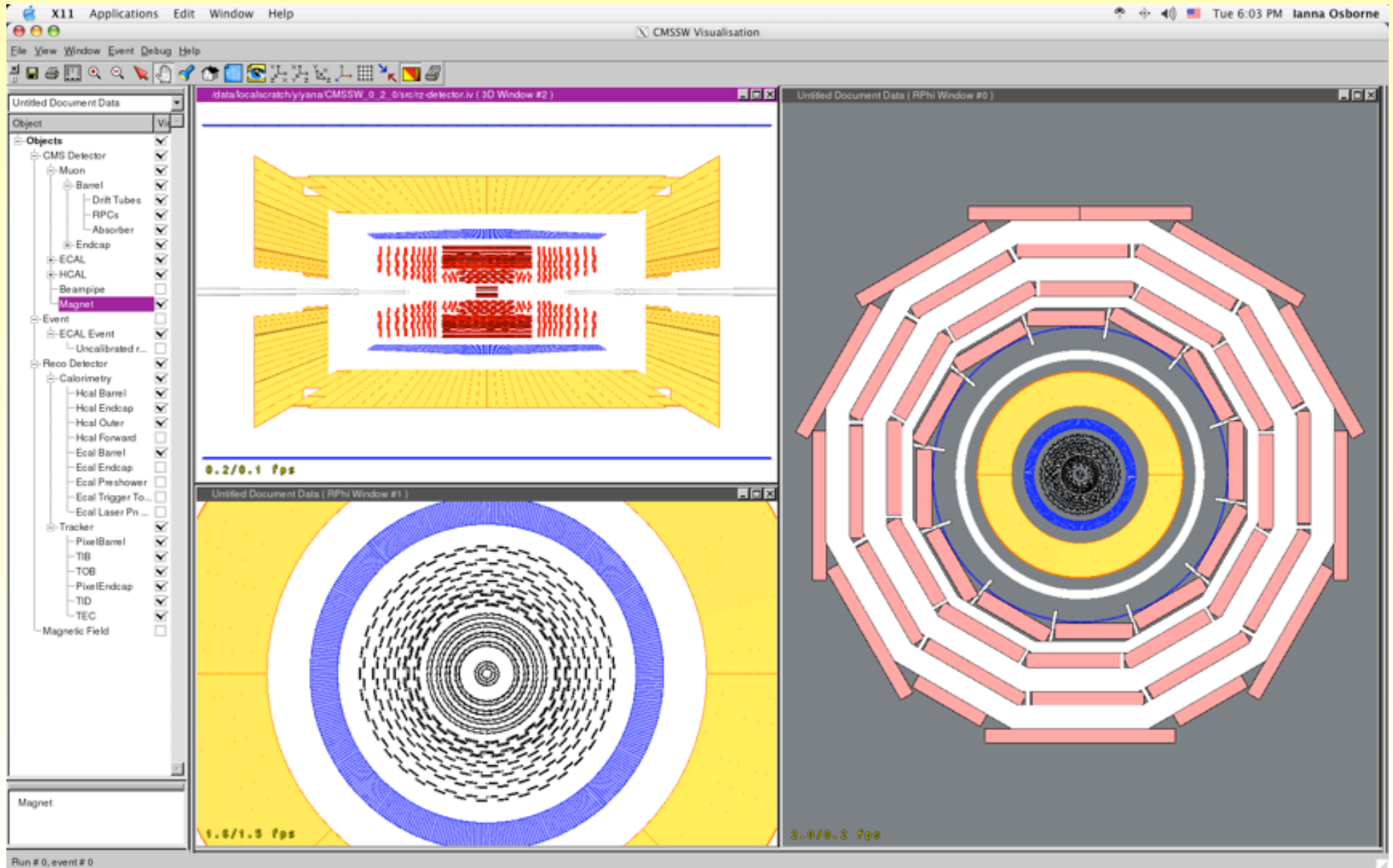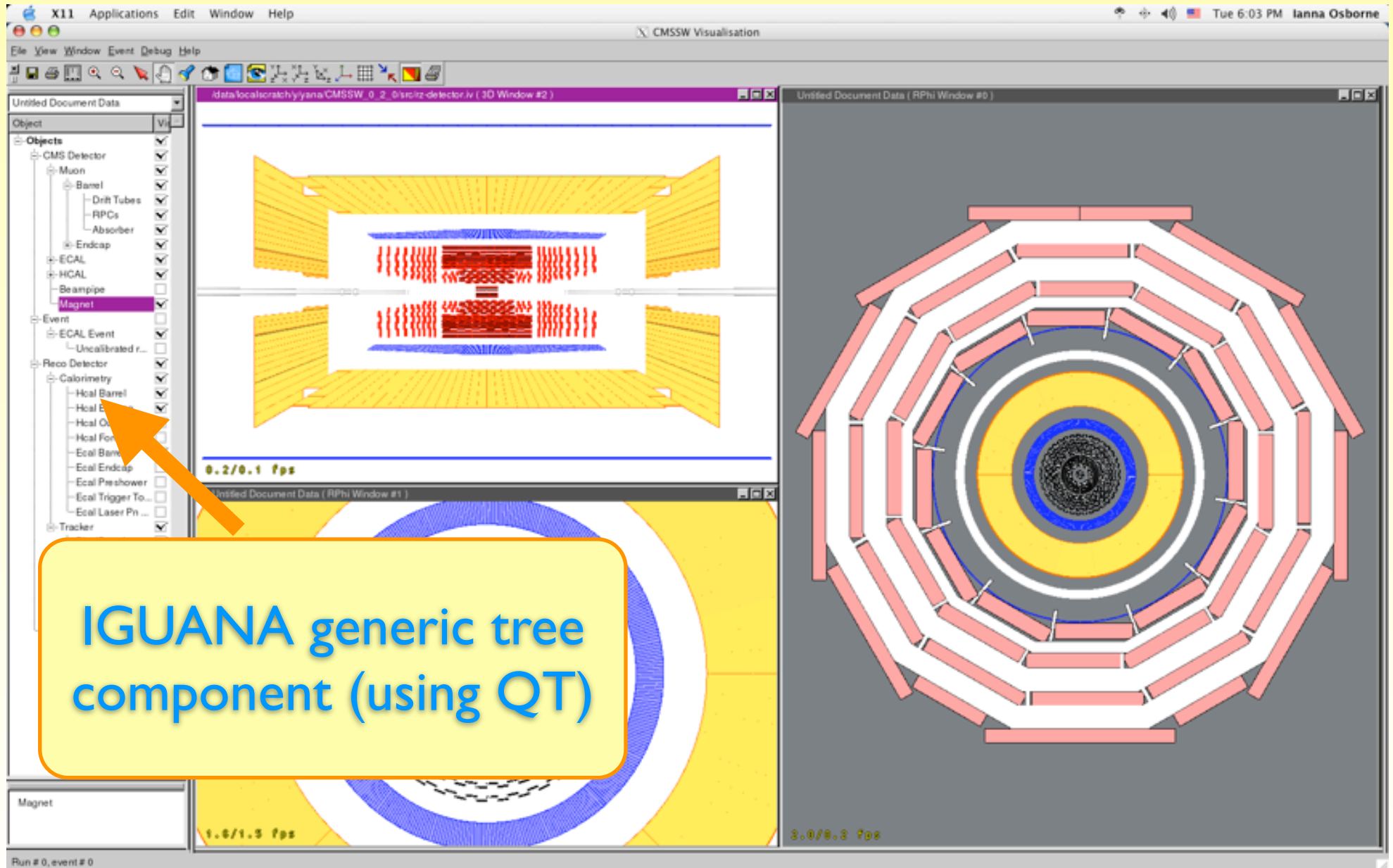
IGUANA Features

IGUANA Features

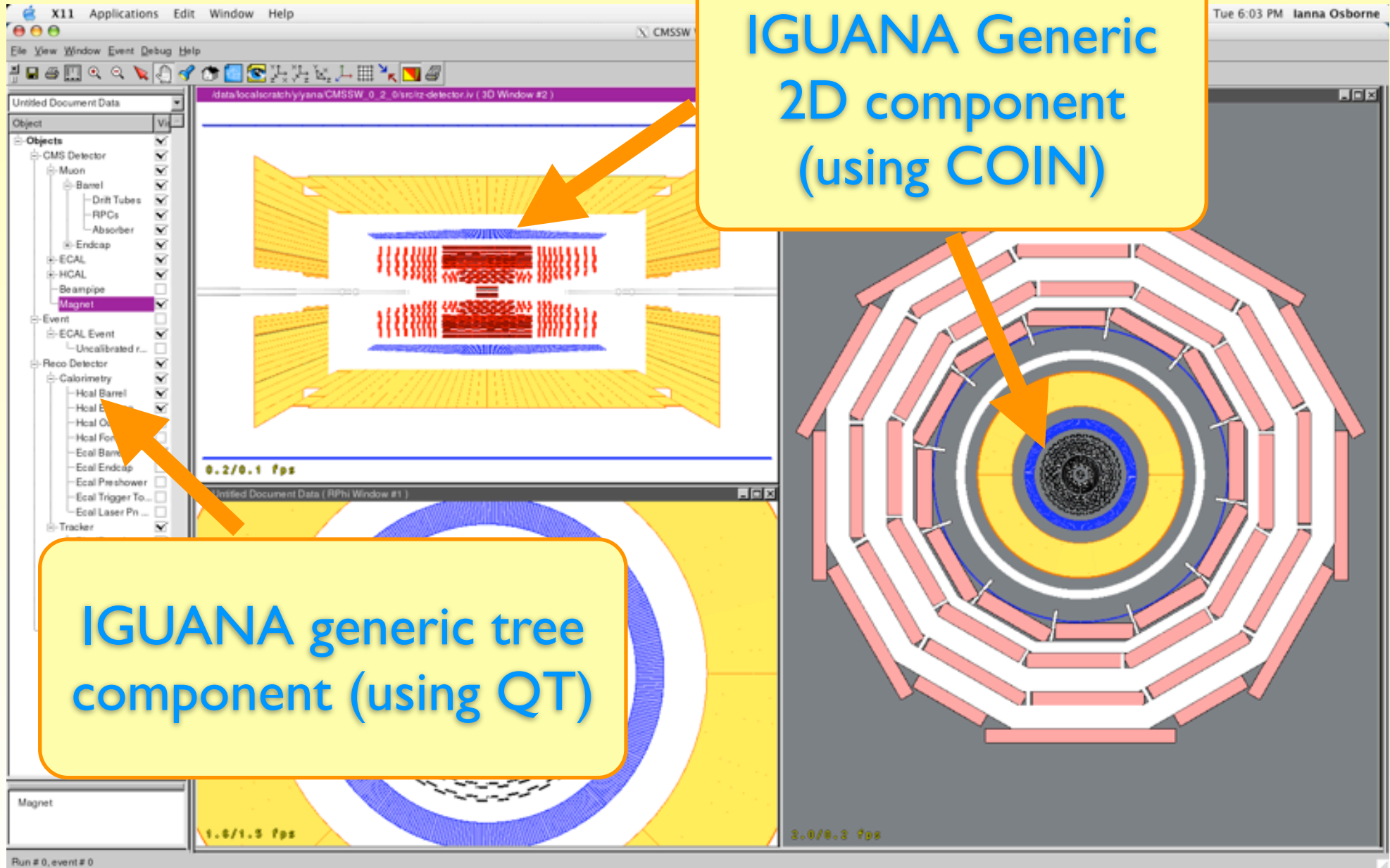IGUANA generic tree component (using QT)

IGUANA Features

IGUANA Generic 2D component (using COIN)

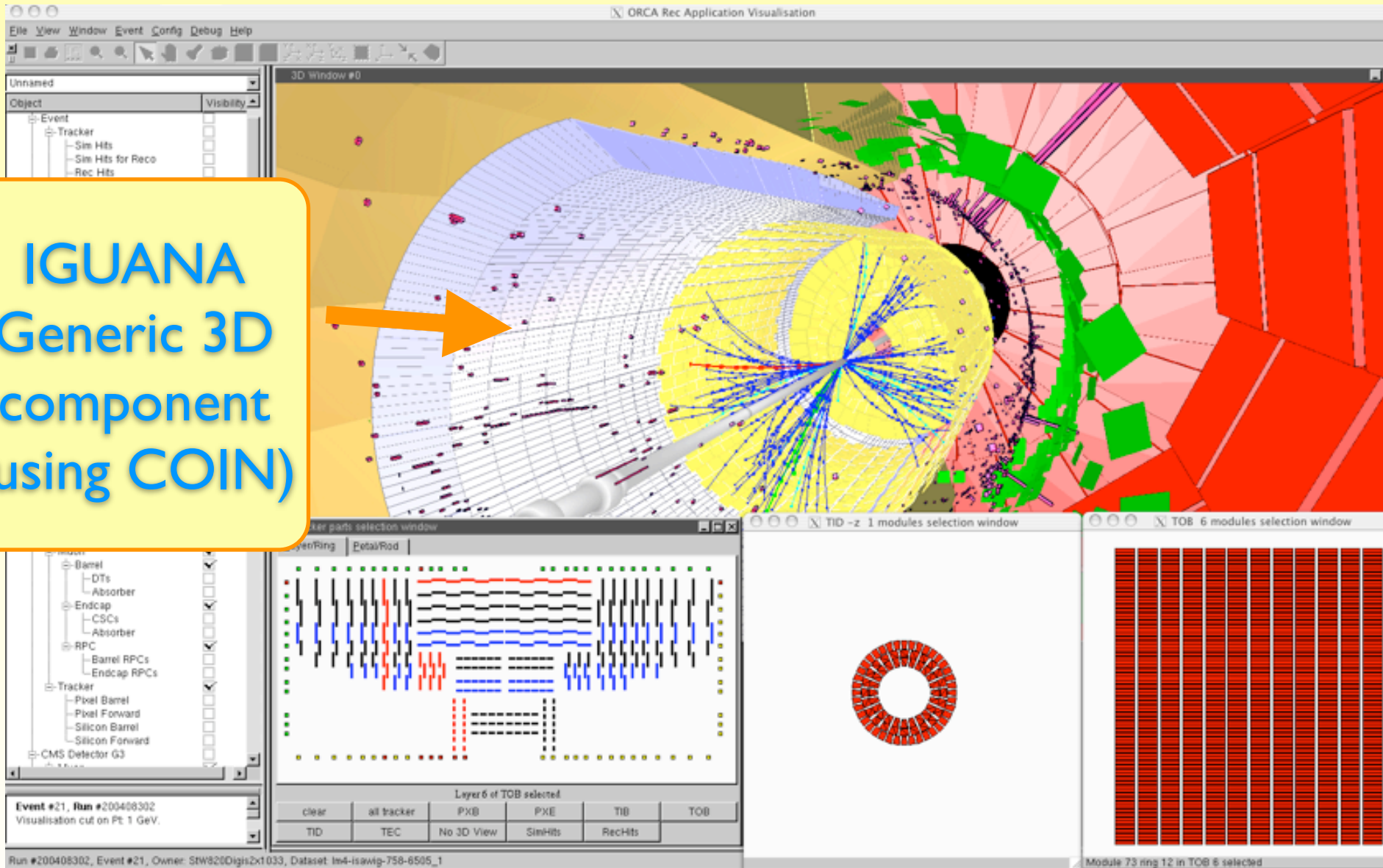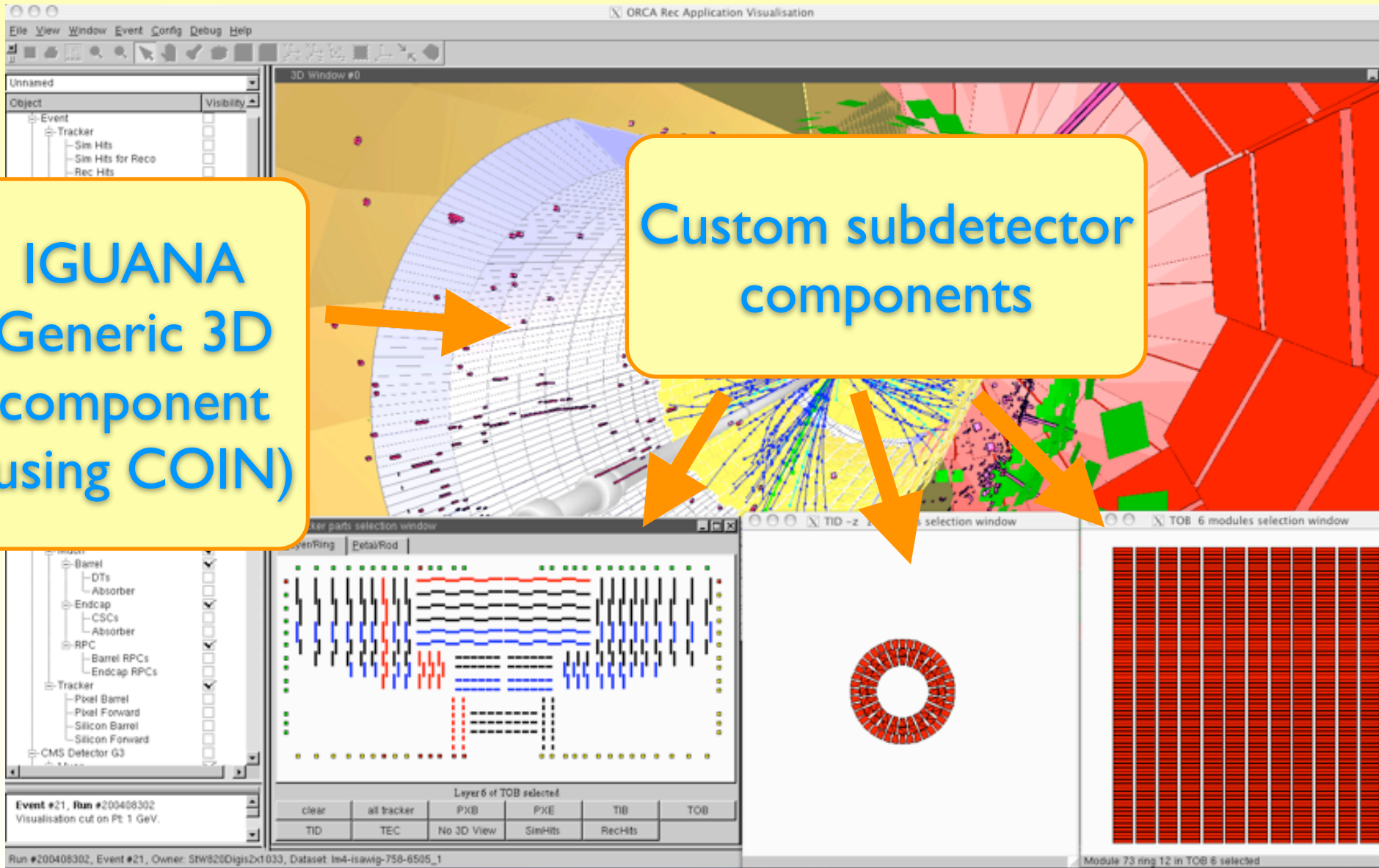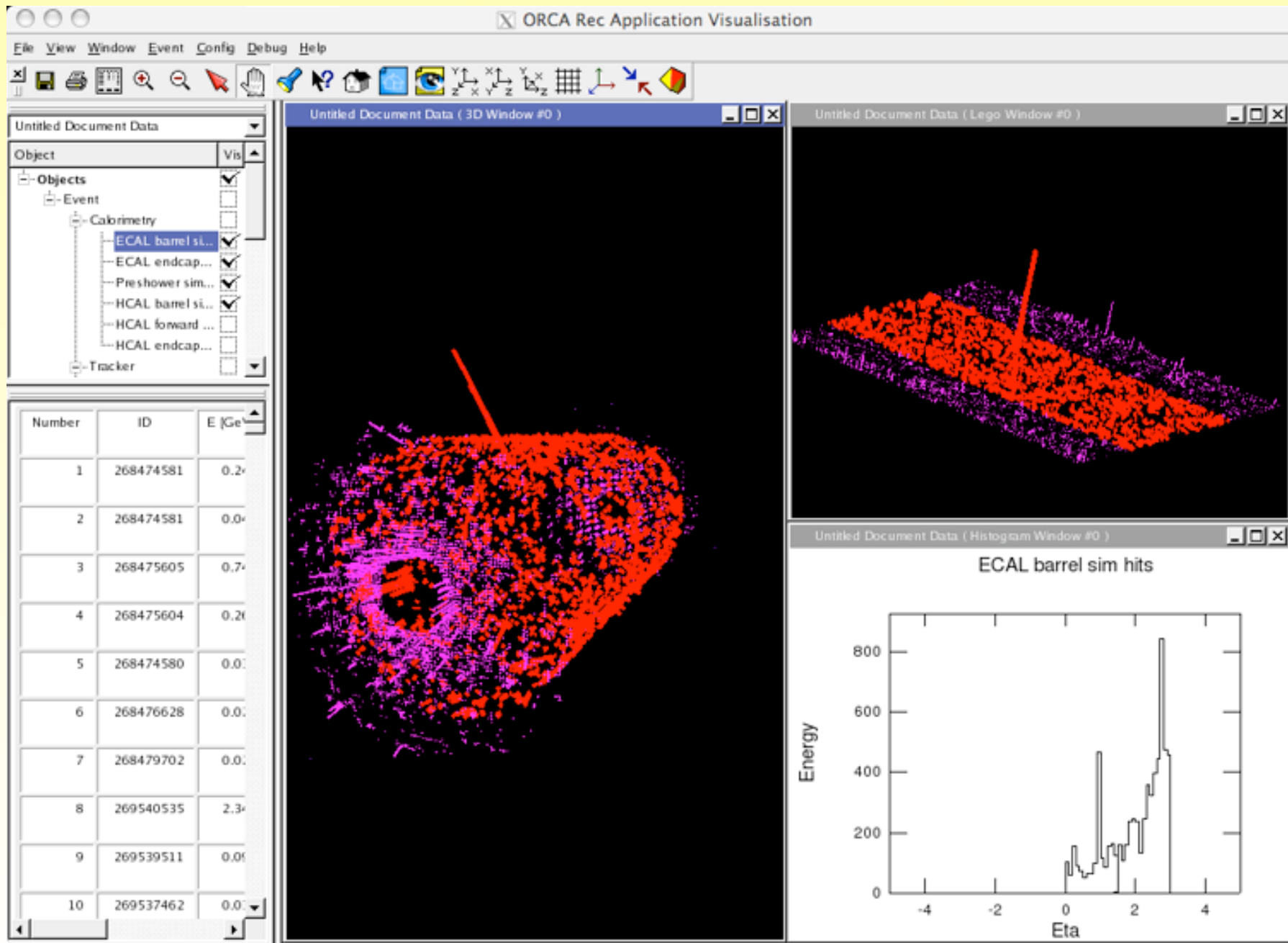IGUANA generic tree component (using QT)

IGUANA Features

IGUANA Features

IGUANA
Generic 3D
component
(using COIN)

IGUANA Features

IGUANA Generic 3D component (using COIN)

Custom subdetector components

IGUANA Features

IGUANA Features

Generic IGUANA Lego component
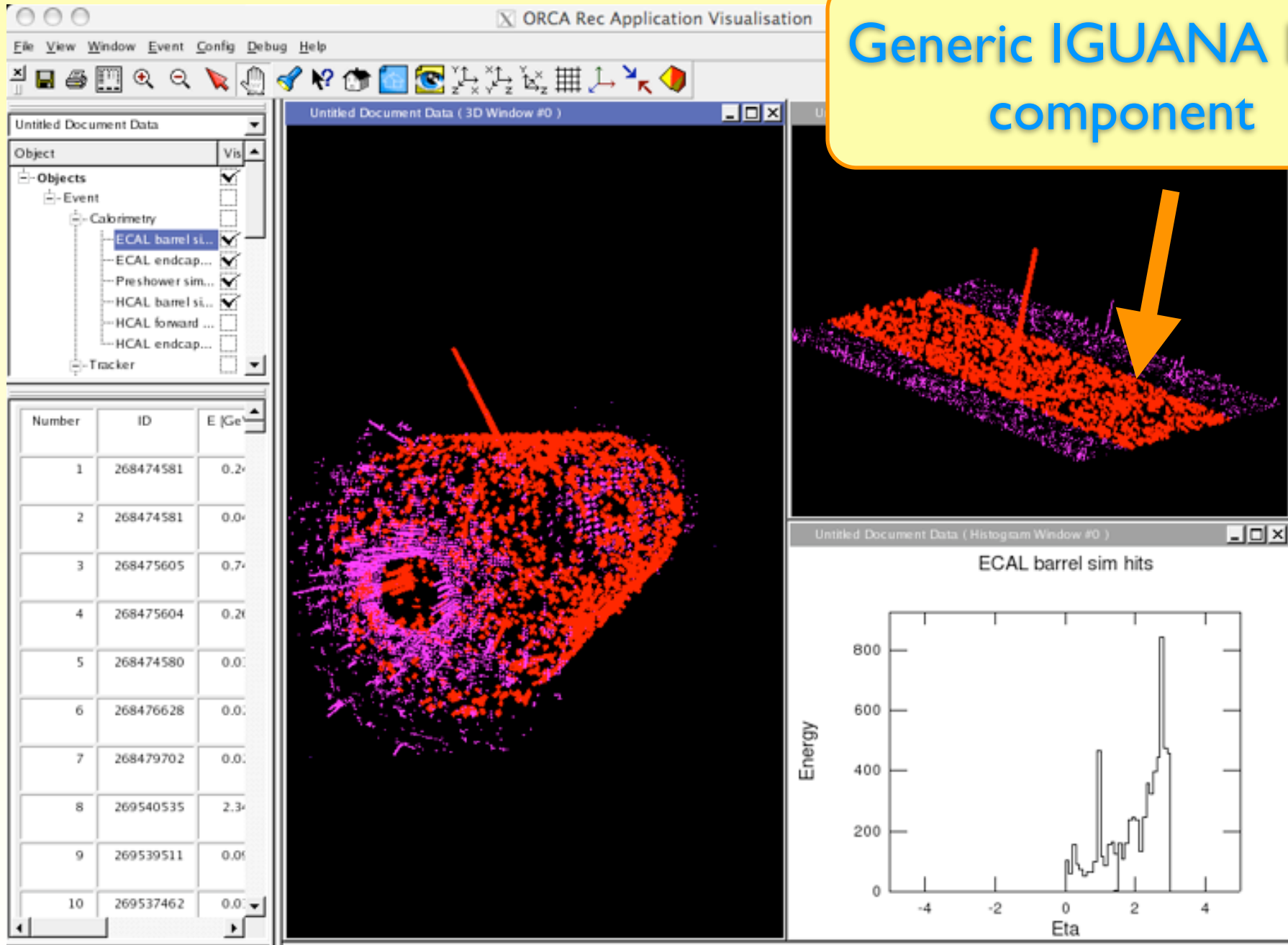
IGUANA Features
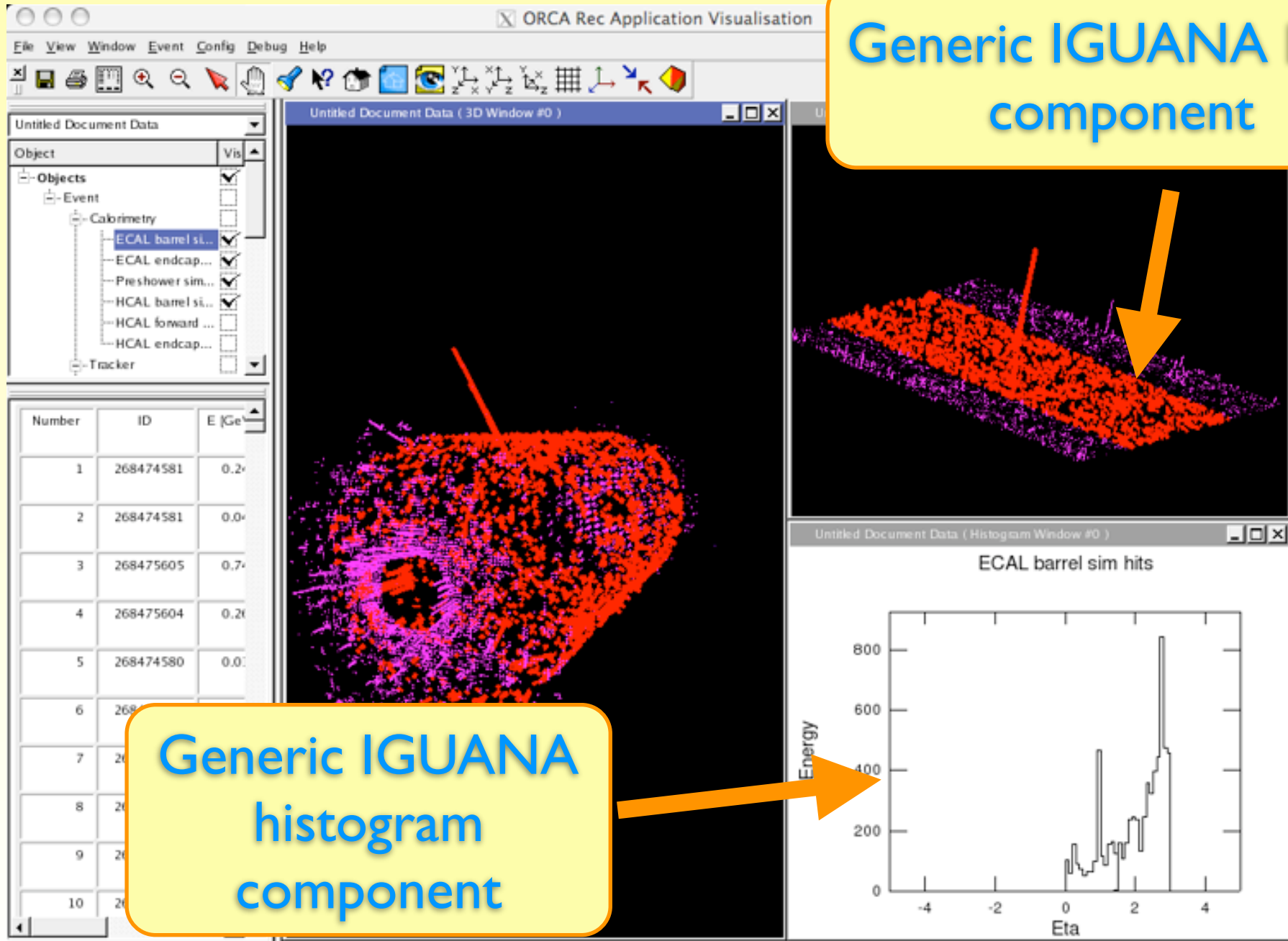
IGUANA Features
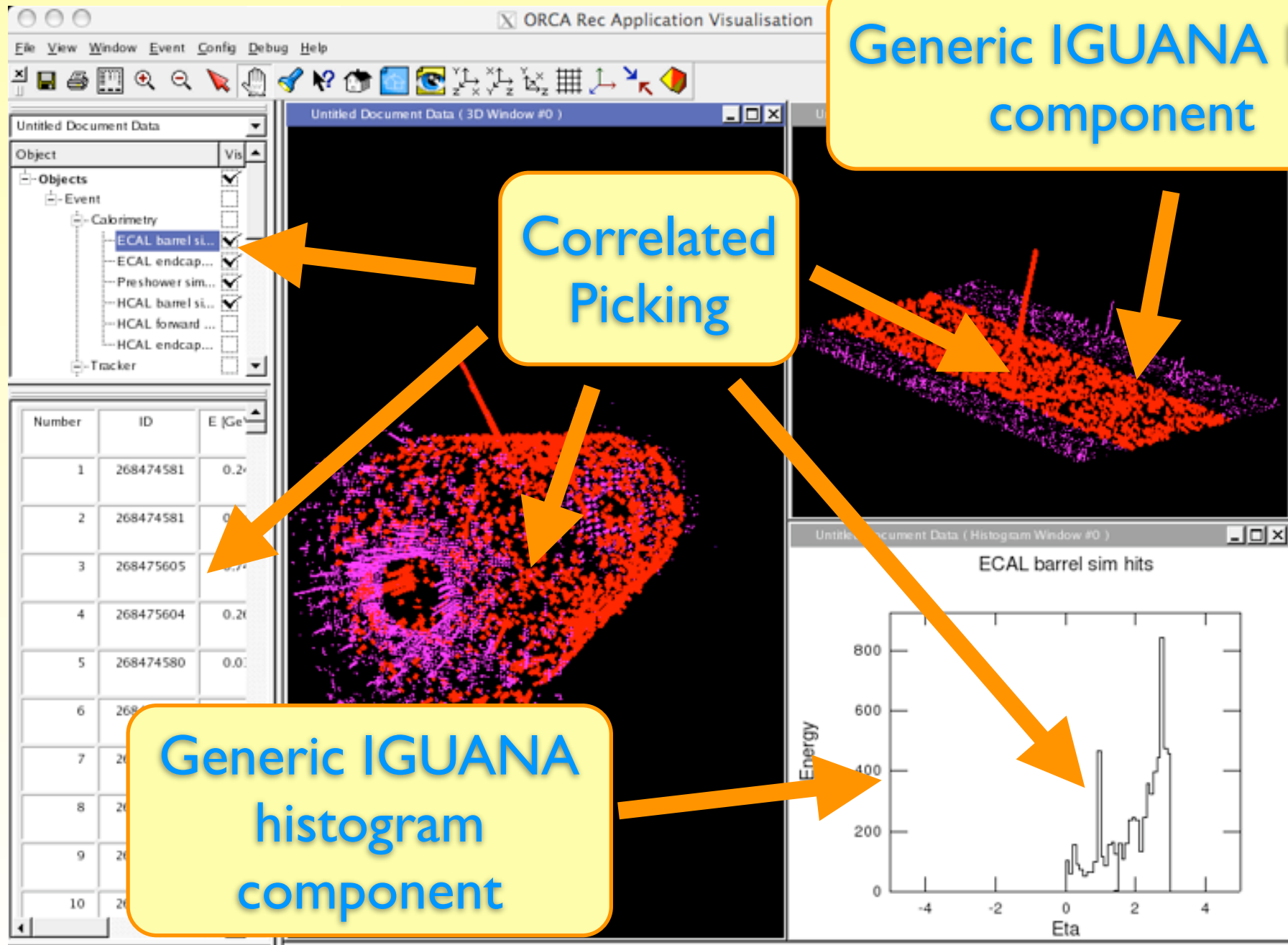
Multiple printing formats
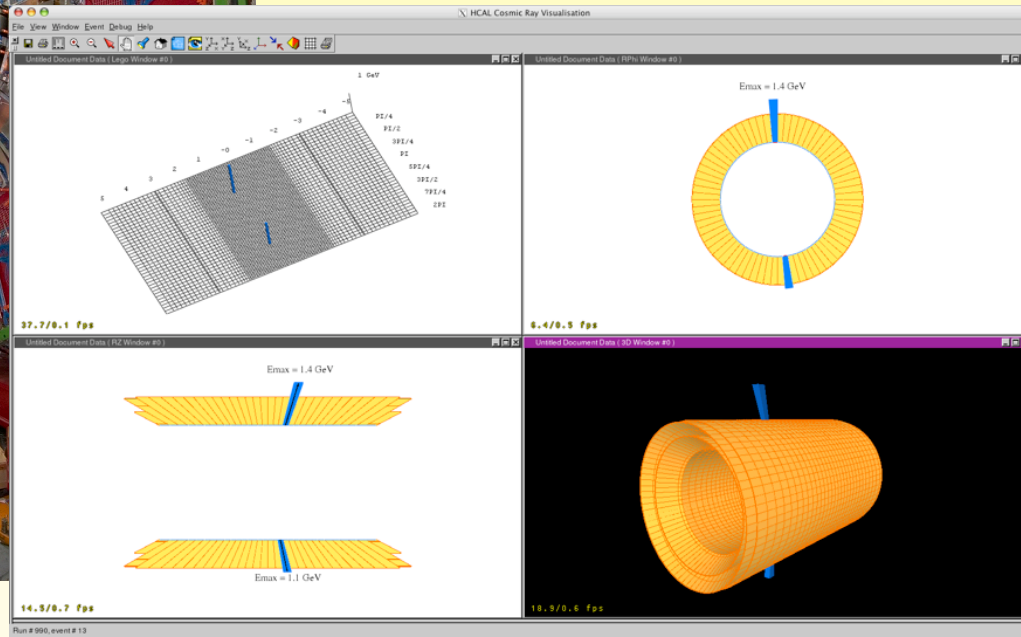
- Publishing quality PDF/EPS/Vector PS
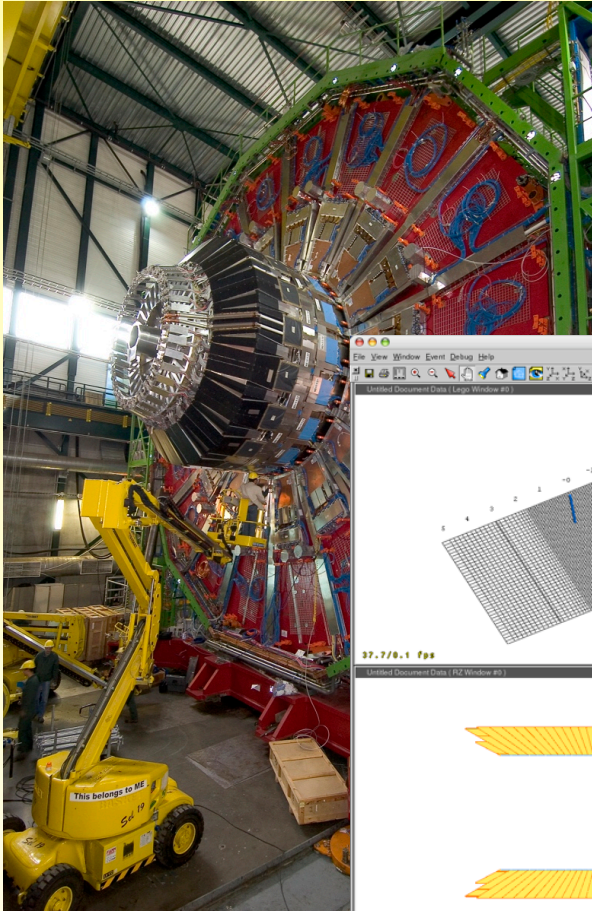
- JPG/PNG/GIF/RGB

- RGB Movies
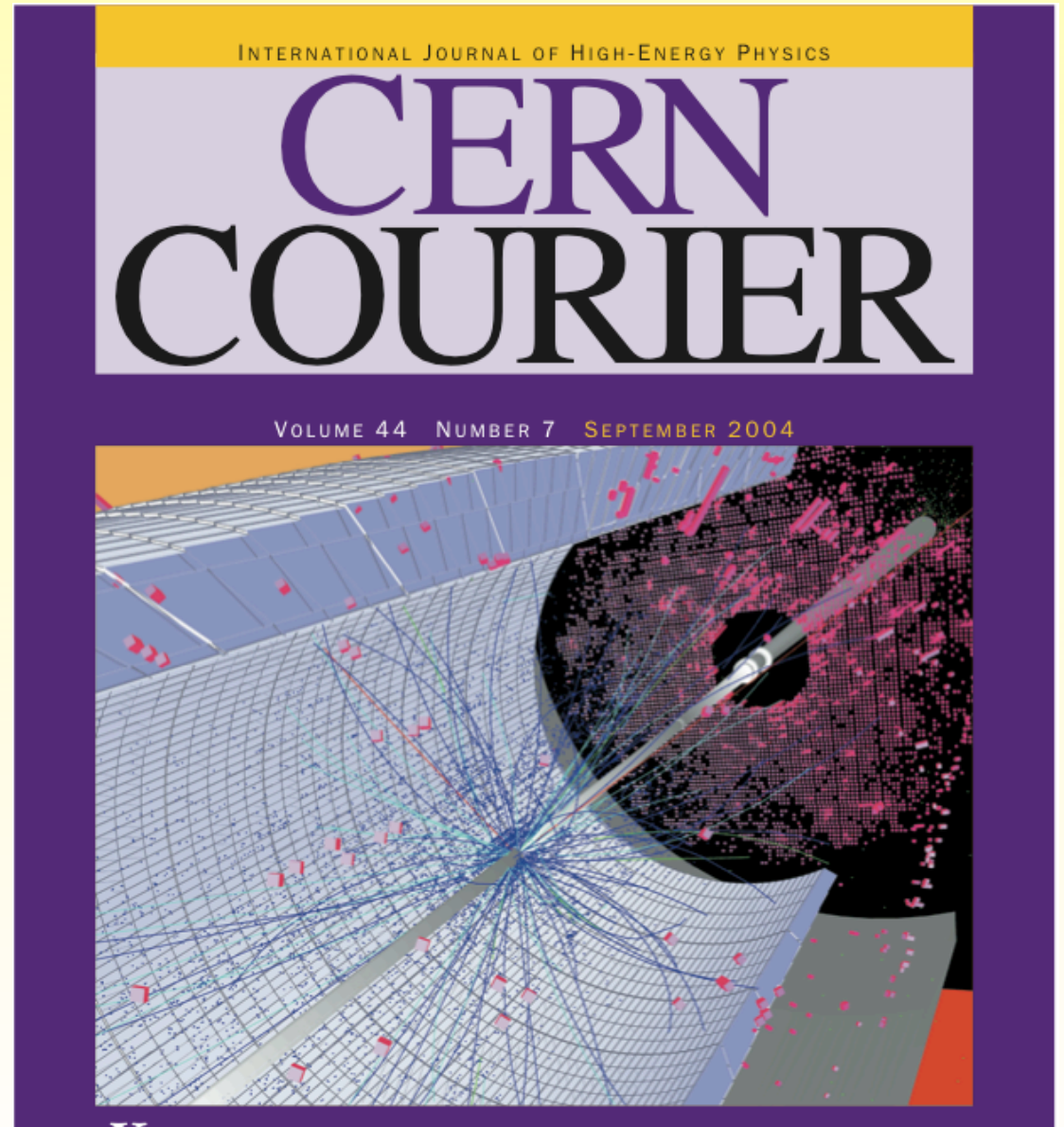
CMS

CMS

CMS

CMS

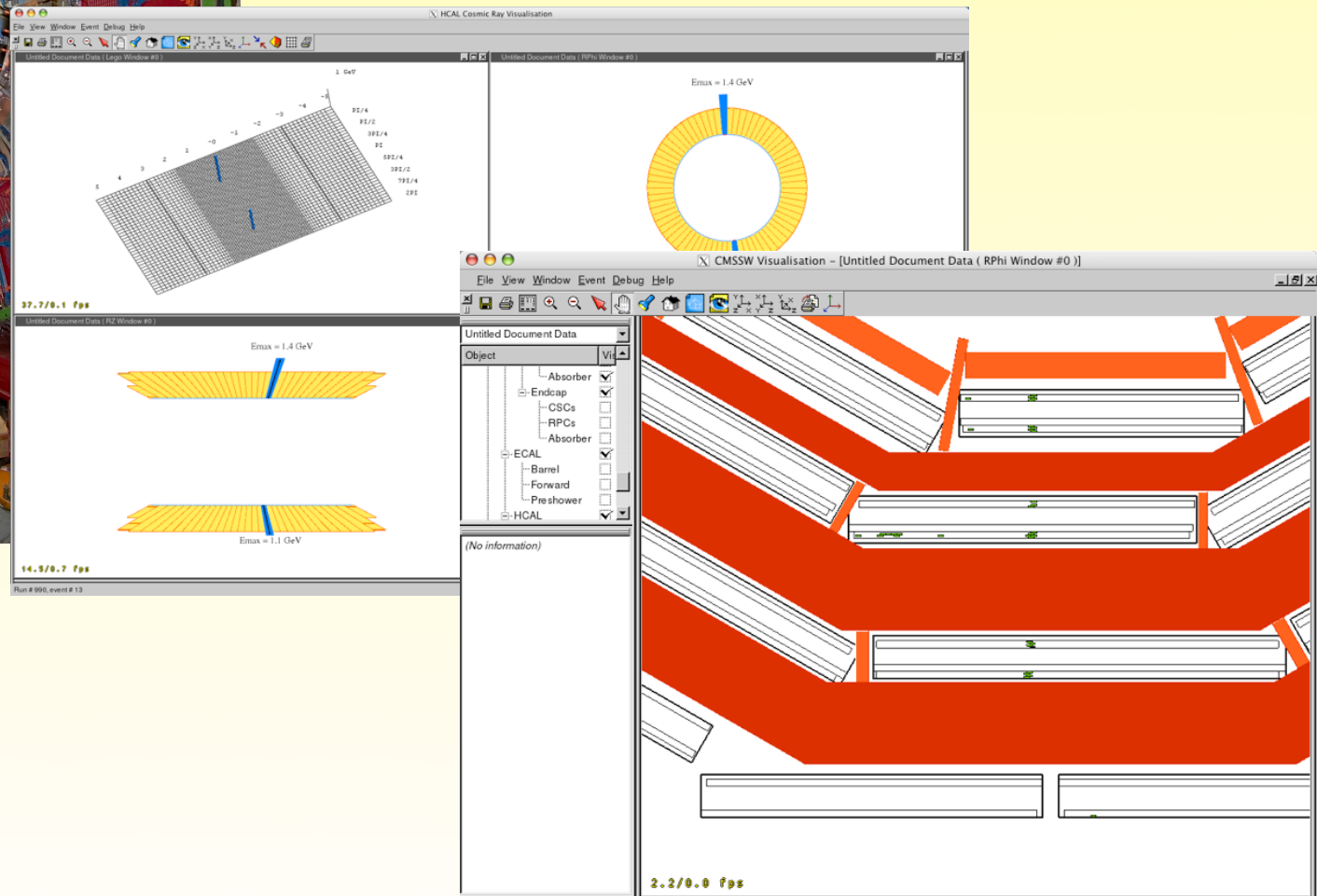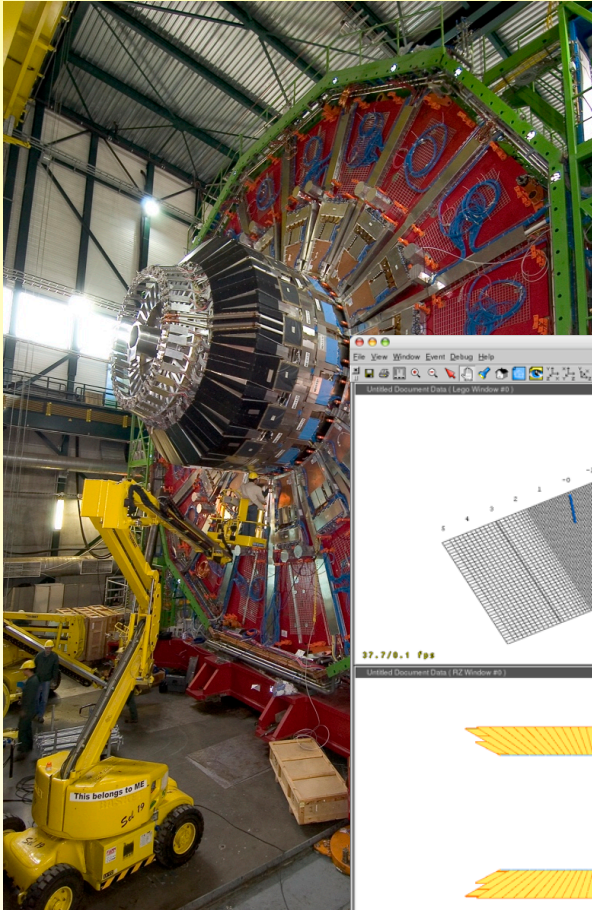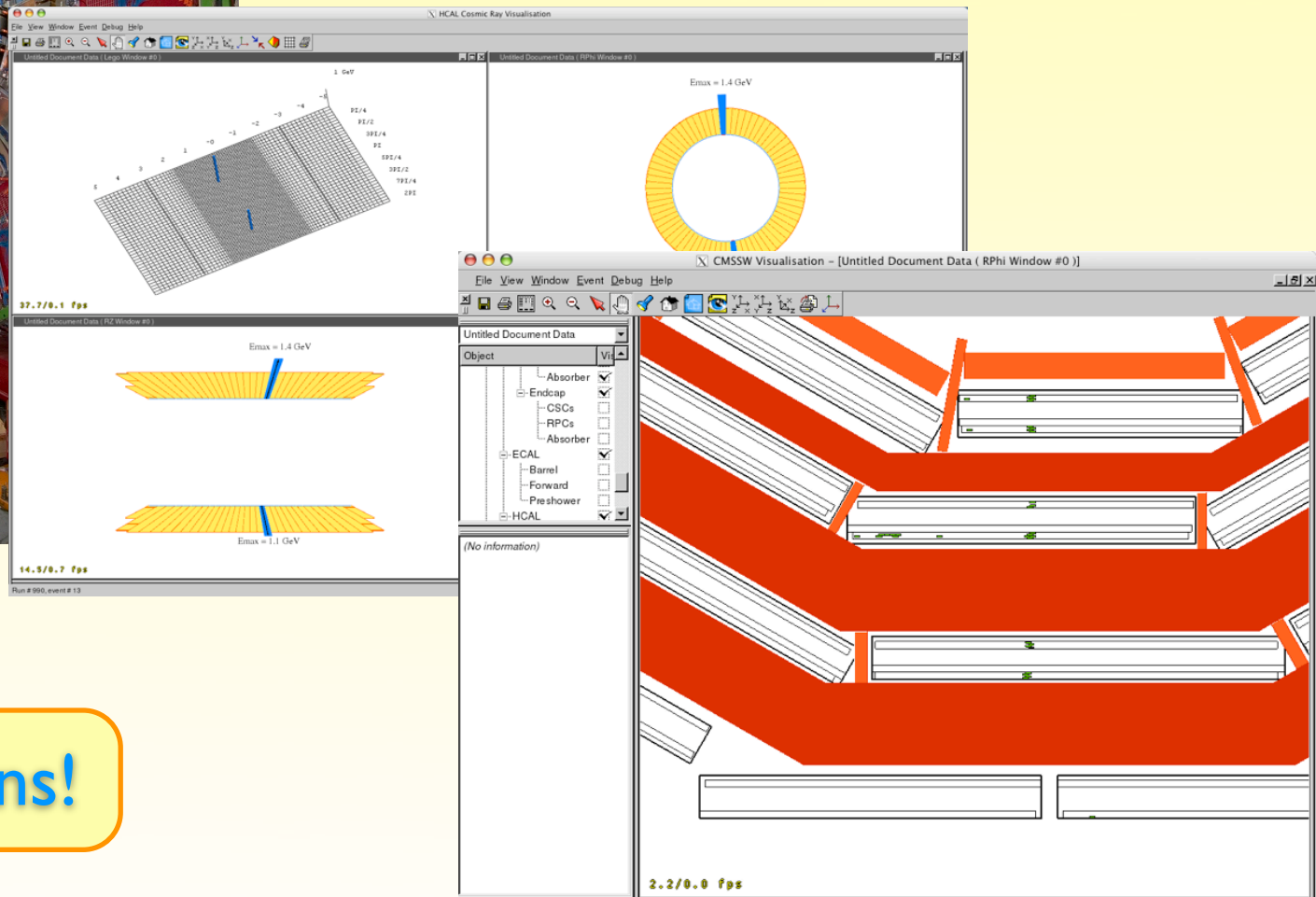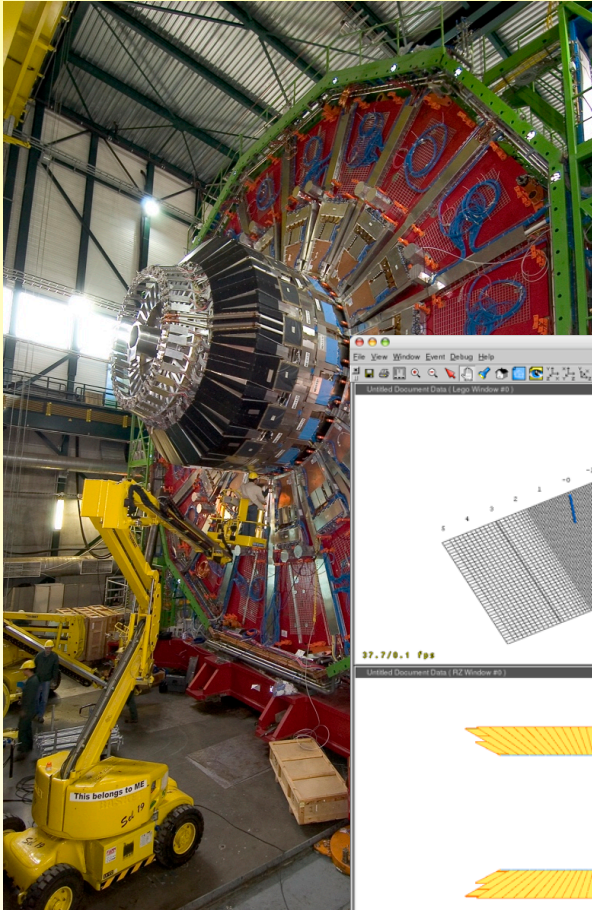Real muons!

D0

Custom sub-detectors views

Custom sub-detectors views

Custom sub-detectors views

Custom sub-detectors views

Correlated picking

Geant4 visualization

Geant4 visualization

Geant4 visualization

IGUANA on the WEB

IGUANA on the WEB

AJAX
enabled GUI

IGUANA on the WEB

IGUANA on the WEB

IGUANA on the WEB

In collaboration with Giuseppe Zito
and Maria Mennea

Tracker monitoring
histograms

...and yes, "we do ROOT too"...

- Uses QT/Root (thanks to Valeri Fine)

- Works in multithreaded environment (using a giant QT lock)

- Provides the ability of layout-ing histograms using an XML file (thanks to Andrea Carboni)

Real Data from CMS DT

Courtesy of Marco Zanetti
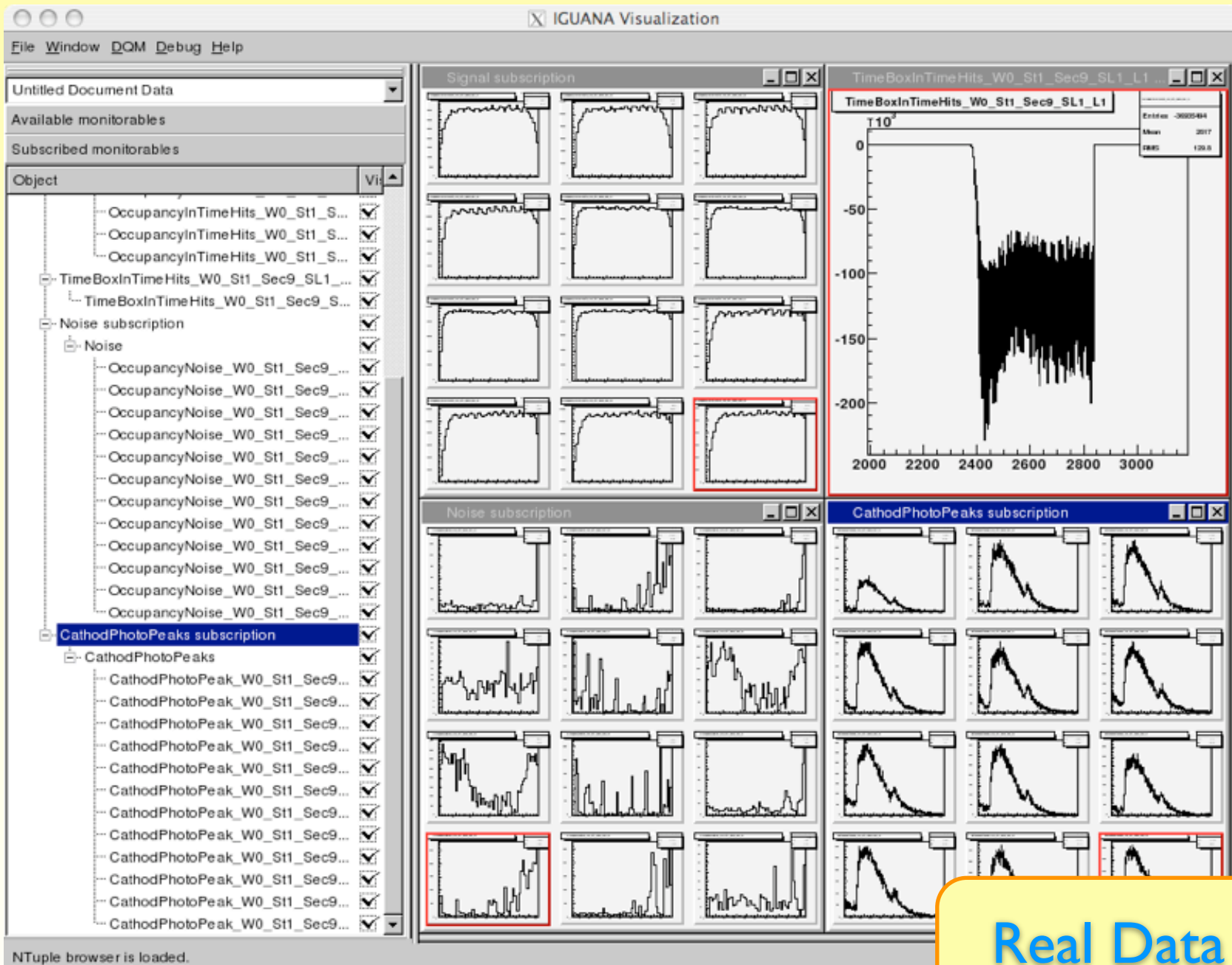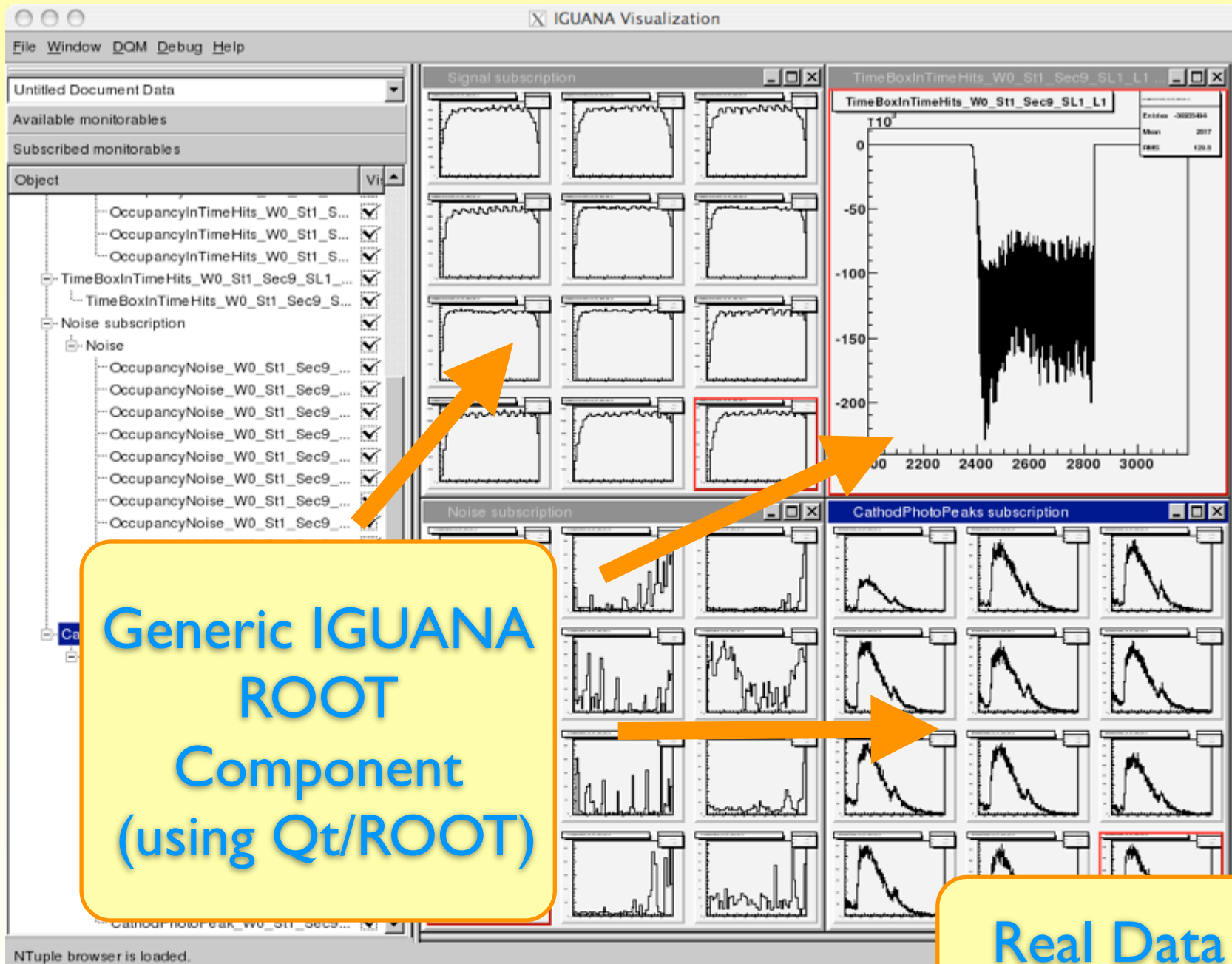
Generic IGUANA ROOT Component (using Qt/ROOT)

Real Data from CMS DT

Courtesy of Marco Zanetti

Real Data from CMS DT

Courtesy of Marco Zanetti
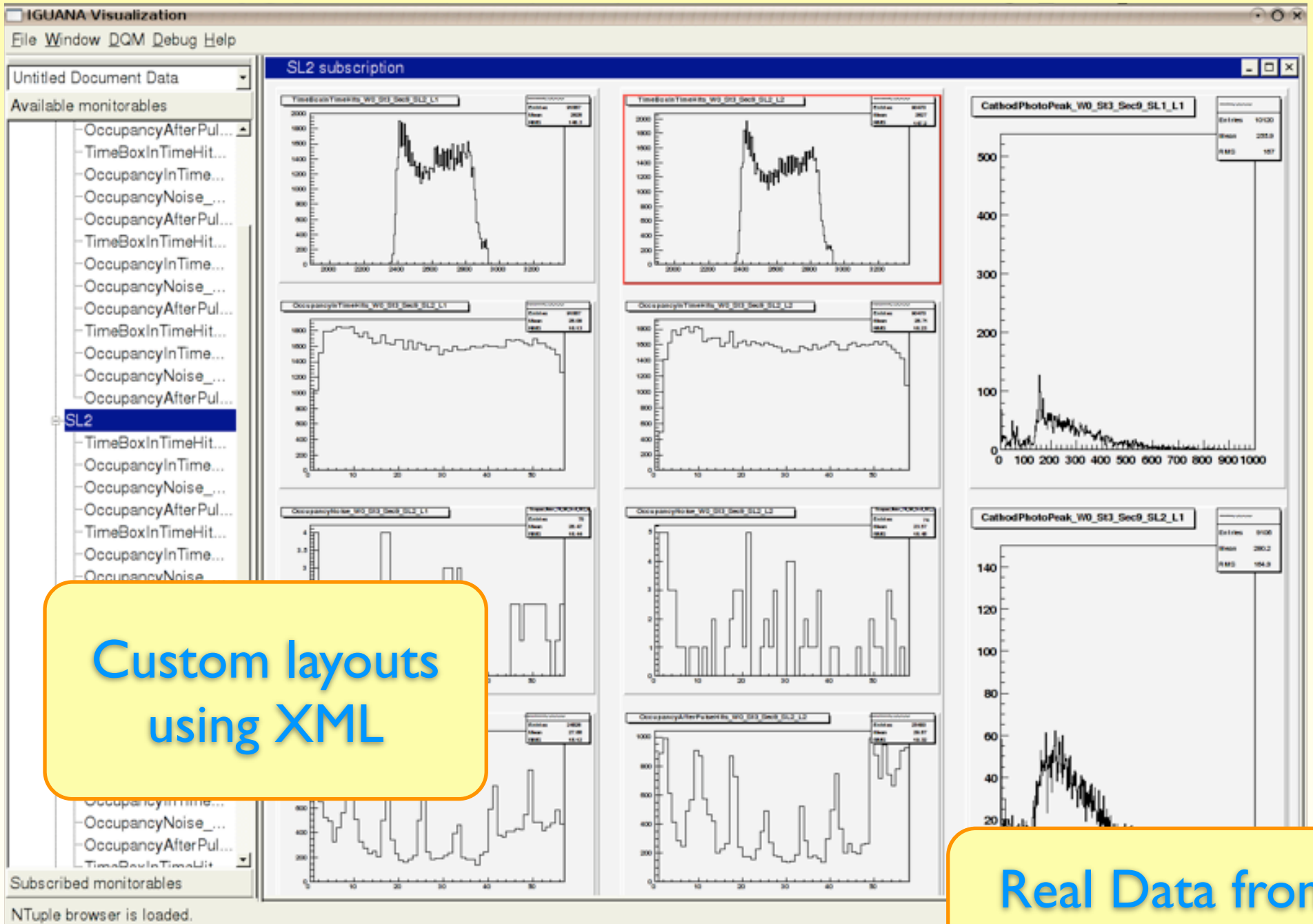
Custom layouts using XML

Real Data from CMS DT

Courtesy of Marco Zanetti

Real Data from CMS ECAL
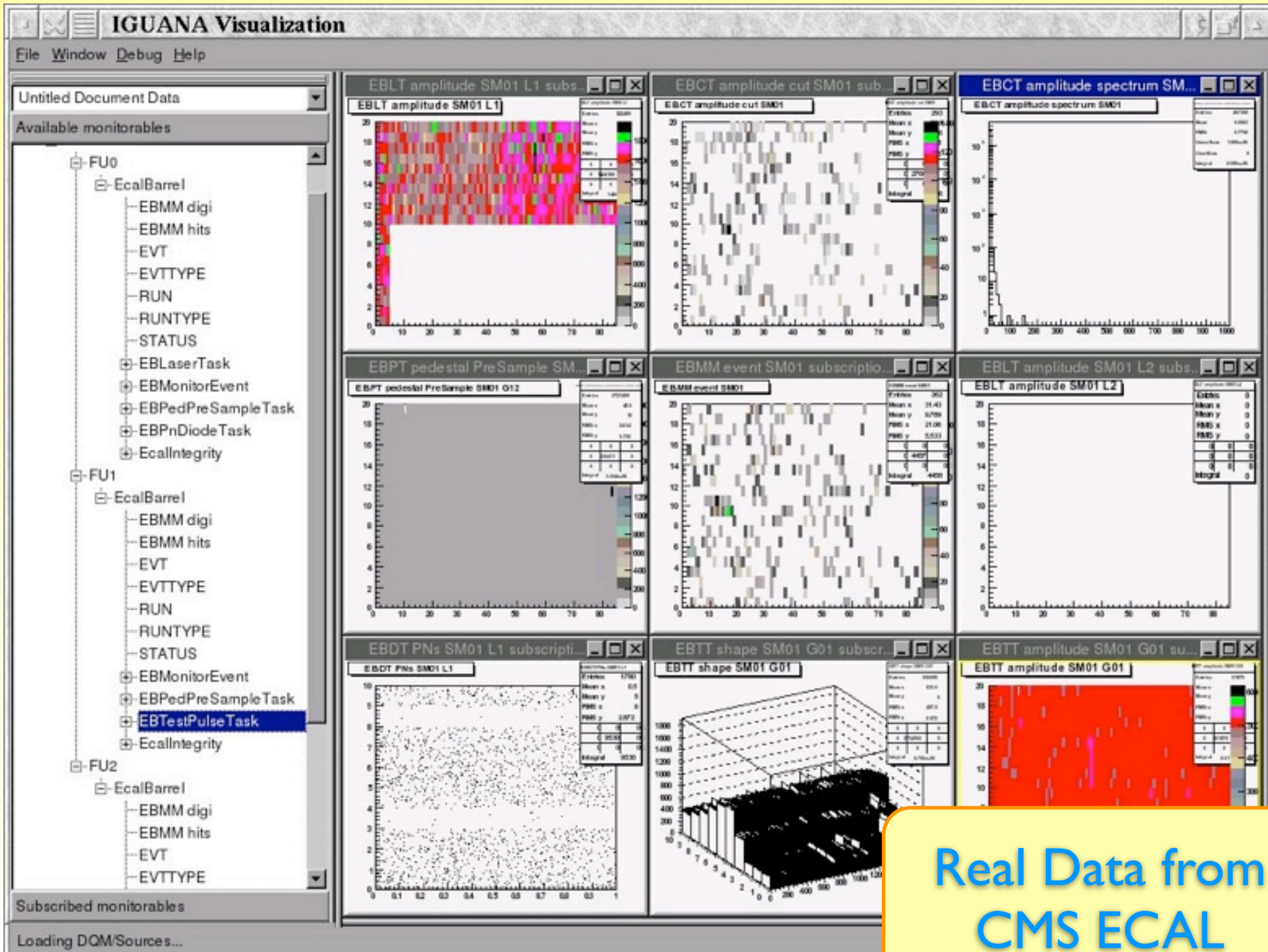
Courtesy of Giuseppe Della Ricca

Works on the web as well

QT

AJAX

The two applications share all the backend code. Only the GUI layer is different

Desiderata

- After initial problems due to dead lock in Qt/Root, now everything works fine
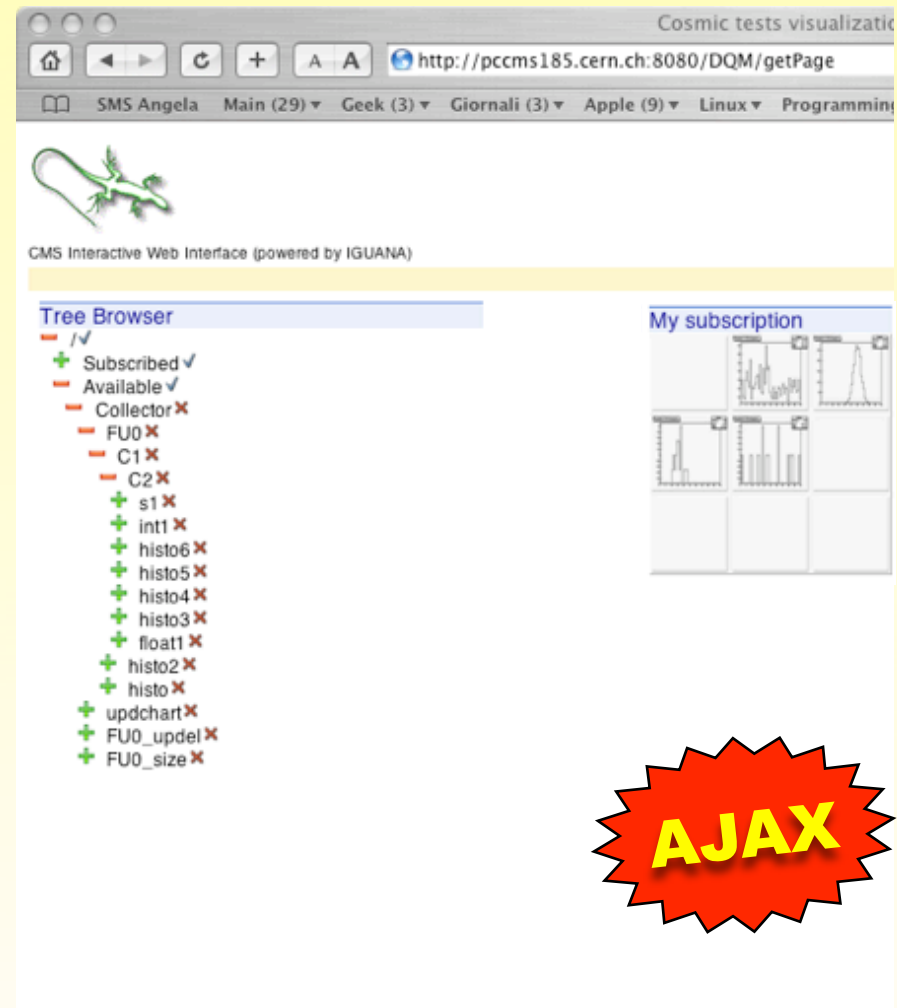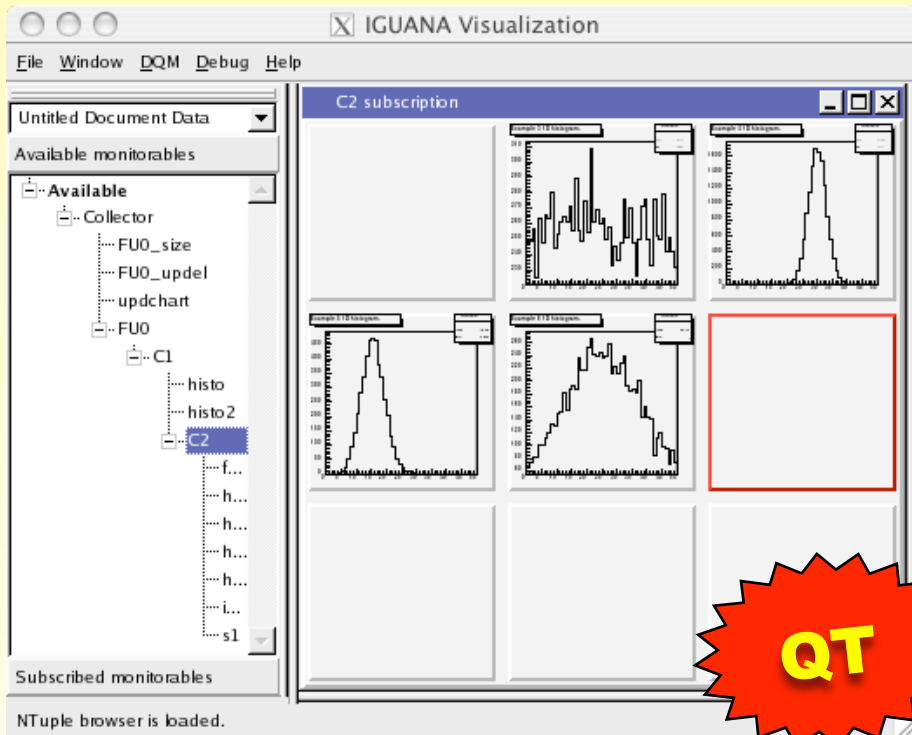
- Port to QT4

- Ability to draw directly to a QPixmap (yes, I know I can create a dummy QWidget, I just don't like it)

- QT-ification of popup menus and ROOT panels?

...getting ready for data taking....

ROC @ FNAL

Courtesy of Alan Stone