Offline Software Overview

GlueX Collaboration Meeting

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Other Talks in This Session

- Data Challenge: Richard Jones
- CCDB: Dmitry Romanov
- Tracking: Simon Taylor
- Physics Analysis Tools: Paul Mattione

CCDB

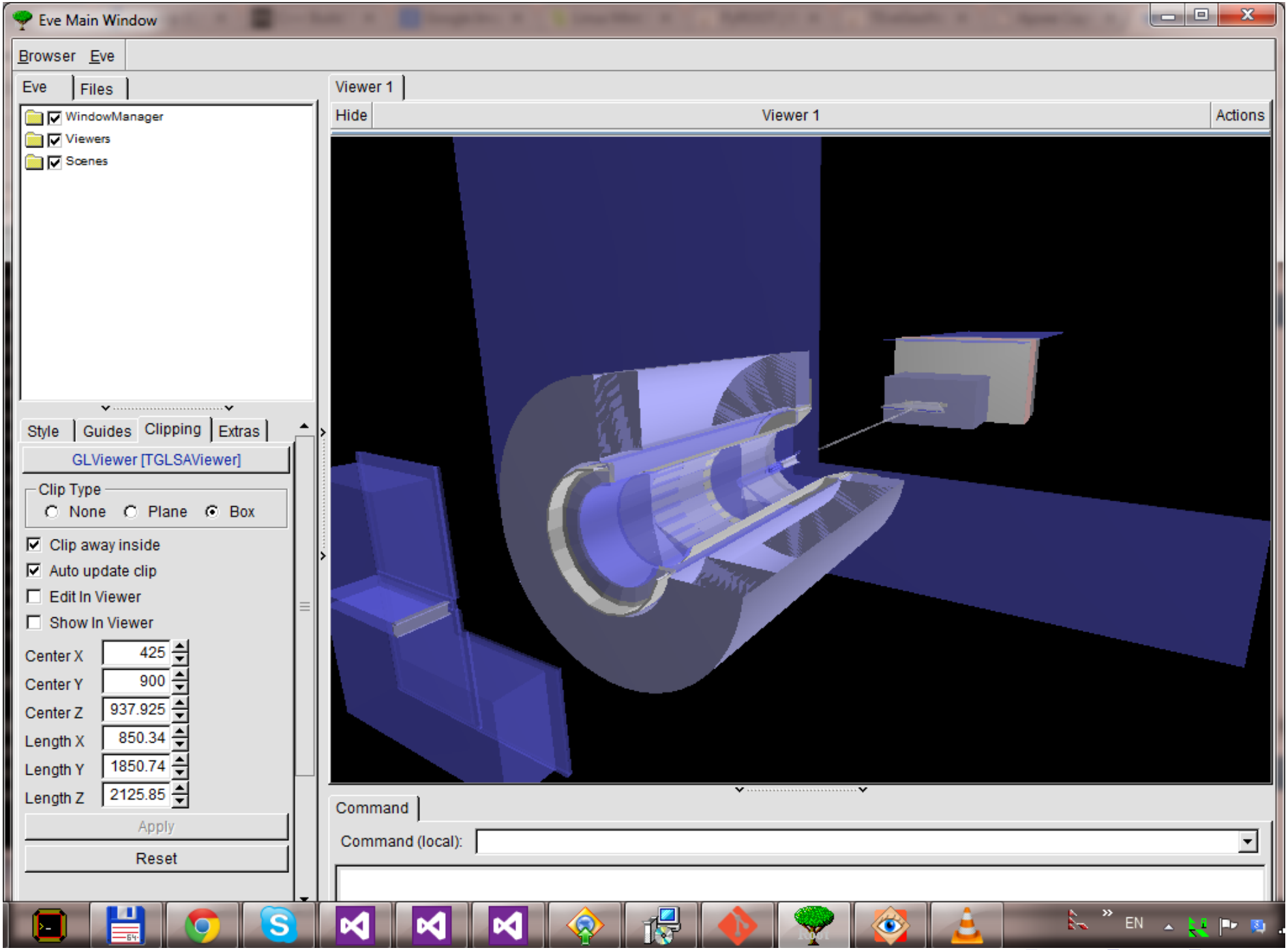
- CCDB switched to Python code base: ccdb-shell, web page, command line tools
- C++ code remains for read-operations, JANA jobs
- Official version is now the database (new constants go into the CCDB)
- Deployed in three places:
  - MySQL server at JLab, read/write, inside firewall
  - MySQL server at JLab, read-only, open to world
  - SQLite file, available from group disk at JLab
- Old text file system still works, deprecated, frozen
- Caveat: intermittent "hangs" from MySQL server, possibly network related

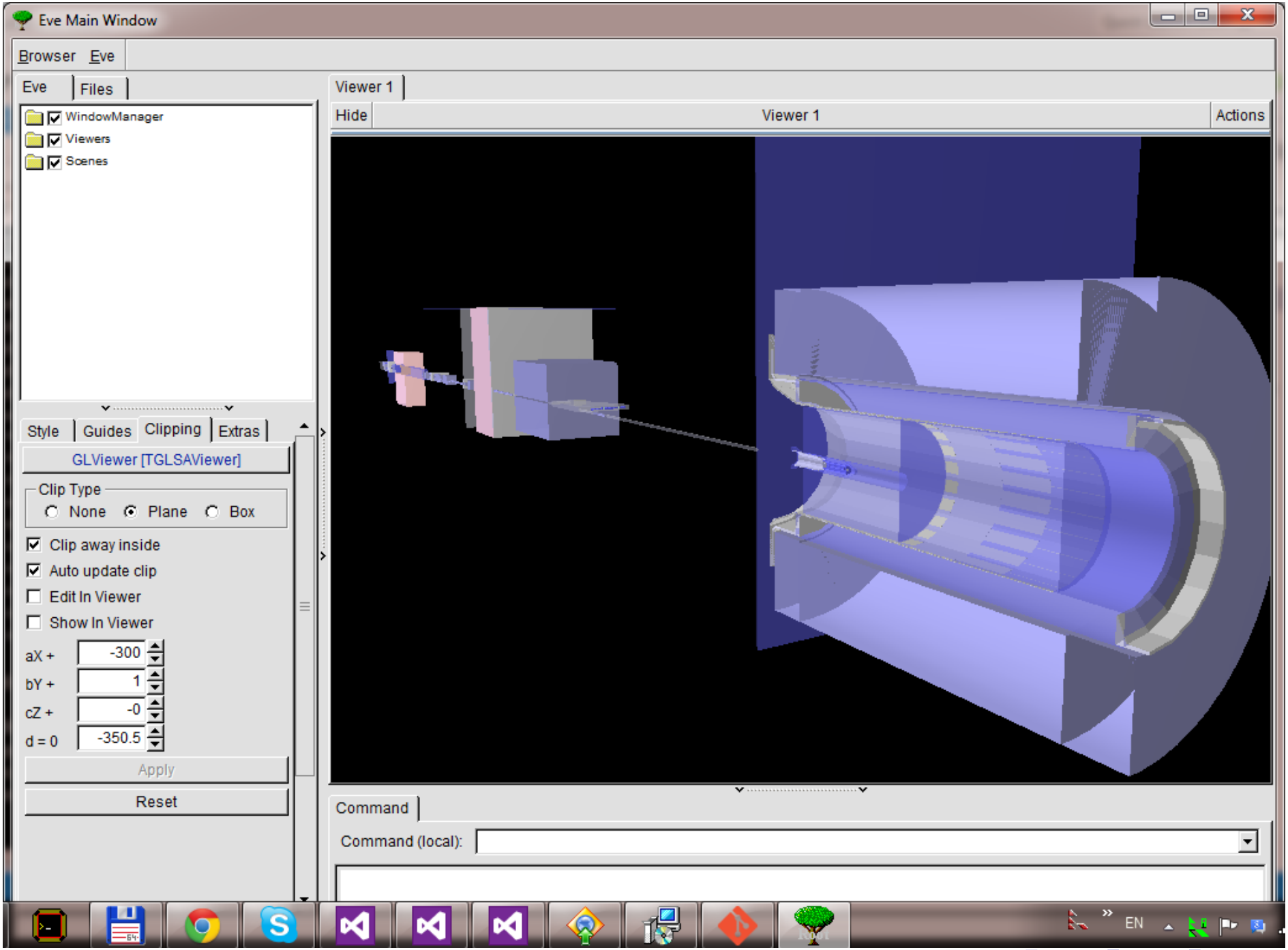
Resources

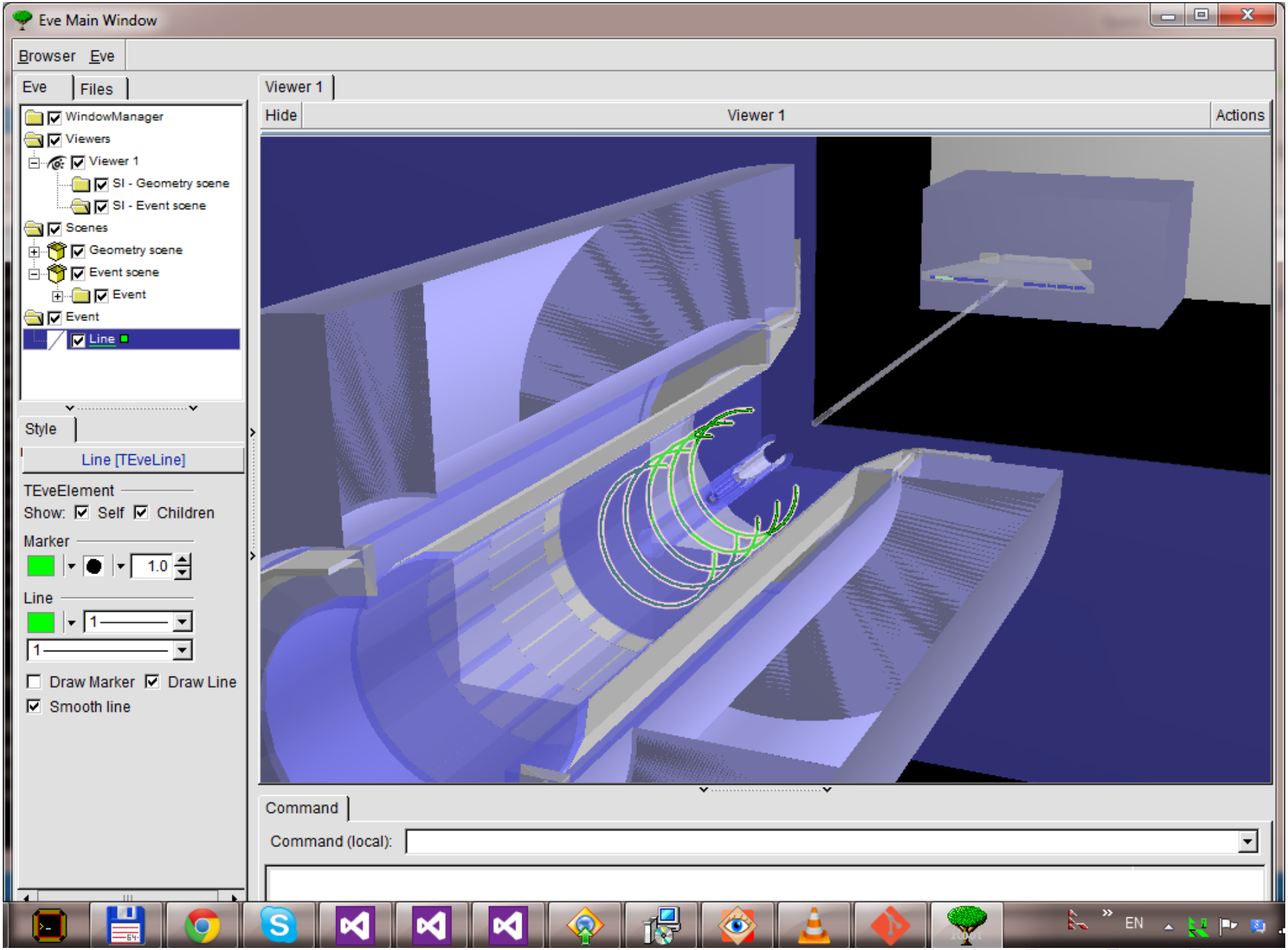
- Large files, not well suited to relational database, like magnetic field maps
- System for creating local cache
- Resource entity could be controlled with CCDB
- David developed this as part of the JANA framework
- Goal: include in next release, migrate the magnetic fields maps

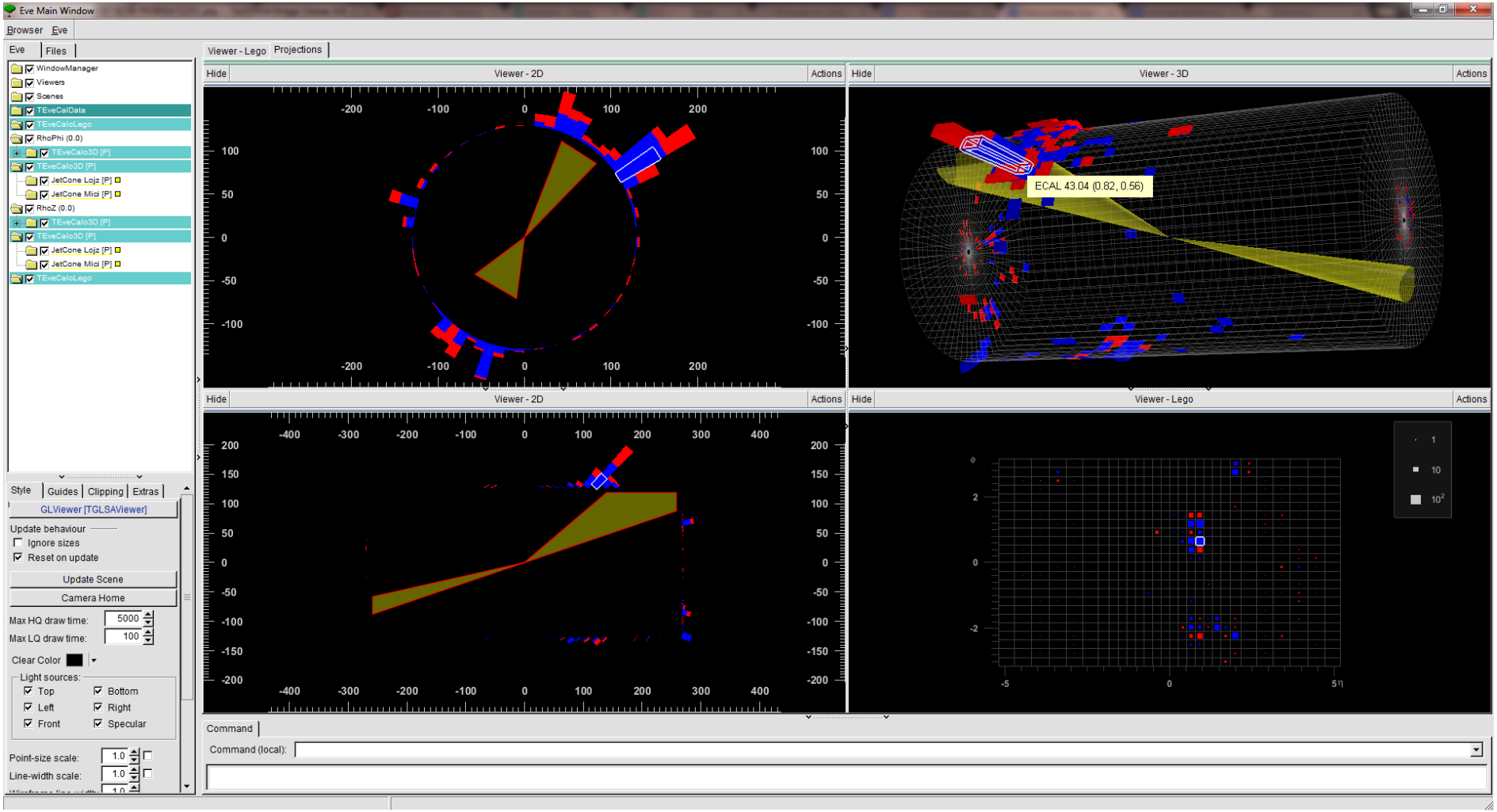
ROOT-based event display: EVE

- Dmitry did some exploratory work
- Used by LHC experiments
- Geometry based on HDDS, like simulation and reconstruction (we already have HDDS-to-ROOT convertor)
- Could be configured as JANA plug-in: full access to all raw and reconstructed objects


Eve Main Window
Browser Eve
Eve Files
WindowManager
Viewers
Scenes
Style Guides Clipping Extras
GLViewer [TGLSAViewer]
Clip Type
None Plane Box
Clip away inside
Auto update clip
Edit In Viewer
Show In Viewer
Center X 425
Center Y 900
Center Z 937.925
Length X 850.34
Length Y 1850.74
Length Z 2125.85
Apply
Reset
Viewer 1
Hide
Viewer 1
Actions
Command
Command (local):


Eve Main Window
Browser Eve
Eve Files
WindowManager
Viewers
Scenes
Viewer 1
Hide
Viewer 1
Actions
Style Guides Clipping Extras
GLViewer [TGLSAViewer]
Clip Type
None Plane Box
Clip away inside
Auto update clip
Edit In Viewer
Show In Viewer
aX + -300
bY + 1
cZ + -0
d = 0 -350.5
Apply
Reset
Command
Command (local):


Eve Main Window
Browser Eve
Eve Files
WindowManager
Viewers
Viewer 1
SI - Geometry scene
SI - Event scene
Scenes
Geometry scene
Event scene
Event
Event
Line
Style
Line [TEveLine]
TEveElement
Show: Self Children
Marker
1.0
Line
Draw Marker Draw Line
Smooth line
Viewer 1
Hide
Viewer 1
Actions
Command
Command (local):
EN


Eve Main Window
Browser Eve
Eve Files
WindowManager
Viewers
Scenes
TEveCalData
TEveCaloLego
RhoPhi (0.0)
TEveCalo3D [P]
TEveCalo3D [P]
JetCone Lojz [P]
JetCone Mici [P]
RhoZ (0.0)
TEveCalo3D [P]
TEveCalo3D [P]
JetCone Lojz [P]
JetCone Mici [P]
TEveCaloLego
Style Guides Clipping Extras
GLViewer [TGLSAViewer]
Update behaviour
Ignore sizes
Reset on update
Update Scene
Camera Home
Max HQ draw time: 5000
Max LQ draw time: 100
Clear Color
Light sources:
Top Bottom
Left Right
Front Specular
Point-size scale: 1.0
Line-width scale: 1.0
Viewer - Lego Projections
Hide Viewer - 2D Actions
Hide Viewer - 3D Actions
ECAL 43.04 (0.82, 0.56)
Hide Viewer - 2D Actions
Hide Viewer - Lego Actions
Command
Command (local):

Miscellanous

- Geometry Changes
  - Stereo/axial layer arrangement
  - Overlaps of BCAL and FDC cables and FDC survey monuments
  - Outer aluminum backing on BCAL added
  - BCAL readout box masking some material
- Simulated raw data in EVIO format
- Light-weight email lists: nightly builds, b1pi test, single-track test

Tasks

Simulation/Reconstruction

- photon clusters
  - hadronic contamination
  - split of single showers
  - merged photons
- conversion to Geant4
- further tests of reconstruction code
- event generator development
- measurement error verification
- event display

Software/Data Management

- plan next data challenge
- data distribution
- micro-DST format
- profiling code
- unit testing
- conversion to git
- amplitude analysis code management
- MySQL replication
- project management

Documentation

- write the data challenge report
- CCDB documentation
- Doxygen configuration