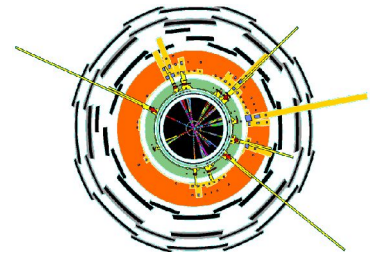


# Atlantis event display tutorial

Atlantis – Athena online mode  
Atlantis – Athena interactive

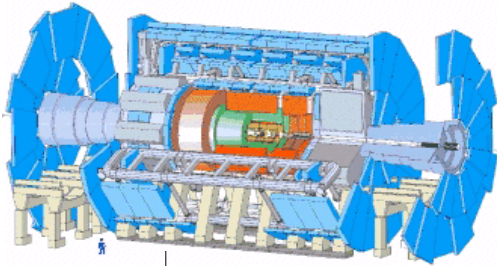
June 2, 2006



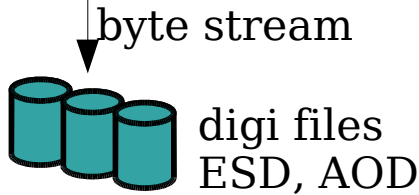
Zdenek Maxa (University College London)  
Atlantis team

# Atlantis/JiveXML visualisation

ATLAS detector



**offline / online / interactive**  
**mode of running with respect**  
**to the Athena framework**



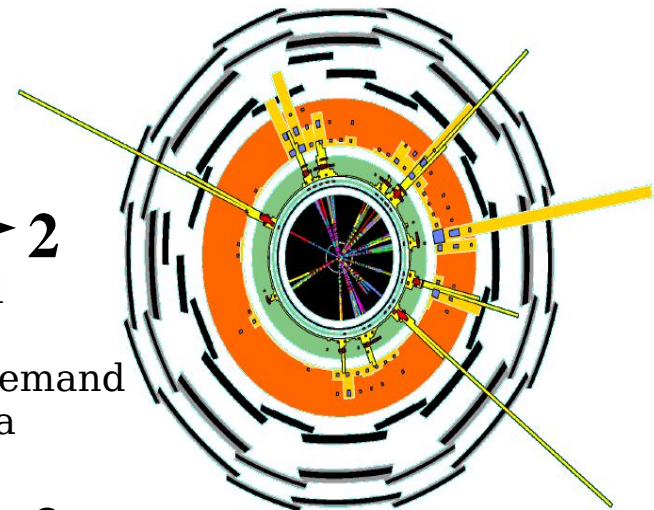
offline framework Athena  
runs reconstruction chain  
and JiveXML converter

1  
XML event files read **offline**  
(20kB cosmoics, 20MB/4MB  
full luminosity)

2  
XML event data read  
**online** over network  
using XMLRPC, on-demand  
transfer of event data

3  
Athena – Atlantis **interactively**  
(two way, interactive analysis)

Atlantis Canvas  
(XY view)



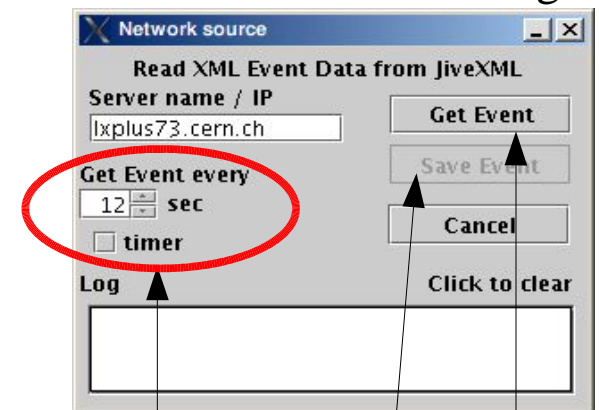
# Online event access

- Atlantis sends event data requests over network (on demand / automatically - timer)
- JiveXML XMLRPC server (running as a posix thread in Athena) transmits XML event data
- 1-to-N communication model (many users retrieving the same reconstructed events)

Atlantis Canvas –  $\rho Z$  view



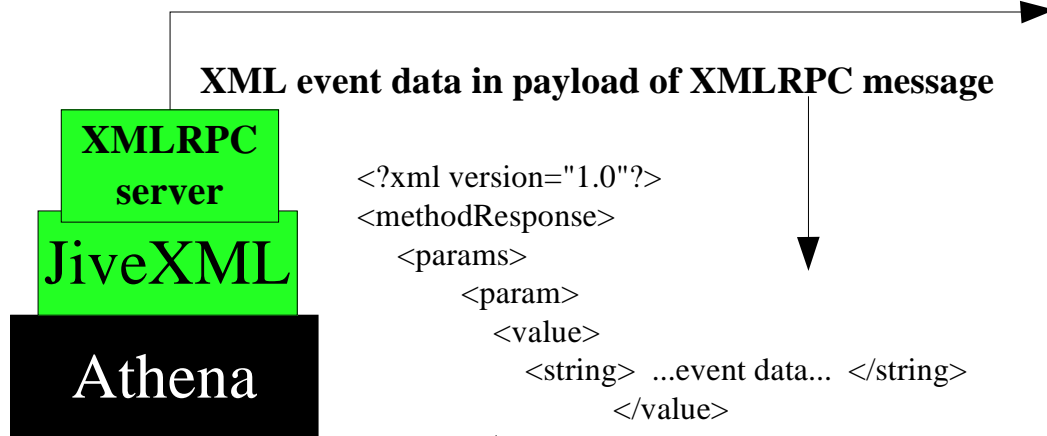
Online event access dialog



timer

Save event

Get Event



# Interactive Athena

- Interactive (Python) prompt – facility of the Athena framework enabling to steer it interactively using Athena commands (interactive analysis)
- InteractiveServer – counterpart of Atlantis on the Athena prompt
  - implemented in Python, it acts as XMLRPC server
  - receives Athena commands from Atlantis user who drives Athena from Atlantis dialog
- 1-to-1 communication model, user controls own Athena session
- Atlantis user can instruct Athena to process next event, change / query job-options of the framework, execute algorithms, etc
- Use case: “In my display, I see three tracks which look like coming from a secondary vertex. I want to fit a vertex with the Athena vertexing tool

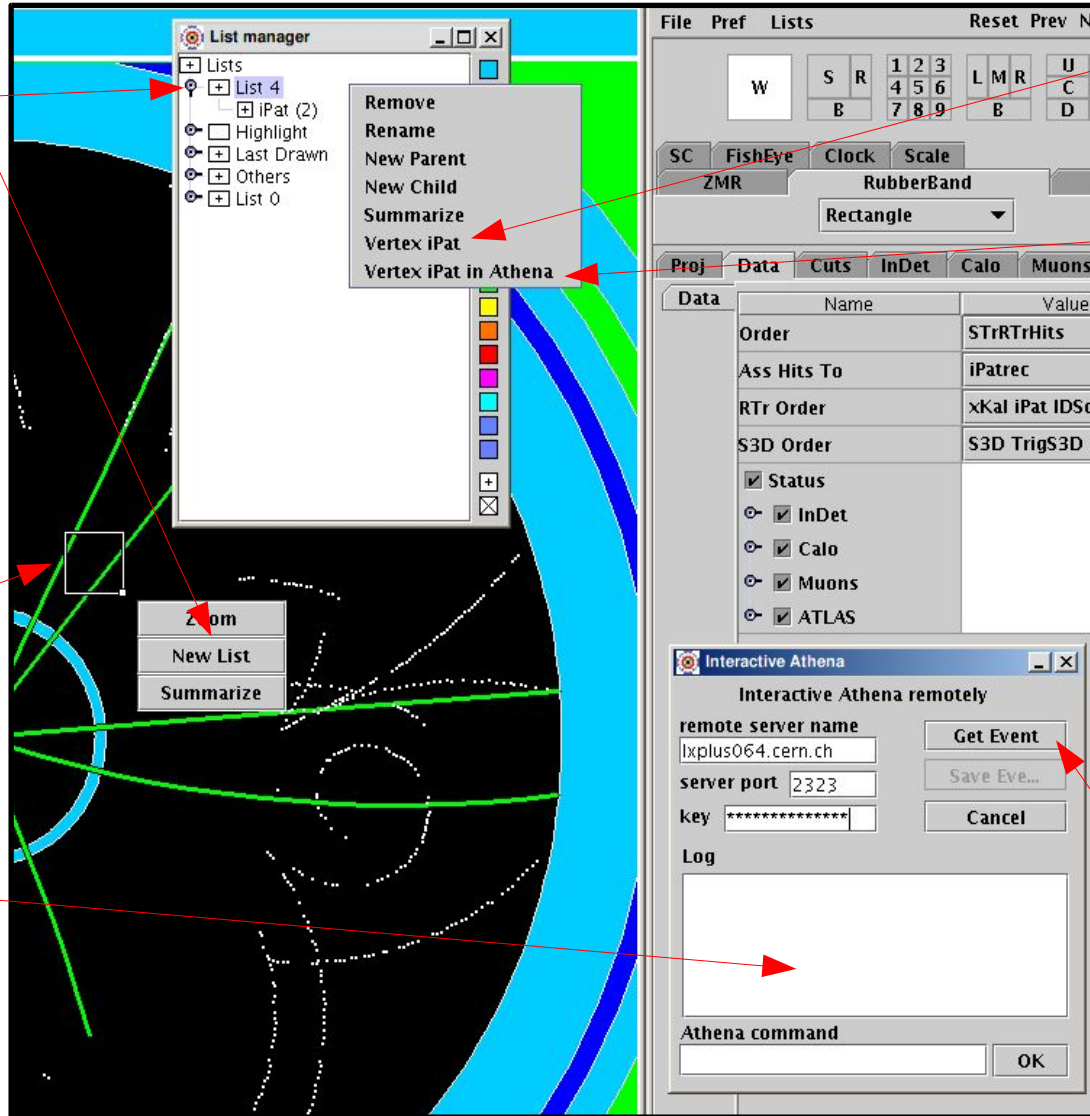
# Interactive vertexing

XY view, zoomed into ATLAS Inner Detector

(2) put selected tracks into the list

(1) select (rubberband) few tracks

interactive Athena dialog



(internal Atlantis vertex fitter)

(3) call Athena vertex fitter

(4) at Athena, InteractiveServer receives tracks indices and calls the vertex fitter

(5) if found, vertex is stored into event store

(6) get updated event data