

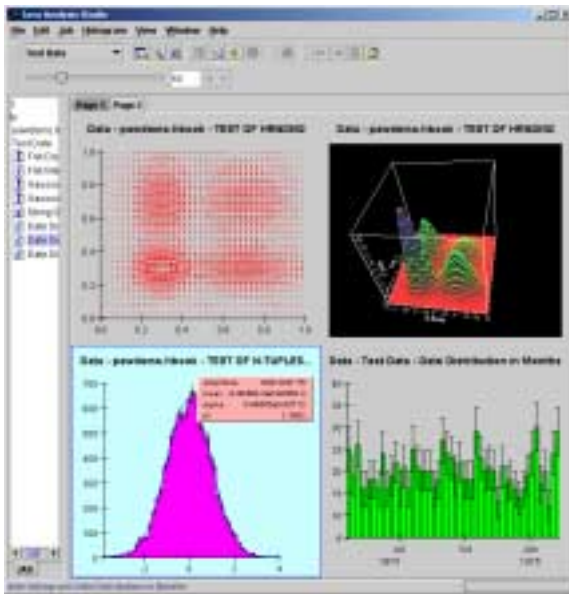
# JAS – Java Analysis Studio

## A general purpose framework for data analysis

SLAC Cyber Faire 2001

### Overview of JAS

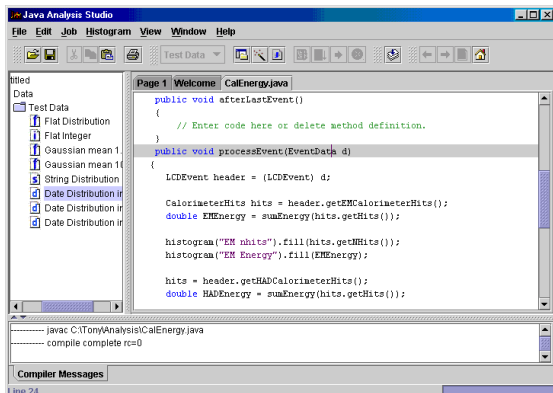
JAS is a data-format independent analysis tool. Currently it supports reading PAW files, Text files, SQL databases, StdHEP files, as well as a variety of experiment specific data formats. A prototype Root file interface is available (a production quality Root interface will be available early in 2002). JAS can easily be extended to handle other data formats.



JAS is written in Java and runs on any platform with a Java VM, including Windows, Linux, Solaris and Mac OS X.

### Offline Analysis

JAS is primarily aimed at offline data analysis. In this mode the user writes “analysis modules” in Java. Java has the advantage of being easy to learn and use, robust against programming errors and, with modern Java implementations, as fast as compiled C++. Using JAS’s built in compiler and editor the user can exploit Java’s very rapid compile, load, run cycle to rapidly develop and debug analysis code.



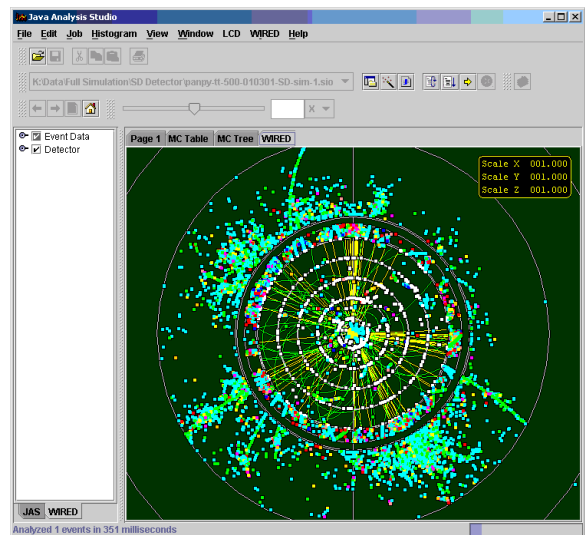
### Extendable via Plugins

JAS allows the end user to extend the functionality of the GUI by writing “Plugins” – small pieces of Java code that interact with the application through a well-defined set of interfaces. Plugins can be used to add experiment or analysis specific functionality.



### Integration with WIRED

WIRED is an experiment independent event display used by several experiments at SLAC and elsewhere. WIRED can be run as a JAS plugin, and in future JAS and WIRED will become more tightly integrated.

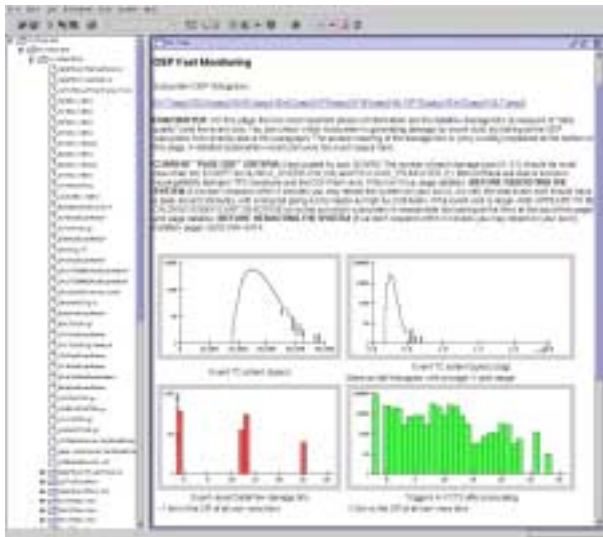


### Client-Server Operation

In addition to running as a standalone analysis application, JAS can run in a client-server mode, allowing users to access remote datasets. When run in client-server mode JAS packages the user’s analysis code as an agent, and sends it to the remote data server to run. It is possible to analyze very large datasets in this way without requiring a high-performance network between the client and server.

## Online Monitoring

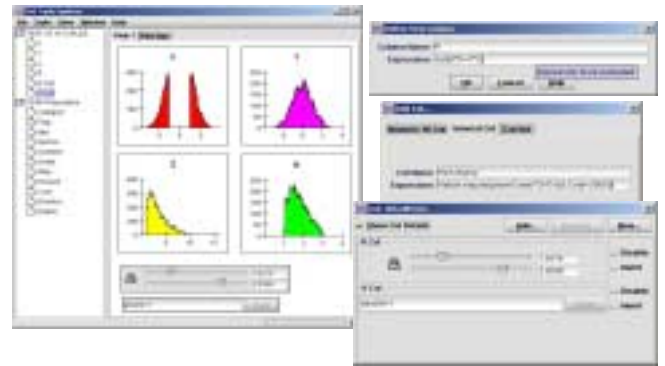
The client-server features in JAS can be used to allow remote monitoring of analysis tasks. The Babar experiment uses JAS's ability to display HTML pages with embedded plots (specified using XML) for some of their online monitoring tasks.



## Future Plans

### Tuple Explorer

The JAS Tuple Explorer, which will be available both as a standalone application and a JAS plugin, will enable users to make plots from N-tuples and apply dynamic cuts without having to write any code. The tuple explorer includes a dynamic expression compiler and, like the rest of JAS, will be highly extensible using plugins.



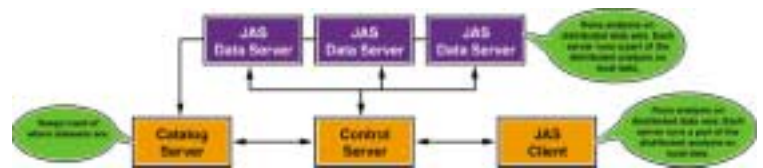
## JAS in your own Applications

JAS is written as a set of independent modules, so it is easy to take one or more components of JAS and use them in your own application. The JAS plotter is particularly useful in this regard.



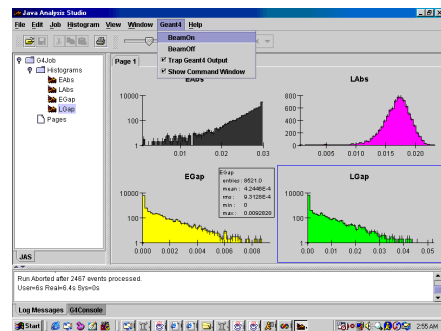
## Distributed Data Analysis

A prototype system is available which allows JAS to transparently distribute analysis tasks across a set of machines, exploiting the aggregate CPU power and IO bandwidth of all the machines. In future it is planned to enhance this system, and integrate it with some of the tools currently being developed for the HEP Data Grid.



## JAS, AIDA and Geant4

The JAS team is collaborating on the development of AIDA – Abstract Interfaces for Data Analysis. Future versions of JAS will be AIDA compliant, allowing JAS to exchange data with other AIDA compliant applications, including Geant4.



## Integration with the Web

The JAS Plotter can also be used in a web "servlet" providing a straightforward way of providing up-to-date plots on the web without relying on the user having any special software installed.



## Download and More Information

The JAS home page is at: <http://jas.freehep.org/>