



Contribution ID: 238

Type: oral presentation

H100 - an analysis framework for H1

Wednesday 29 September 2004 17:50 (20 minutes)

During the years 2000 and 2001 the HERA machine and the H1 experiment performed substantial luminosity upgrades. To cope with the increased demands on data handling an effort was made to redesign and modernize the analysis software. Main goals were to lower turn-around time for physics analysis by providing a single framework for data storage, event selection, physics analysis and event display. The new object oriented analysis environment is using C++ and is based on the RooT framework. Data layers with a high level of abstraction are defined, i.e. physics particles, event summary information and user specific information.

A generic interface makes the use of reconstruction output stored in BOS format transparent to the user. Links between all data layers and partial event reading allow correlating quantities of different abstraction levels with high performance. Detailed physics analysis is performed by passing transient data between different analysis modules. Binding of existing fortran based libraries on demand allows the use of existing utility functions and interface to the existing data base. On this basis tools with enhanced functionality are provided. This framework has become standard for data analyses of the previously and currently collected data.

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Session Classification: Event Processing

Track Classification: Track 2 - Event processing