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10 Years of Object-Oriented Analysis on H1

Monday 5 September 2011 14:50 (25 minutes)

Over a decade ago, the H1 Collaboration decided to embrace the object-oriented paradigm and completely redesign its data analysis model and data storage format. The event data model, based on the RooT framework, consists of three layers - tracks and calorimeter clusters, identified particles and finally event summary data - with a singleton class providing unified access. This original solution was then augmented with a fourth layer containing user-defined objects.
This contribution will summarise the history of the solutions used, from modifications to the original design, to the evolution of the high-level end-user analysis object framework which is used by H1 today. Several important issues are addressed - the portability of expert knowledge to increase the efficiency of data analysis, the flexibility of the framework to incorporate new analyses, the performance and ease of use, and lessons learned for future projects.

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