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## Patriot: Physics Archives and Tools required to Investigate Our Theories

*Wednesday 29 September 2004 10:00 (1 minute)*

PATRIOT is a project that aims to provide better predictions of physics events for the high-Pt physics program of Run2 at the Tevatron collider.

Central to Patriot is an enstore or mass storage repository for files describing the high-Pt physics predictions. These are typically stored as StdHep files which can be handled by CDF and D0 and run through detector and triggering simulations. The definition of these datasets in the CDF and D0 data handling system SAM is under way.

Patriot relies heavily on a new generation of Monte Carlo tools (such as MadEvent, Alpgen, Grappa, CompHEP, etc.) to calculate the hard structure of high-Pt events and the more venerable event generators (Pythia and Herwig) to make particle level predictions.

An early informational database, describing the types of data files stored in Patriot, already exists. A new database is under development.

In parallel with PATRIOT, we wish to develop the QCD tools that describe the detailed properties of high-Pt events. Some of the essential features of particle-level events must be described by non-perturbative functions, whose form is often constrained by theory, but which must be ultimately tuned to data.

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