

## New system helps DZero use More International Resources

The DZero experiment at Fermilab's Tevatron has more computing power behind its analyses thanks to a new method of bridging the gap between the US and European grid systems.

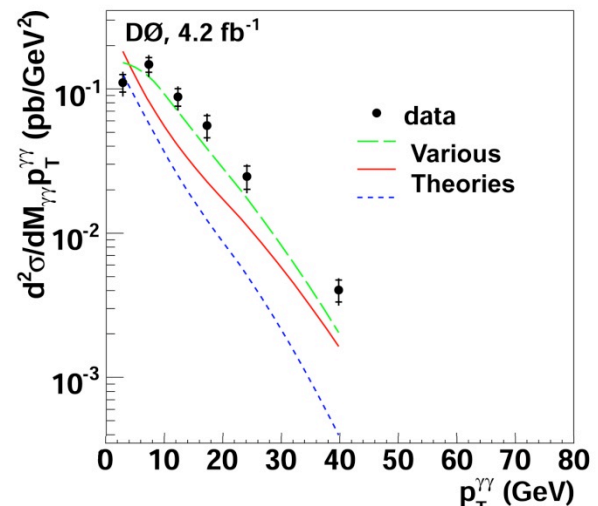
A new workload management system called glideinWMS, used together with existing software, allows DZero and other experiments to connect seamlessly with Europe's EGEE [Enabling Grids for E-scienceE] system through the USA's Open Science Grid, supported in part by the DOE ASCR office. The US LHC CMS software and computing project, the Fermilab Computing Division, the Condor Project at the University of Wisconsin-Madison, and staff from OSG developed the new system together.

"DZero is now running its simulations successfully both across OSG and EGEE sites," said Adam Lyon, DZero physicist and head of the Running Experiments Support Group. "Since we now use the OSG tools to submit directly to EGEE sites, we can keep one set of code for all the grid infrastructures we use, making maintenance, monitoring and jobs themselves much more efficient."

Analyzing the petabytes of data collected by the DZero experiment requires using multiple, interconnected computer systems. DZero has been generating up to 7 million Monte-Carlo events per week for more than two years using OSG sites. All DZero results depend on using grid resources. The most recent DZero Result of the Week < [http://www.fnal.gov/pub/today/archive\\_2010/today10-02-11.html](http://www.fnal.gov/pub/today/archive_2010/today10-02-11.html) > reports on a careful study of events in which two photons are created – a good path for finding the Higgs boson. The study, which required complex simulations conducted through grid computing, unambiguously ruled out certain theoretical calculations related to the Higgs boson. The DZero collaboration plans to conduct more studies like this one, which will require grid resources from both OSG and EGEE.

The challenge of using multiple grid systems is finding a way to bridge different models and infrastructure without slowing the process. OSG has served as a model for coordinating a variety of different systems in different regions.

"OSG's model of federation has been shown to be effective," said Ian Bird, project manager of the World Wide LHC Computing Grid project. "As Europe also moves in this direction, we look forward to continued collaboration on the process and technologies needed."



Courtesy of Fermilab Today: Events in which two photons are produced are natural laboratories in which to study collisions between quarks. These studies can unambiguously rule out certain theoretical calculations.