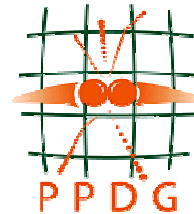


# Particle Physics Data Grid: From Fabric to Physics

## Selected Science Benefits

28 February 2004



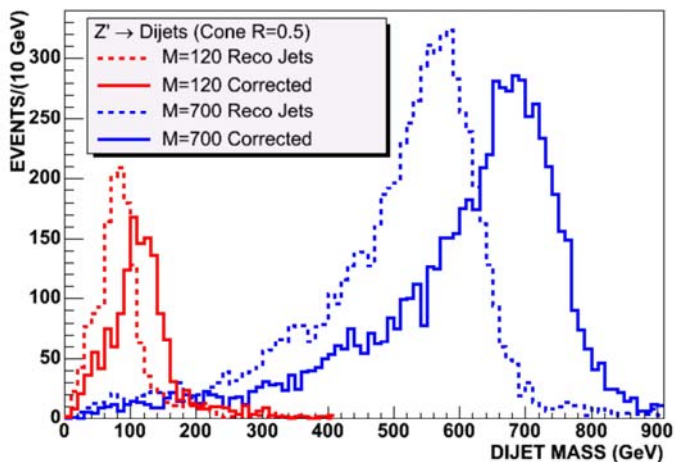
### CMS Simulation Production on Grid3

Fermilab Computing Division. Collaboratory: Particle Physics Data Grid ([www.ppdg.net](http://www.ppdg.net))

US CMS project: [www.uscms.org](http://www.uscms.org)

The US CMS software and computing team is bringing the CMS data from CERN to the US to allow the 400 US Physicists to analyse the data at their home institutions. CMS is a companion experiment to ATLAS with similar needs in terms of data distribution and computing requirements. Both experiments make use of the Grid3 common grid infrastructure for event simulation. In a "first," the two experiments shared university and laboratory resources, even changing the priority of their batch queues to accommodate the other experiments jobs. The CMS Data Challenge DC04 was one of the milestones of the experiment scoped to ensure the experiment is ready with its global data distribution and analysis systems for the start of data taking at the Large Hadron Collider at CERN in 2007.

The performance metrics for DC04 were to provide a baseline to give the experiment input to the Physics and Computing Technical Design Reports in the next two years. These design reports will form the baseline to which the production data processing and analysis systems will be built and must perform.



Fermilab scientist Lothar Bauerdick says "Grid3 was a real success for us! For the US CMS DC04 data challenge we got a 50% increase in throughput using opportunistically available grid resources - and now we are able to continue to generate several million events a month when CMS gives us the requests. We will depend on a production grid infrastructure for our data processing and analysis in the US - we are working closely with the Condor and Globus groups to make

sure their middleware meets our needs and we are using the Open Science Grid Consortium as the means to work with many groups on a common grid infrastructure for us all"