



JULY 2006

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Meetings and Events

[Fourth International Summer School on Grid Computing](#)
Ischia, Italy
July 9–21, 2006

[OSG Consortium Meeting](#)
Seattle, Washington
August 21–23, 2006

[GGF18](#)
Washington, D.C.
September 11–14, 2006

[EGEE'06](#)
Geneva, Switzerland
September 25–29, 2006

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The Next Consortium Meeting



The Seattle skyline.
Image Courtesy Michele Livan

I look forward to hosting the OSG Consortium meeting in Seattle from August 21–23. Please [register](#) soon if you are coming. In addition to presenting the current work and plans for the OSG, we have invited scientists to talk about their use of distributed computing infrastructures and leaders of our partner grids to present their plans and partnerships.

The program committee for this meeting includes Deputy Executive Directors Rob Gardner and Doug Olson, Anne Chervenak, Maytal Dahan, and support staff at Fermilab led by Penelope Constanta. Through this process I am learning much more about the work of the Consortium, which will help me in my work on D0 and ATLAS. I am also using the opportunity to increase the University of Washington's knowledge about OSG as we discuss possibilities for increasing our involvement in grid activities.

We also hope to continue the tradition

From the Executive Director

Mike Wilde reports that last month's Summer Grid Workshop was a great success, "the best of the three so far, with a diverse group of 40 students including mechanical and bio engineers from as far away as Uruguay and Puerto Rico." I want to thank all the teachers and organizers of this event—it is a lot of work and is an extremely important part of our education program.



This month we have been thinking more about how to keep our OSG infrastructure secure. Under the leadership of the Security Officer, Don Petravick, we are completing the OSG Risk Assessment that lists the core OSG items for which we have security responsibility. We are grappling with what a VO Agreement should contain in terms of VO management and participant responsibilities in the mutual trust relationship between sites and users of OSG. We plan to present the current draft agreements at the Consortium meeting.

The integration activity is completing the TWiki page that defines the OSG 0.5.0 integration release and the VDT team is releasing VDT 1.3.11 which, among other things, updates the patches and versions of Condor and Globus to make them consistent with the TeraGrid CTSS release.

It has been a year since we "opened" the OSG in July 2005. Job and data throughput has increased steadily, though summer month vacations are taking their toll. There is much to be done in the coming year, and the OSG will continue to rely on your continued enthusiasm and contributions.

Ruth Pordes, Fermilab

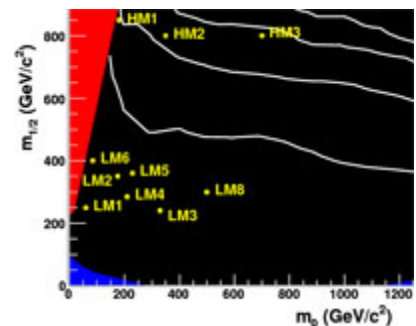
Searching for Supersymmetry with CMS and the OSG

What is dark matter made of? Do the forces of nature come together at some grand unification energy scale? Why do we have to fine-tune our present theories to understand the origin of mass? These are just some of the fundamental mysteries which physicists will try to understand when the Compact Muon Solenoid experiment begins to collect data in 2008 at the Large Hadron Collider. One theory that could shed light on these questions is supersymmetry, which postulates an undiscovered supersymmetric partner for every particle in the current Standard Model of physics.

In preparation for the first harvest of experimental data, a group of physicists at the University of Florida are using the OSG and DISUN, the Data Intensive Science University Network, to investigate the potential of the CMS Detector to discover supersymmetry. In a recent study, data sets were simulated by UF physicist Craig Prescott and graduate student Michael Schmitt.

"Three hundred CPU years using the collective resources across the grid were required to fully simulate and reconstruct the response of the CMS Detector to 30 million proton-proton collision events," said Prescott.

Once the simulated data sets were prepared and positioned on OSG and DISUN sites, they were analyzed by graduate students Yuriy Pakhotin and Bobby Scurlock, who worked to find selection criteria that isolated the supersymmetric signal from the Standard Model backgrounds. The above [figure](#) shows their



Part of a 2D scan of the CMS discovery potential for supersymmetry. Each contour represents the discovery reach for a different amount of collected data. (Click on image to view full plot.)

of having the main VO and site managers sign off on the roadmap for the next major OSG release—OSG 0.6.0—and to have parallel sessions covering technical topics of interest to Consortium members. This meeting will include parallel sessions on Security and Procedures, Facility and Fabric Configuration, Management and Support, Data Management and Information Services. Suggestions for other parallel session topics are welcome!

The [agenda](#) is still evolving. Any comments and suggestions are welcomed, please email them to the [program committee](#).

Gordon Watts, for the OSG Program Committee

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results as a two-dimensional scan of different supersymmetry mass parameters. Such a scan requires the complex simulation of many thousands of events at each point, and so the use of OSG and DISUN computational resources was critical. This work which establishes that if low-mass supersymmetry exists in nature then CMS will be able to discover it in the very early running of the LHC, will be published soon in the CMS Physics Technical Design Report, Volume II.

Richard Cavanaugh, University of Florida

CMS Analysis on the OSG

The OSG resources for the CMS computing infrastructure include seven U.S. Tier-2 centers that represent a significant contribution to CMS computing. The Tier-2 centers are responsible for producing simulated CMS events and supporting user analysis.

The CRAB analysis tool provides all CMS users with access to all experimental and simulated data samples. The CMS Resource Broker now has access to utilization information from OSG sites to decide which jobs is send to which site uniformly over EGEE and OSG. This brokering requires the interoperation of the EGEE and OSG information providers, recently achieved using the current middleware versions from EGEE (LCG 2.7) and OSG (OSG 0.4.1). In addition, the user community has a second access mode for data samples: direct job submission through Condor-G. This access mode is restricted to OSG sites only and currently provides a significant speed advantage.

To simulate user analysis, JobRobots that use CRAB in an automated way are used to reach the goal of 12,500 analysis jobs per day on EGEE and OSG resources. As the user analysis tool is used directly by the robots, the results are directly applicable to the real user analysis workflow. In just a few days, thousands of jobs have been completed with efficiencies around 90%.

The goal number of jobs per day was recently reached, although this scale cannot currently be sustained over long periods. The limitations of the current submission infrastructure has a significant impact on this performance. The new EGEE middleware with the gLite 3 Resource Broker will be tested soon across EGEE and OSG resources to investigate increases in scale. During the next few months, the JobRobot operations will be supplemented or even replaced by real user interaction using CRAB on a large simulated data sample.

Oliver Gutsche, Fermilab



Dashboard summary for June 28, where 14,500 jobs were run on OSG and EGEE resources. (Click on image for larger version.)