Contribution ID: **51** Type: **Poster**

AUGER - on exploration of the cosmic rays mysteries

Tuesday 23 September 2008 16:27 (1 minute)

Report on the impact of the activity, tool or service. This should include a description of how grid technology enabled or enhanced the result, or how you have enabled or enhanced the infrastructure for other users.

Within past 6 months we have produced a CORSIKA/EPOS library with 15000 showers, which is the largest library of the past decade. We spent 270,000 hours of walltime producing this library. After recent increase of CPU and SE resources in the VO AUGER we plan to enlarge the number of events in this library by factor of 5 by the end of 2008. The similar amount of events would have been computed within 2-3 years and would have required at least one production manager per site if it was run on private computing farms off the Grid. The simulated showers are stored on SEs before the full-chain of data analysis is done on the Grid and the showers will be transferred to the computing centre in Lyon once the full-chain is completed, so all the collaborators can access these results.

Describe the added value of the grid for your activity, or the value your tool or service adds for other grid users. This should include the scale of the activity and of the potential user community, and the relevance for other scientific or business applications.

The VO Auger is part of the EGEE grid. The VO currently provides more than 500 CPUs at 14 sites in 9 different countries worldwide and 100 TiB of disk space on SEs to every VO AUGER member. We have developed a production framework which enables us handle the whole large-scale Monte Carlo production with several thousands submitted jobs per day with a very limited manpower. We also make use of the generic gLite service Job Provenance for long-term archiving information of information on executed jobs.

Describe the activity, tool or service using or enhancing the EGEE infrastructure or results. A high-level description is needed here (Neither a detailed specialist report nor a list of references is required).

The Pierre Auger Observatory is an astroparticle hybrid detector studying ultra-high energy cosmic rays composed of most energetic and rarest particles in the Universe. The VO AUGER was created in 2006 by Czech collaboration group in cooperation with CESNET, which provides and maintaines central services (registration portal, VOMS server, LFC, WMS, LB) for the VO AUGER.

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Session Classification: Demos and Posters

Track Classification: Poster