

# VO AUGER Large Scale Monte Carlo Simulations using the EGEE Grid Environment

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VO AUGER simulations made use of many CPUs connected in the EGEE Grid, which enabled us to simulate events with higher precision. The results of simulations were uploaded and stored on Storage Elements and registered in LFC Catalogue, therefore they can be accessed globally by all the VO AUGER members.

## 3. Impact

We developed a framework for submission of many simulation jobs with different input parameters. This framework uses standard gLite job handling commands and it effectively and easily handles Large Scale simulations with a limited manpower, thus VO AUGER members can use the Grid to simulate their own “private” offline productions and share results of performed simulations with the whole AUGER collaboration. We established a VO naming scheme policy in order to manage the resulting data on various storages. We also use Logging and Bookkeeping and Job Provenance as a generic gLite service designed for long-term archiving of information on executed jobs focusing on scalability, extensibility, uniform data view, and configurability, which allows more specialized catalogues to be easily built.

## 4. Conclusions / Future plans

In conclusion, the Grid turned out to be very useful infrastructure for Large Scale simulations for the AUGER collaboration. The VO AUGER members can submit their computations to several Computing Elements and the AUGER collaboration members can access the simulations results worldwide.

## Provide a set of generic keywords that define your contribution (e.g. Data Management, Workflows, High Energy Physics)

Pierre Auger Observatory, High Energy Physics, Large Scale MC offline production, Job Provenance

## 1. Short overview

The Pierre Auger Cosmic Ray Observatory is studying ultra-high energy cosmic rays showering down on Earth. CPU intensive Monte Carlo simulations are needed to compare predictions of different models with observed data. We share our experience with usage of EGEE grid resources to run these simulations. Also our experience with Job Provenance will be presented.

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