

Simulations and Offline Data Processing for the Auger Experiment

Friday 11 May 2007 12:00 (20 minutes)

Describe the scientific/technical community and the scientific/technical activity using (planning to use) the EGEE infrastructure. A high-level description is needed (neither a detailed specialist report nor a list of references).

The Pierre Auger Cosmic Ray Observatory is studying the universe's highest energy particles, which shower down on Earth in the form of cosmic rays. Data recorded by the experiment are analysed and compared with results from simulations. The Pierre Auger Collaboration includes more than 250 scientists from 17 countries. All members of the collaboration should have easy access to data.

Report on the experience (or the proposed activity). It would be very important to mention key services which are essential for the success of your activity on the EGEE infrastructure.

We developed a framework for submission of many simulation jobs with varying input parameters. We will report on our activity of porting offline data processing to the Grid. Experience from a data management in the VO auger will be given.

With a forward look to future evolution, discuss the issues you have encountered (or that you expect) in using the EGEE infrastructure. Wherever possible, point out the experience limitations (both in terms of existing services or missing functionality)

We had to establish our own rules for file naming schemes and registration to be able to manage data on various SEs. Generic rules imposed by middleware and tools for data consistency checks are needed.

Describe the added value of the Grid for the scientific/technical activity you (plan to) do on the Grid. This should include the scale of the activity and of the potential user community and the relevance for other scientific or business applications

There are two main features of the Grid important for the Auger collaboration. As a global collaboration, it benefits from a uniform access to data stored on Storage Elements and registered in a catalogue. CPU requirements on simulations of the ultra high energy cosmic rays are huge, possibility to use many CPUs connected via Grid enables to simulate events with higher precision. We expect tens of active grid users accessing data and/or running simulation jobs.

Primary author: Dr CHUDOBA, Jiri (Institute of Physics)

Co-author: SCHOVANCOVA, Jaroslava (CESNET)

Presenter: Dr CHUDOBA, Jiri (Institute of Physics)

Session Classification: Experience with application domains

Track Classification: Experience with application domains –setting up and production