

# GEOSCOPE applications on EGEE

*Tuesday, 12 February 2008 16:00 (0 minutes)*

For now, applications dealing with seismic noise (signal collected between earthquakes, more than 99% of the data) or major earthquakes are taking advantage of the grid facilities:

- average seismic noise level per day over the past years is computed
- polarized noise and source determination also over the past years.

Although much more demanding on CPU time, this was achieved faster than the corresponding raw noise calculation as GEOSCOPE data was already transferred on EGEE.

- source and mechanism determination for large earthquakes. It is still one of ESR's most successful application on EGEE as hundreds hours of computing time are completed during a very short period, delivering the results almost right after the data is available.

## 3. Impact

It is yet the first time that seismic noise is thoroughly determined over a long period. Coming articles will detail the various incomes.

Earthquake source mechanism is determined almost for every major event (magnitude over 6.8) and reported through the GEOSCOPE web site.

## URL for further information:

<http://geoscope.ipgp.jussieu.fr>

## 4. Conclusions / Future plans

Any production using GEOSCOPE dataset as input will be much faster since it is directly available on EGEE and needn't to be obtained from the GEOSCOPE data center which is unable to scale to a rate even far below grid possibilities.

Seismic noise is going to be computed as averages over 2 hours periods (day averages were produced up to now).

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

earth sciences, seismology

## 1. Short overview

The french worldwide network of digital seismological stations GEOSCOPE has collected during the past 20 years hundreds GB of seismological data.

Several applications using this dataset have been running on EGEE over the last year, also allowing to register the dataset in EGEE catalogues for a more convenient and scalable access for future applications.

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**Session Classification:** Posters

**Track Classification:** Scientific Results Obtained Using Grid Technology