

The members of the Enabling Grids for E-scienceE (EGEE) Earth Science and Geophysics group belong to the earth science and computer science communities from academia, industry and research and service organisations. Applications cover a large range of domains: atmospheric chemistry, meteorology, solid earth physics, hydrology, geosciences, climate and space weather.

These closely related communities operate two Virtual Organisations (VOs). The Earth Science Research VO is devoted to academic institutes and related partners, while Expanding GEOsciences on Demand (EGEODE) was initiated by the private French Company, CGG Veritas, to support EGEE's first industrial application. However ES applications are also present in regional VOs like SEEGRID.

Earth Science has deployed many applications through different VOs:

- **Atmospheric chemistry** applications deal with ozone and pollution. The first application on grid was the processing and the validation of satellite ozone profiles with LIDAR (Light Detection and Ranging) observations. The Danish Eulerian Model is deployed for the long range transport air pollution over Europe.
- **Meteorology applications** concern regional weather prediction with various models and the regional el Niño behaviour in Latin America.
- **Solid earth physics** has deployed a large number of applications based on re-analysis of the GEOSCOPE data set (an international network of seismometers), the determination of the earthquake characteristics few hours after the data arrival, numerical simulations of earthquakes in complex 3D geological models and geomorphology.
- **Hydrology** applications on EGEE concern societal-environmental problems, flood and water management in Mediterranean area. The first application is based on a cascade of meteorological, hydrological and hydraulic models initialized by experimental data. The second application, using Monte Carlo simulations, provides probabilistic maps of seawater intrusion in coastal aquifer of the Mediterranean Basin.
- **Climate** applications deal with access and distribution of climate model outputs in the framework of the Intergovernmental Panel on Climate Change.

Expanding GEOsciences on Demand (EGEODE) is operated by the French company, CGGVeritas. It supports academic laboratories for research in geosciences focused on Geocluster, an industrial seismic platform. Geocluster is the first industrial application successfully running on the EGEE grid Production Service. It allows researchers to process seismic data and to explore the composition of the Earth's layers.

Application webpages

EGEE is keen to consider other applications. For further information on how to participate see <http://technical.eu-egee.org/index.php?id=392>. More information about the applications running on EGEE be found on the EGEE website at <http://technical.eu-egee.org/index.php?id=148>.

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