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SPECFEM3D

“A software package to simulate 3D seismic wave propagation”

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SPECFEM3D

What is it?

“A software package to simulate 3D seismic wave propagation”

- ◆ Based upon the spectral-element method.
- ◆ Designed to develop Parallel Programming
(High Performance Computing Apps by Message Passing Interface).
- ◆ Source code written in Fortran 90 is GNU General Public License.
- ◆ Dimitri Komatitsch and Jeoren Tromp at Harvard University and Caltech, USA
(1998).
- ◆ Geodynamics Group at the University of California at Davis.

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How does it work?

The application has three main stages:

1. Mesh creation for domain decomposition.
2. Distributed database creation.
3. Solver (the highest computational demand stage).

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What is the scope of study?

- **Collaboration** with **CLARA** communities.
- **Current usage**: cluster and HPC schemes.
- **Purpose usage**: grid scheme.

There are some gridification attempts at **EGEE**
(**E**nabling **G**rids for **E**-science**E**)

<http://www.ipgp.fr/~moguilny/GRILLE/>

Drawbacks to defeat:

- The usability for a production environment.
- A general implementation at standard grid scenario.

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What is going to be the aim?

**To implement a grid approach version of SPECFEM3D
such an application porting to Science Gateway**

1. To reach a higher number concurrent computational cores than those on cluster or HPC squemes.
2. To be able a friendly production environment.
3. To have a general application at standard grid scenario.