

FEniCS Course

Overview

Contributors

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FENICS
PROJECT

Course outline

- L0** Introduction to FEM
- L1** Introduction to FEniCS
- L2** Static linear PDEs
- L3** Static nonlinear PDEs
- L4** Time-dependent PDEs
- L5** Linear elasticity
- L6** Static hyperelasticity
- L7** Dynamic hyperelasticity
- L8** The Stokes problem
- L9** Incompressible Navier–Stokes

There will be hands-on FEniCS challenges at the end of each lecture so be alert!

Some practicalities

- Web resources
`www.fenicsproject.org`
`www.fenicsproject.org/documentation`
- Backup web resources (June 29 2012)
`folk.uio.no/johannr/fenicsproject/`
`folk.uio.no/johannr/fenicsproject/documentation`
- The FEniCS Project is an umbrella for several software components: you will interact with the main user interface: DOLFIN.
- In particular, we will use the Python interface to DOLFIN (there is also a C++ interface)
- Write your program (`foo.py`) in your favorite text editor, save it and run

```
python foo.py
```

First test

Check that the DOLFIN installation operates normally and that you have the right version (DOLFIN 1.0). Open a Python shell by writing (in a terminal)

```
ipython
```

and then do

```
from dolfin import *  
dolfin.__version__
```

Expected output: '1.0.0'

Supplementary meshes are available under

```
/scratch/fenics/meshes/
```