KafRes - FVCode3D

3D Finite Volume solver for the Darcy problem on fractured porous media

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Contents

Chapter 1

Installation guide

1.1 Prerequisites

- CMake

```
> sudo apt-get install cmake cmake-gui
```

- g++ 4.8

```
> sudo add-apt-repository ppa:ubuntu-toolchain-r/test
> sudo apt-get update
> sudo apt-get install gcc-4.8
> sudo apt-get install g++-4.8
> sudo update-alternatives -install \
/usr/bin/gcc gcc /usr/bin/gcc-4.8 20
> sudo update-alternatives -install \
/usr/bin/g++ g++ /usr/bin/g++-4.8 20
> sudo update-alternatives -config gcc
> sudo update-alternatives -config g++
```

1.2 Compile FVCode3D

Let us call `FVCode3D-source` the directory that contains the source code.

1. Create build directories:

```
> mkdir FVCode3D-build
> cd FVCode3D-build
> mkdir eigen-build
> cd eigen-build
```

2. Compile Eigen library:

```
> cd eigen-build
> cmake FVCode3D-source/eigen
> make
```

3. Compile FVCode3D:

```
> cd FVCode3D-build
> cmake FVCode3D-source
> make
```

To generate the documentation launch

```
> make doc
```

1.3 View results

To show the results it is possible to use Paraview. To install it:

```
> sudo apt-get install paraview
```