`mpm_3d` Documentation

Version 3.0

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November 2018

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Chapter 1

Installation

1.1 Downloading the Code

mpm_3d is maintained in a git repository here: http://jabroni.mit.edu/gitlab/asbaumgarten/mpm_3d.git. After setting up a git account at http://jabroni.mit.edu and following the instructions to add your SSH key http://jabroni.mit.edu/gitlab/help/gitlab-basics/README.md, you can clone the git repo on the command line:

```
$ git clone git@jabroni.mit.edu:asbaumgarten/mpm_3d.git
```

1.2 Dependencies

mpm_3d is built with CMake 3.2.2 using gcc 5.2.1, though earlier versions may be supported. mpm_3d also requires the Eigen linear algebra library for C++. CMake and Eigen can be installed on linux using the following commands:

```
$ sudo apt-get install cmake
$ sude apt-get install libeigen3-dev
```

If Eigen is installed somewhere other than /usr/include/eigen3, you will need to edit the CMakeLists.txt file in the main project folder. In particular, you will need to add:

```
include_directories(PATH-TO-EIGEN3)
```

1.3 Building the Code

`mpm_3d` can be built from the command line using CMake. After cloning the git repository, navigate to the main project directory and make a build directory:

```
$ cd mpm_v3
$ mkdir build
```

To build the code, simply call `cmake` from the build directory, then `make`:

```
$ cd build
$ cmake ..
$ make
```

If all goes according to plan, `mpm_3d` should now be installed!