Installing Hdef

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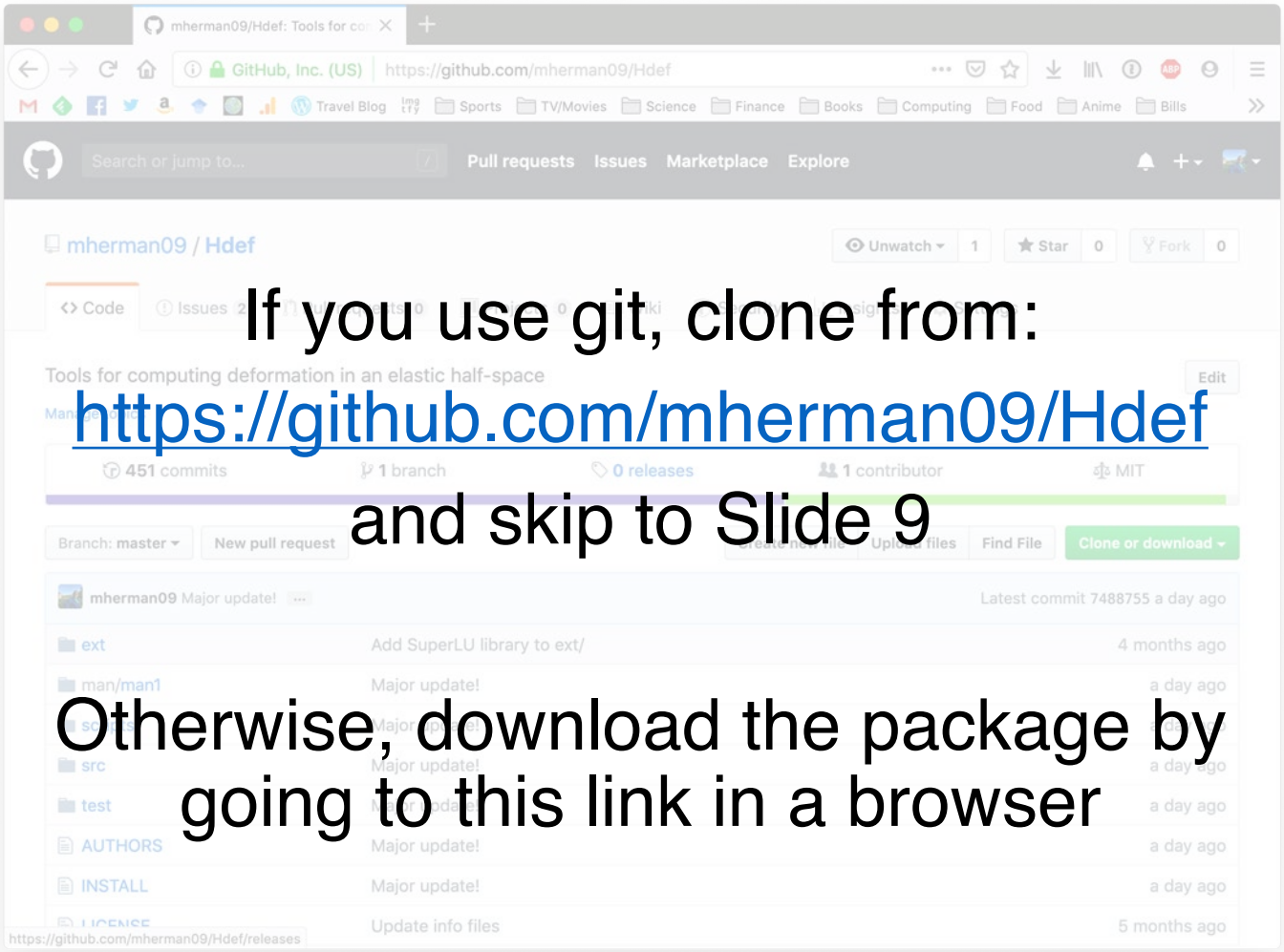
Last updated

28 April 2021

Requirements

- Unix-style operating system: Mac OS, Linux, or WSL
- GCC and Gfortran compilers (I cannot guarantee the software will work with other compilers)
- LAPACK is required for some (not all) programs; for LAPACK installation instructions, see the *Installing LAPACK* tutorial
- CMake

Downloading & Installing



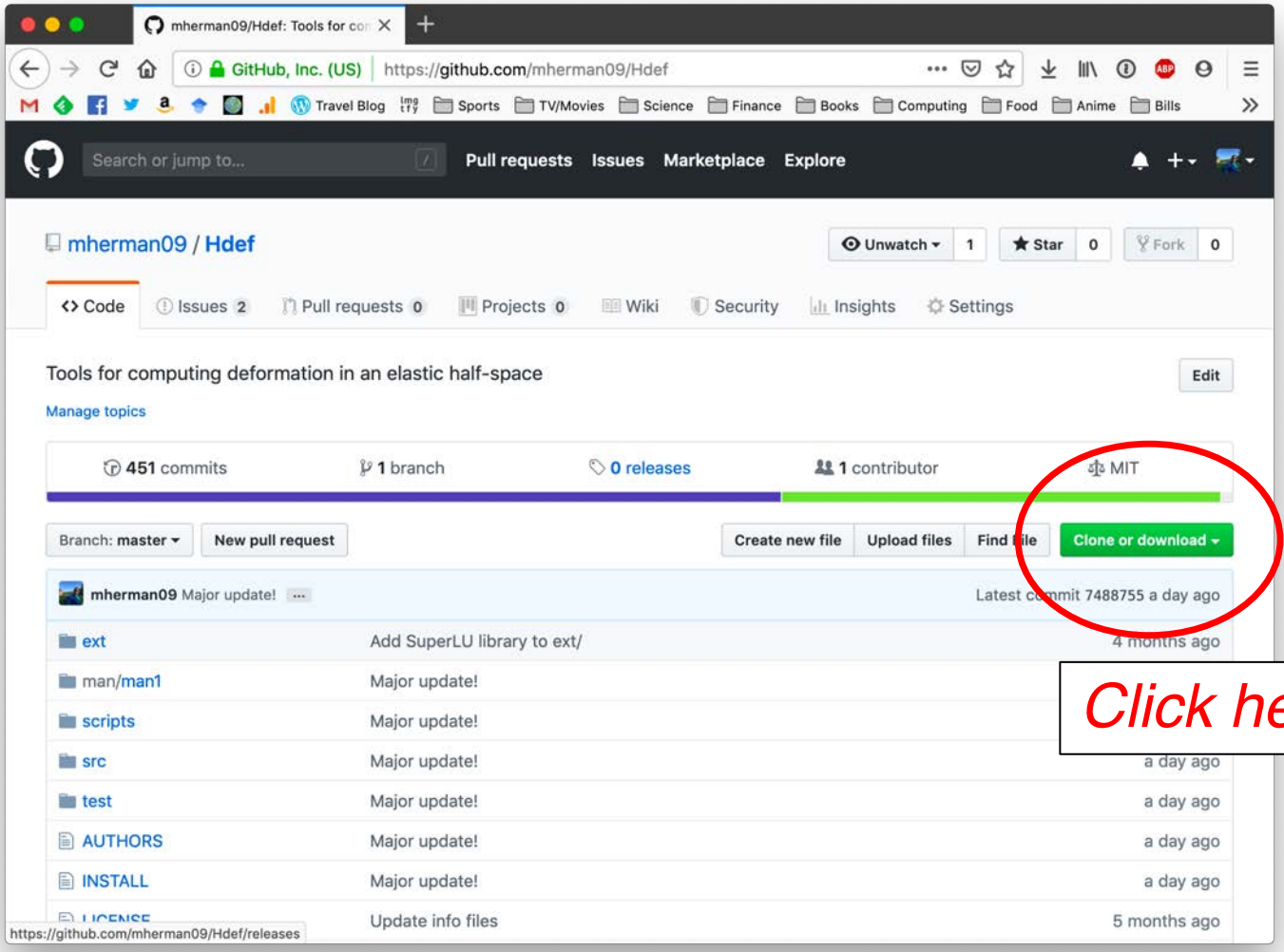
If you use git, clone from:

https://github.com/mherman09/Hdef

and skip to Slide 9

Otherwise, download the package by going to this link in a browser

Downloading & Installing



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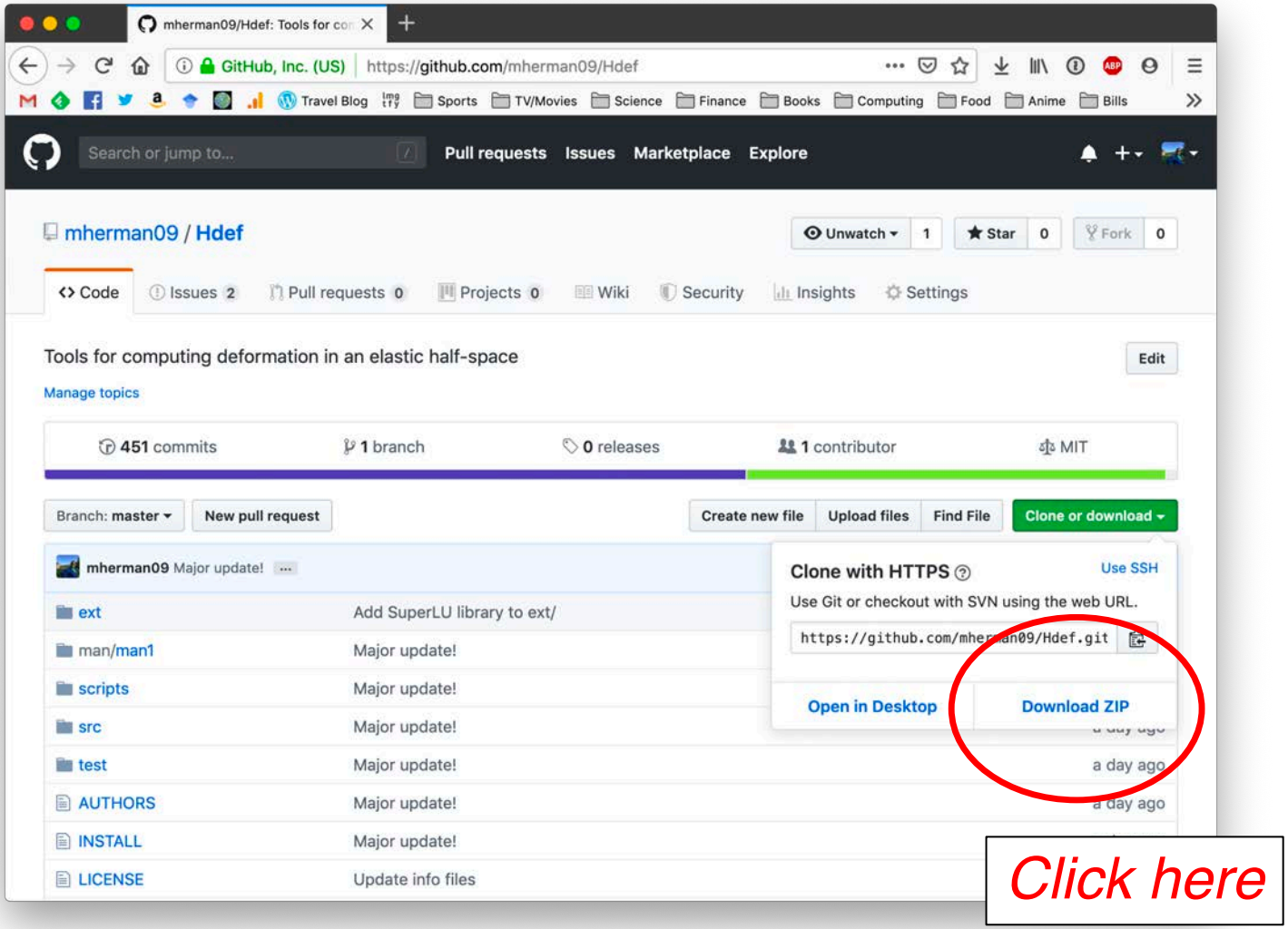

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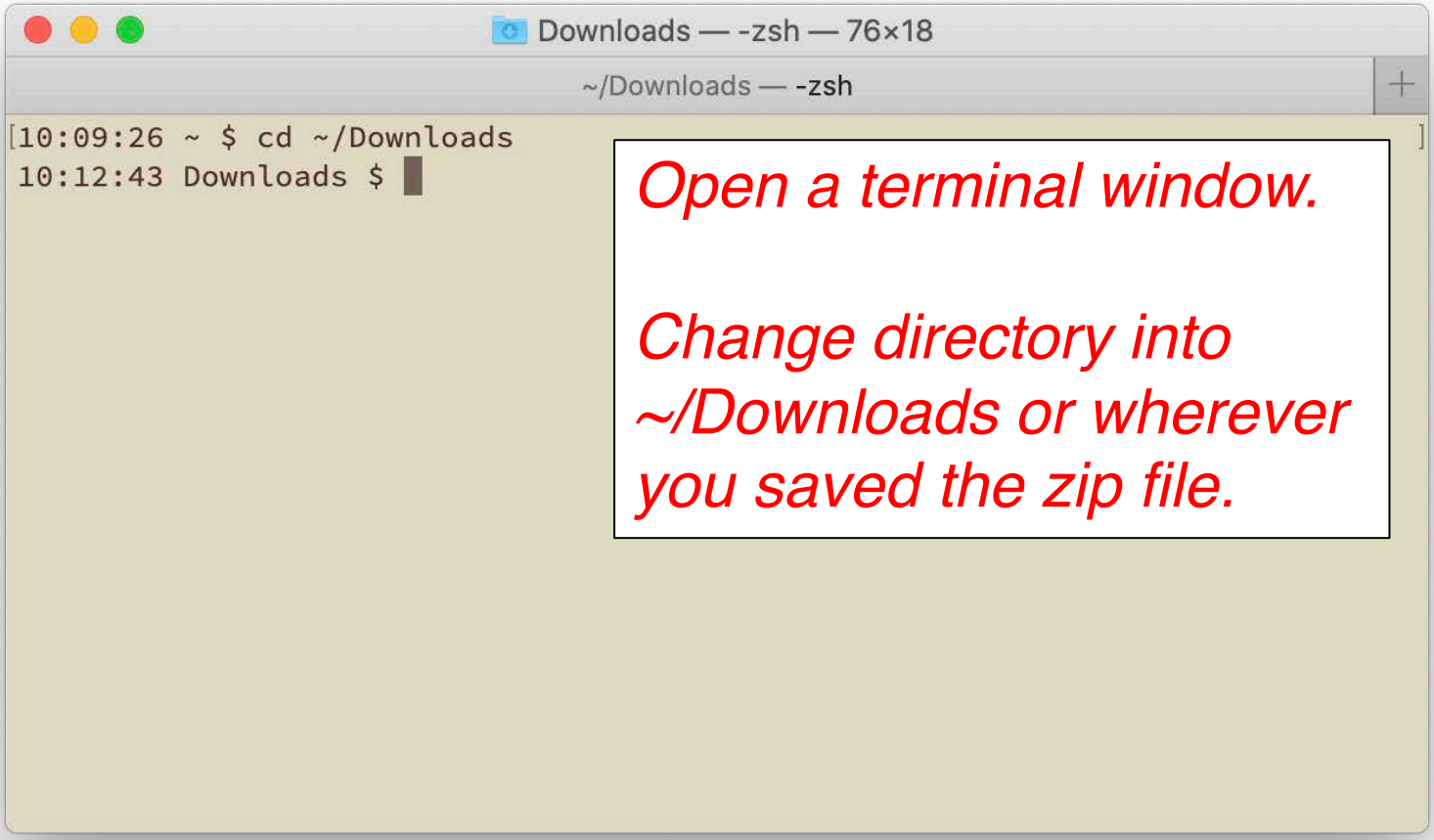

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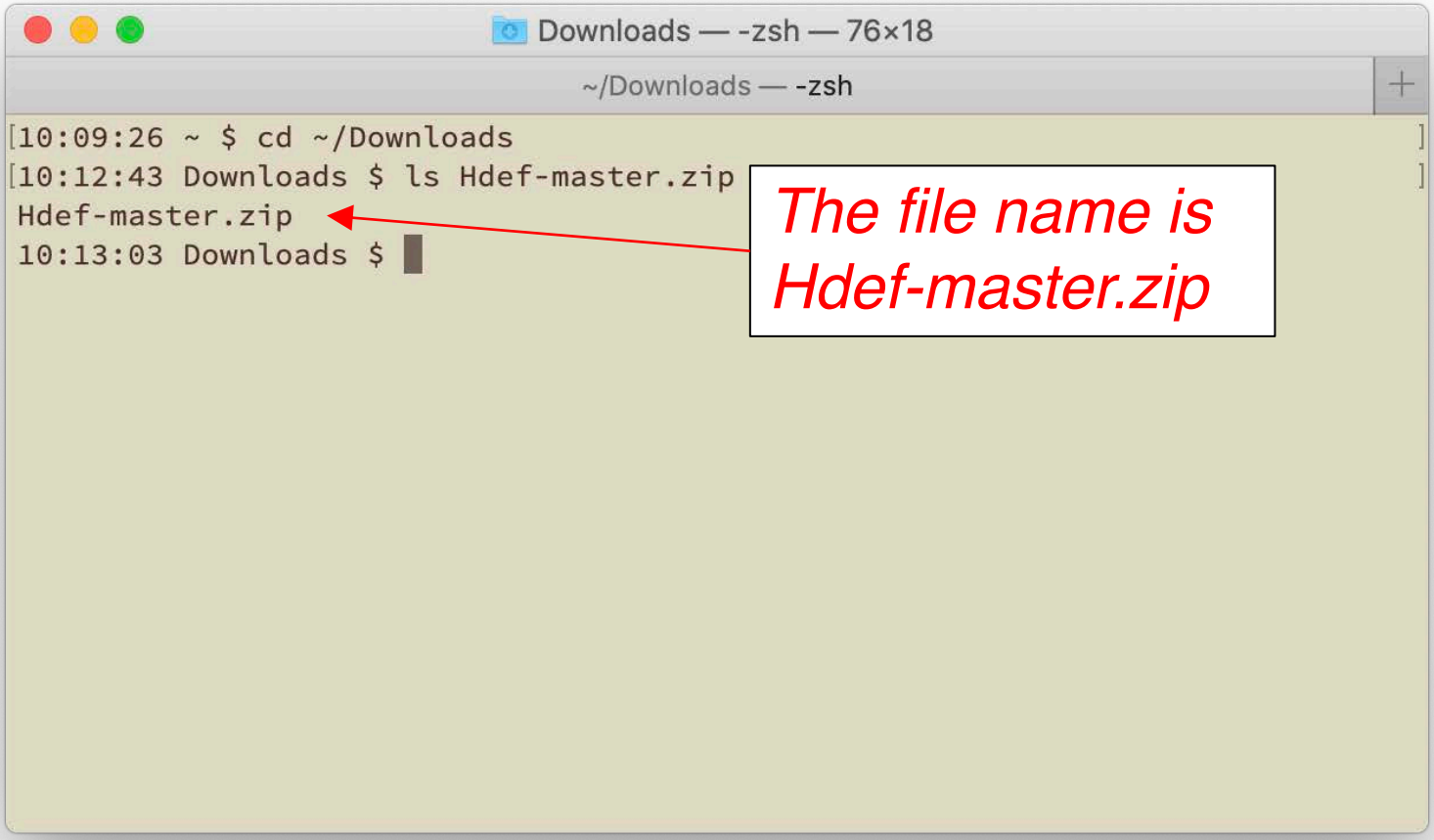

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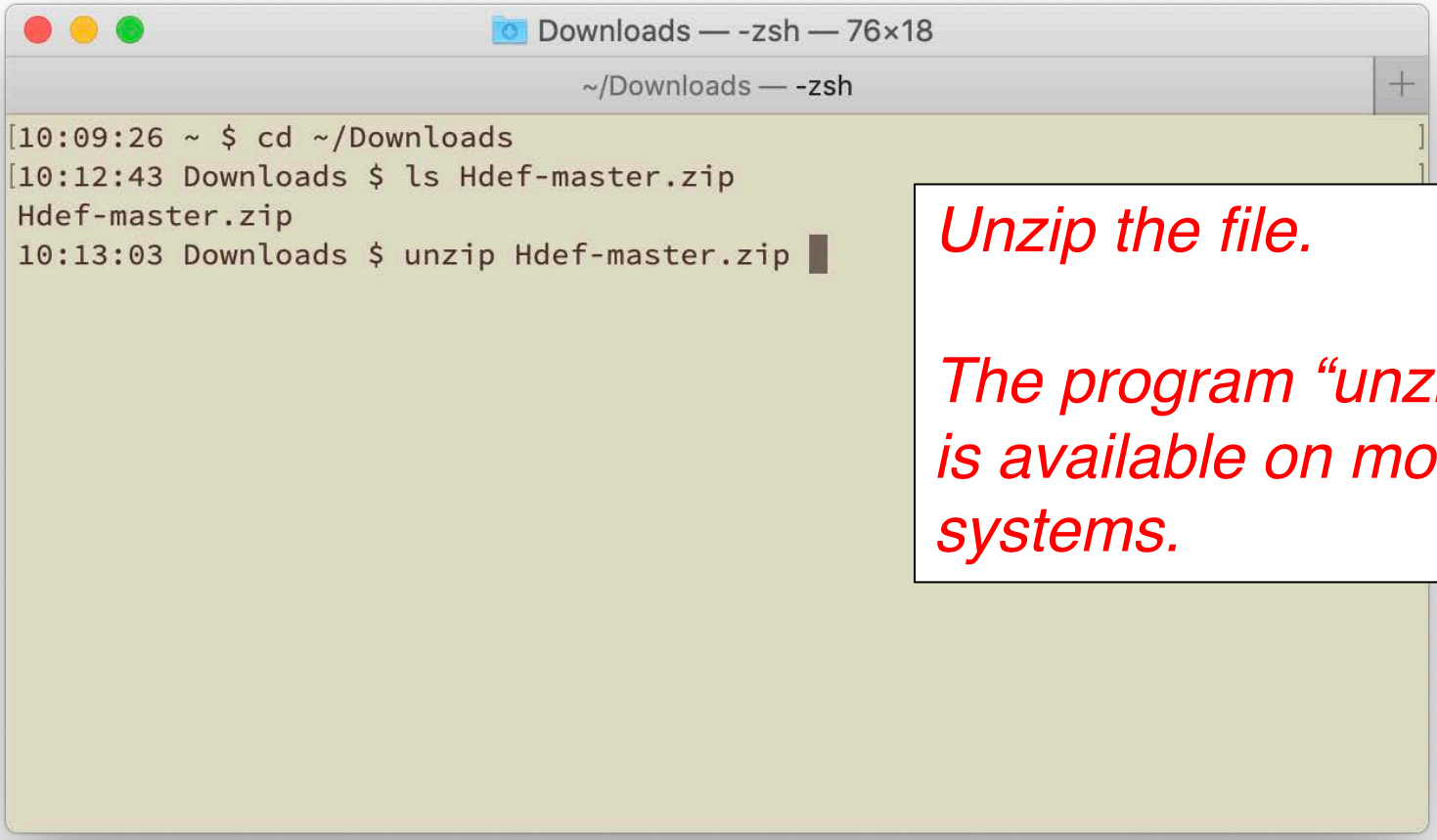

Unzip the file.

The program "unzip" is available on most systems.

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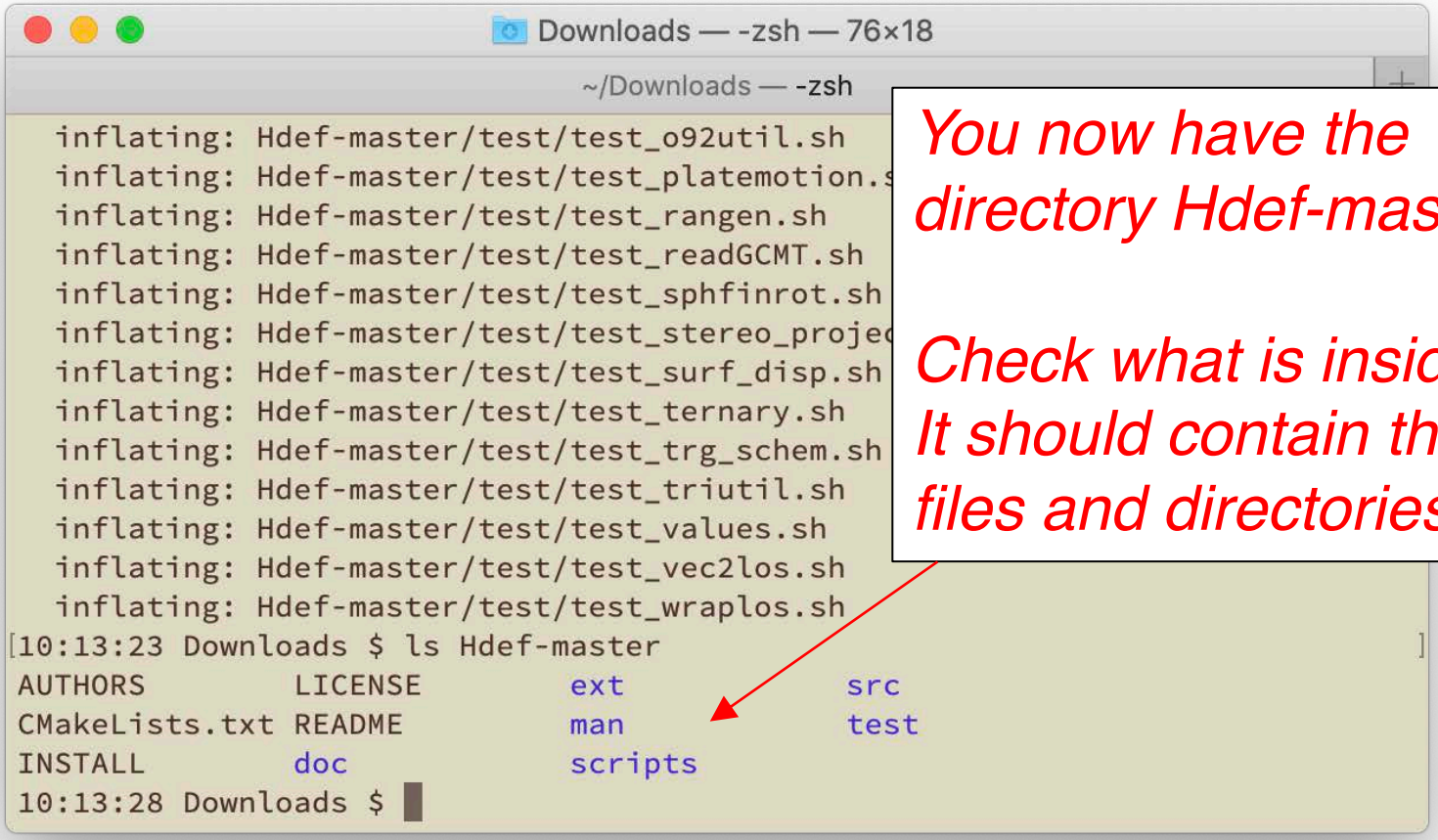
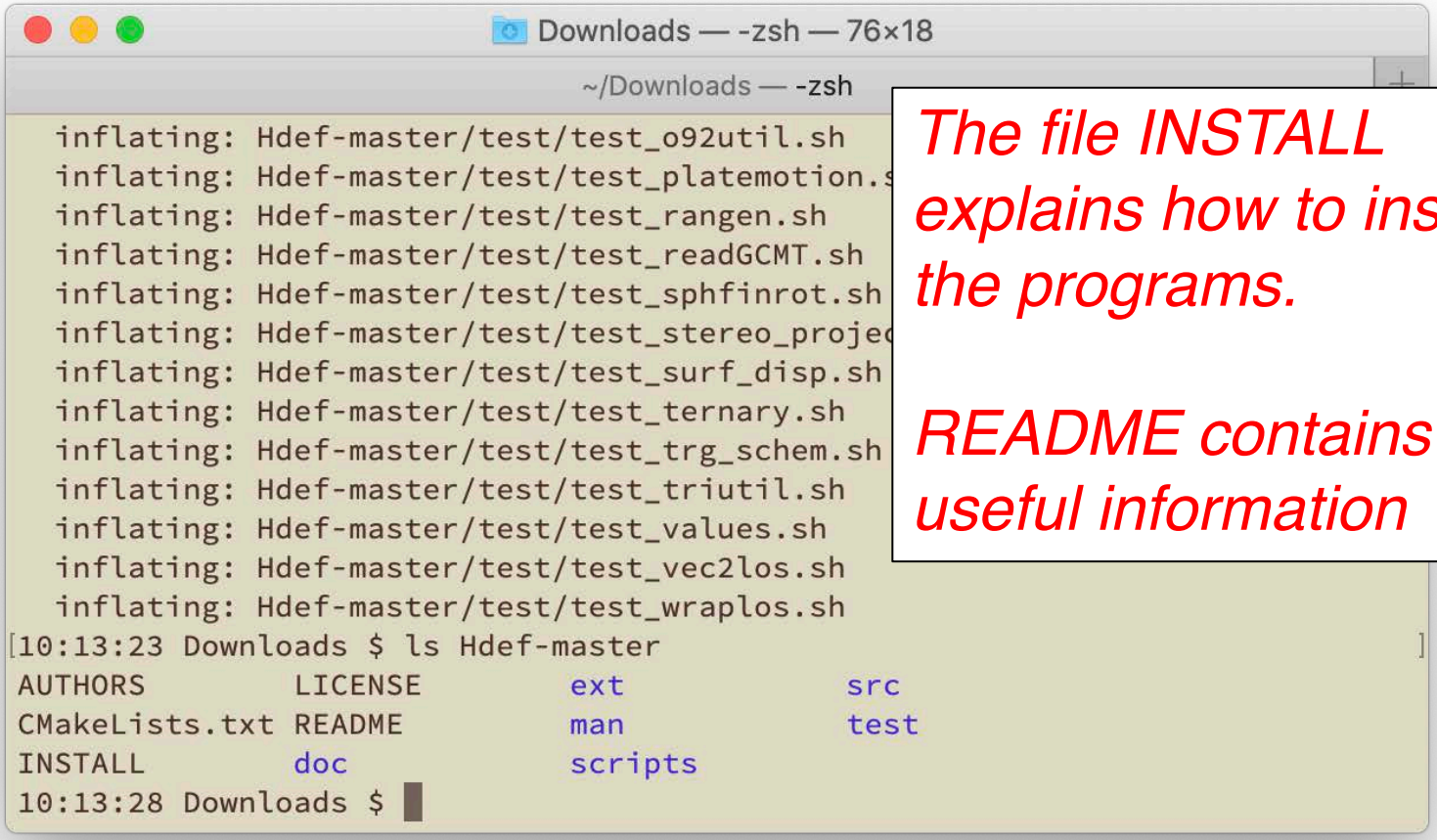


If you cloned the Github repository, start from here

Downloading & Installing



The file INSTALL explains how to install the programs.

README contains other useful information

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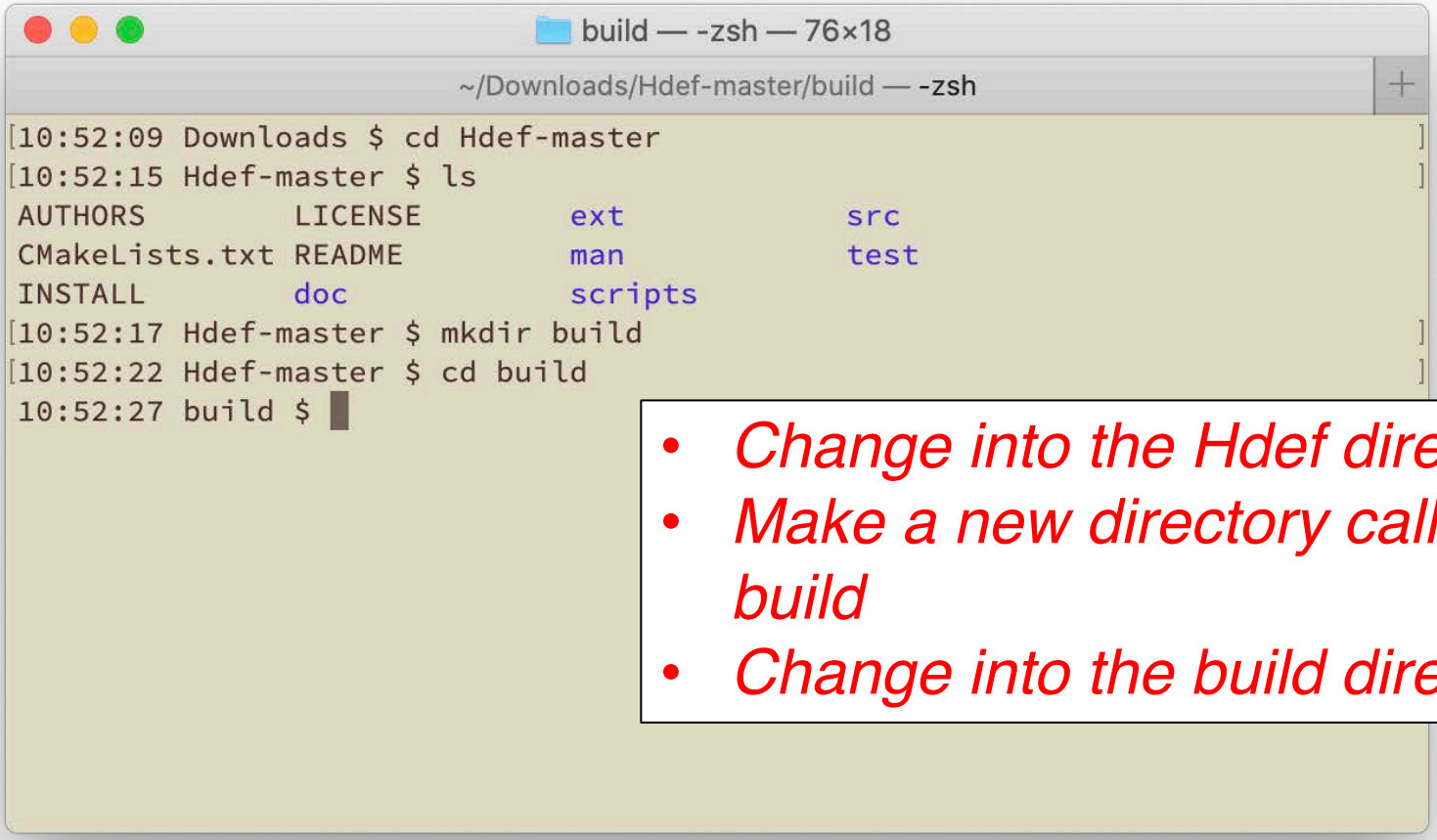

- *Change into the Hdef directory*
- *Make a new directory called build*
- *Change into the build directory*

LAPACK in Hdef

- At this point, you need to decide whether you want to install Hdef with the linear algebra library LAPACK or not
- The LAPACK functions are used in fitting curves and inversions

If you want to use LAPACK functionality, stop this tutorial now and go install LAPACK.

If you need help with this, check out the Installing LAPACK instructions

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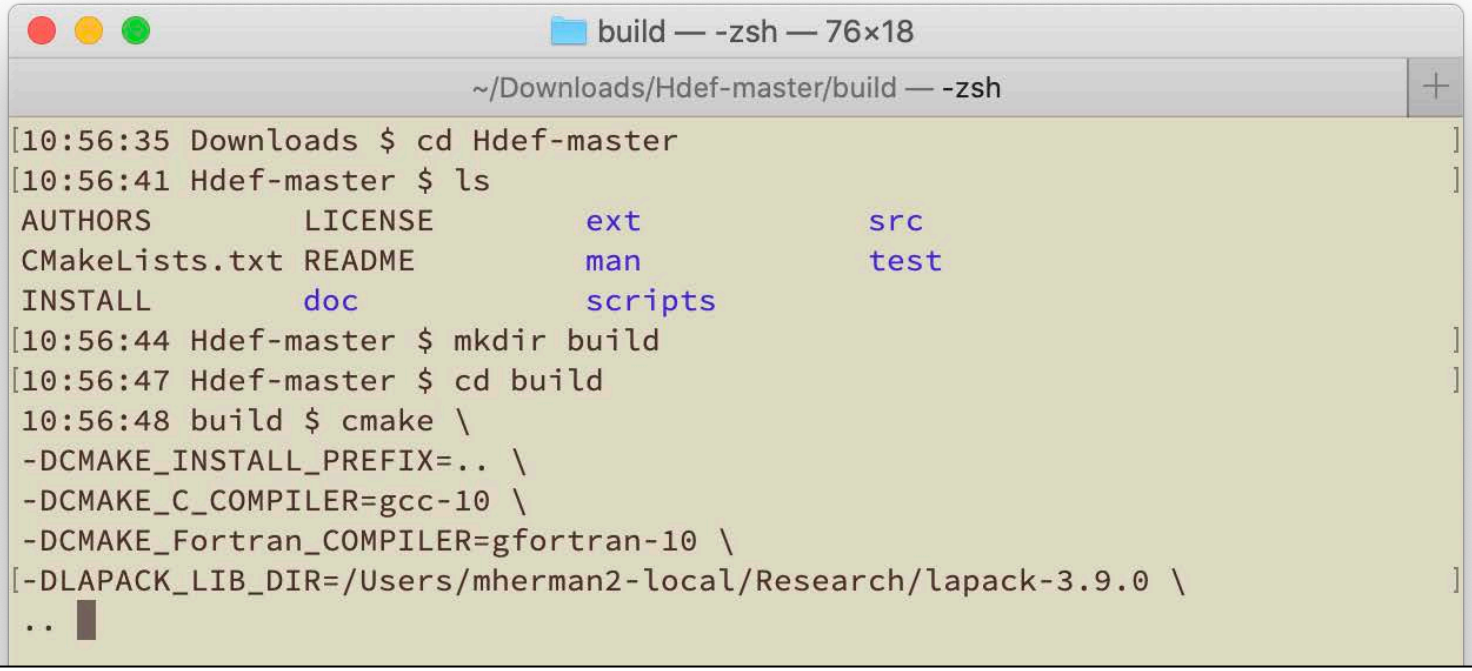

From the build directory, run CMake with the flags shown here

Note: you can put all these flags on one line. I have put the flags on separate lines (with "\" at the end of each line) so you can read them more easily

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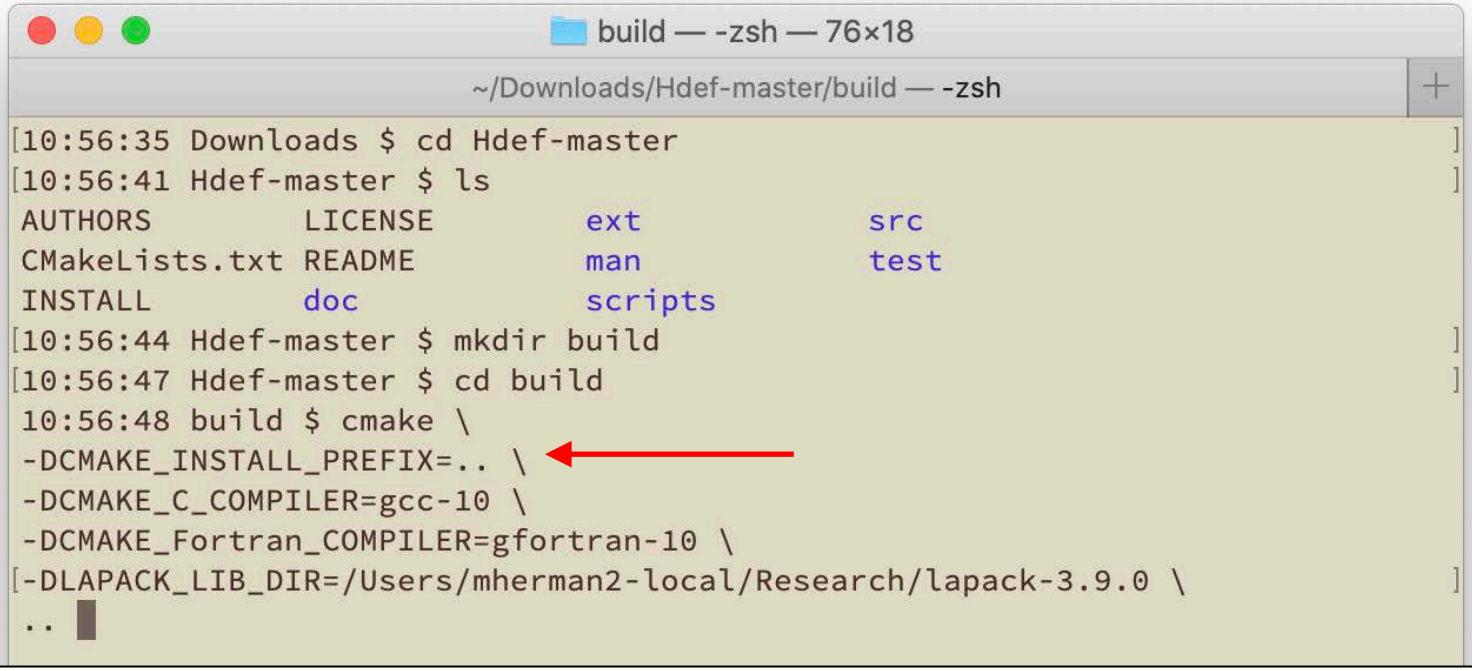

-DCMAKE_INSTALL_PREFIX: the location to install Hdef after it is built (I usually put everything in the main Hdef directory, hence ".." but you can choose a different installation directory if you organize your system differently)

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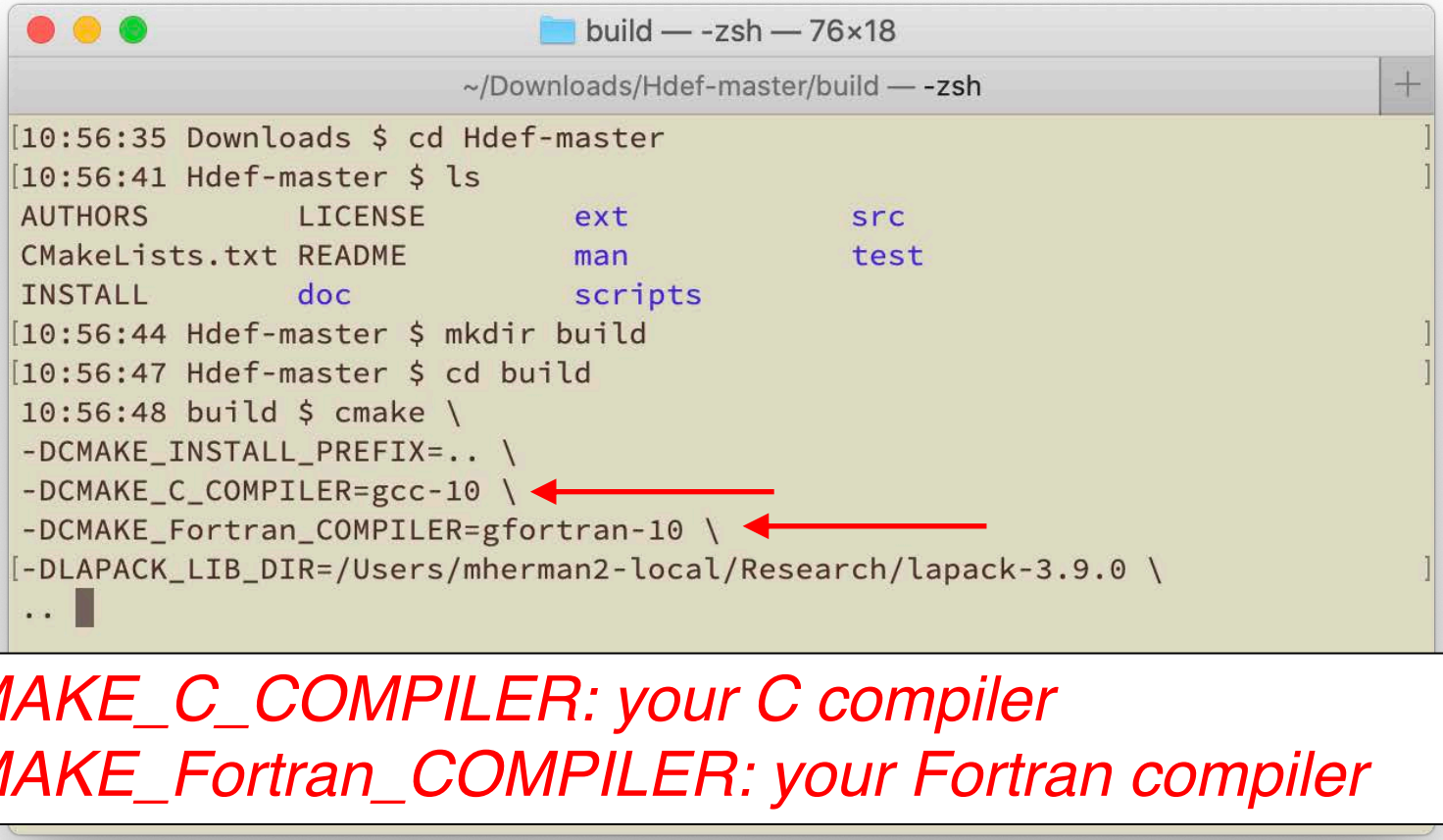

-DCMAKE_C_COMPILER: your C compiler
-DCMAKE_Fortran_COMPILER: your Fortran compiler

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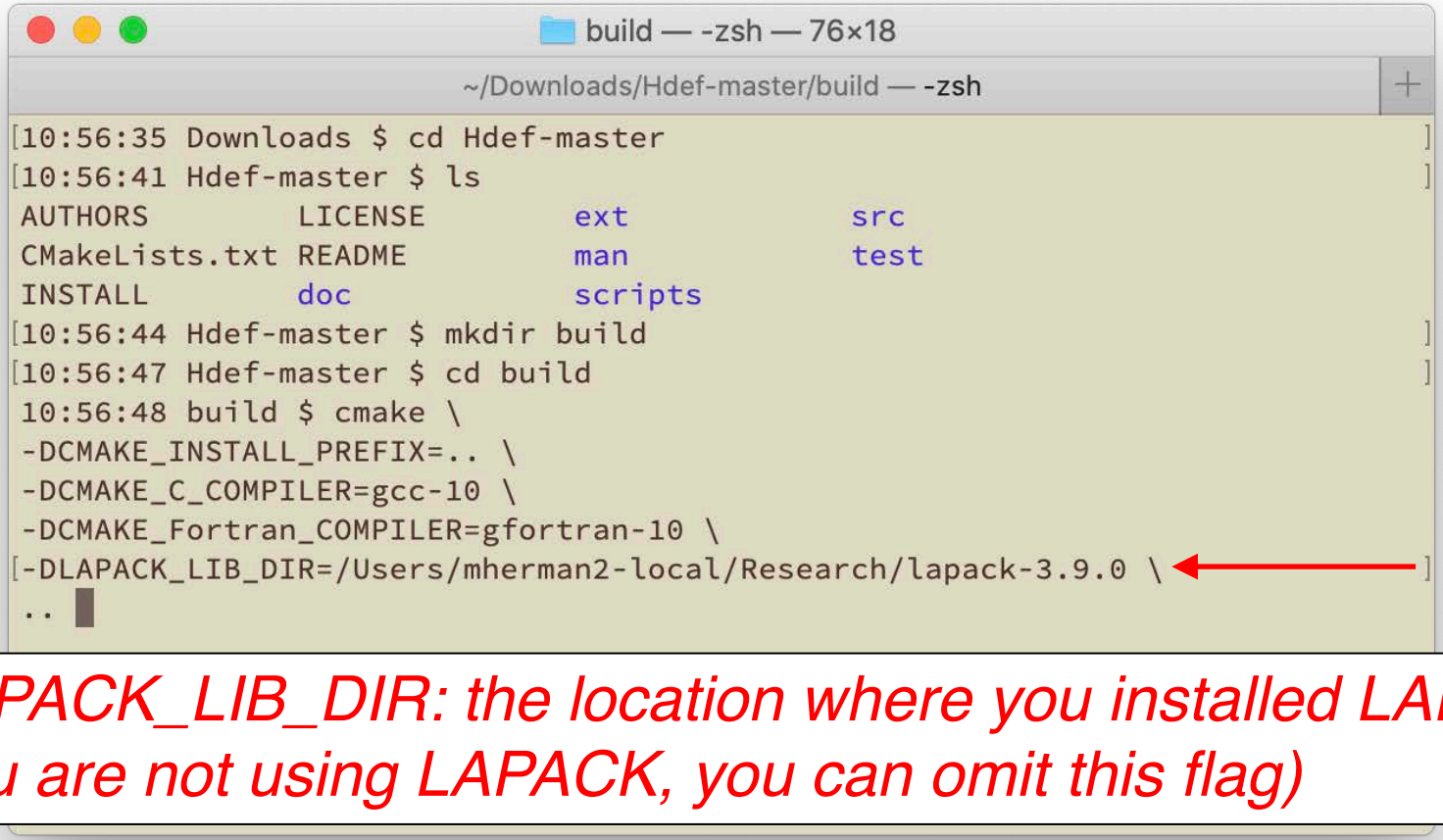

-DLAPACK_LIB_DIR: the location where you installed LAPACK (if you are not using LAPACK, you can omit this flag)

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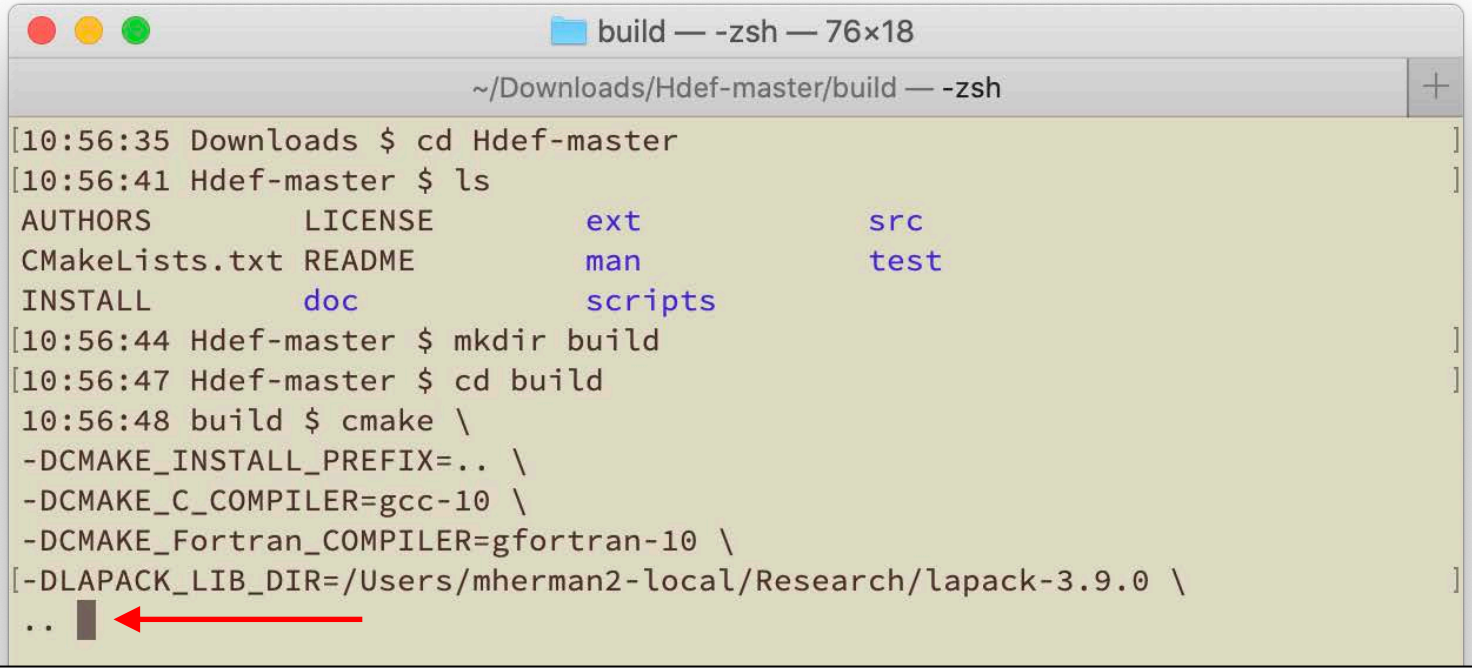

Do not forget the ".." at the end of the argument list!

This tells CMake where to find the instructions for configuring and building Hdef

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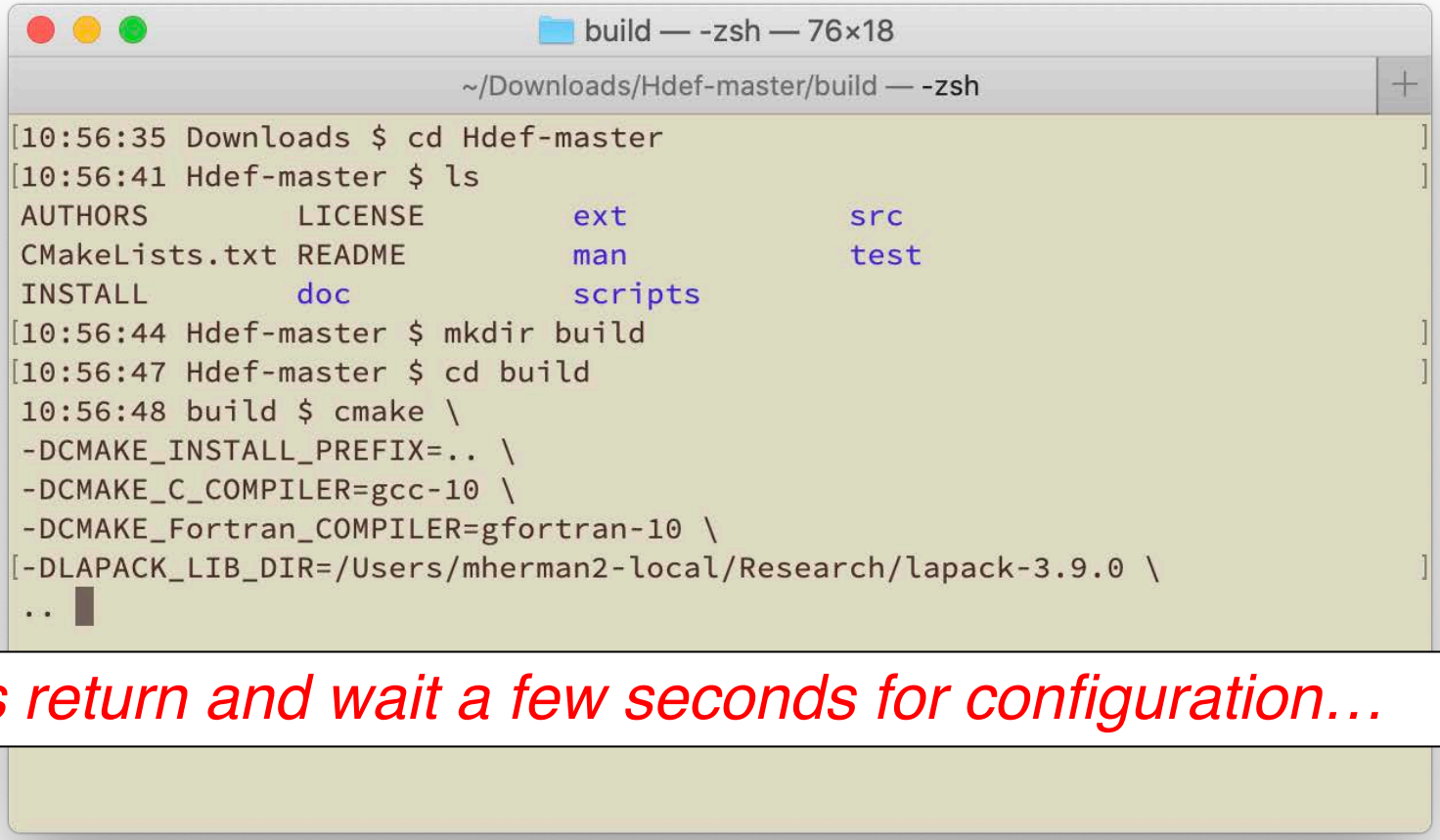

Press return and wait a few seconds for configuration…

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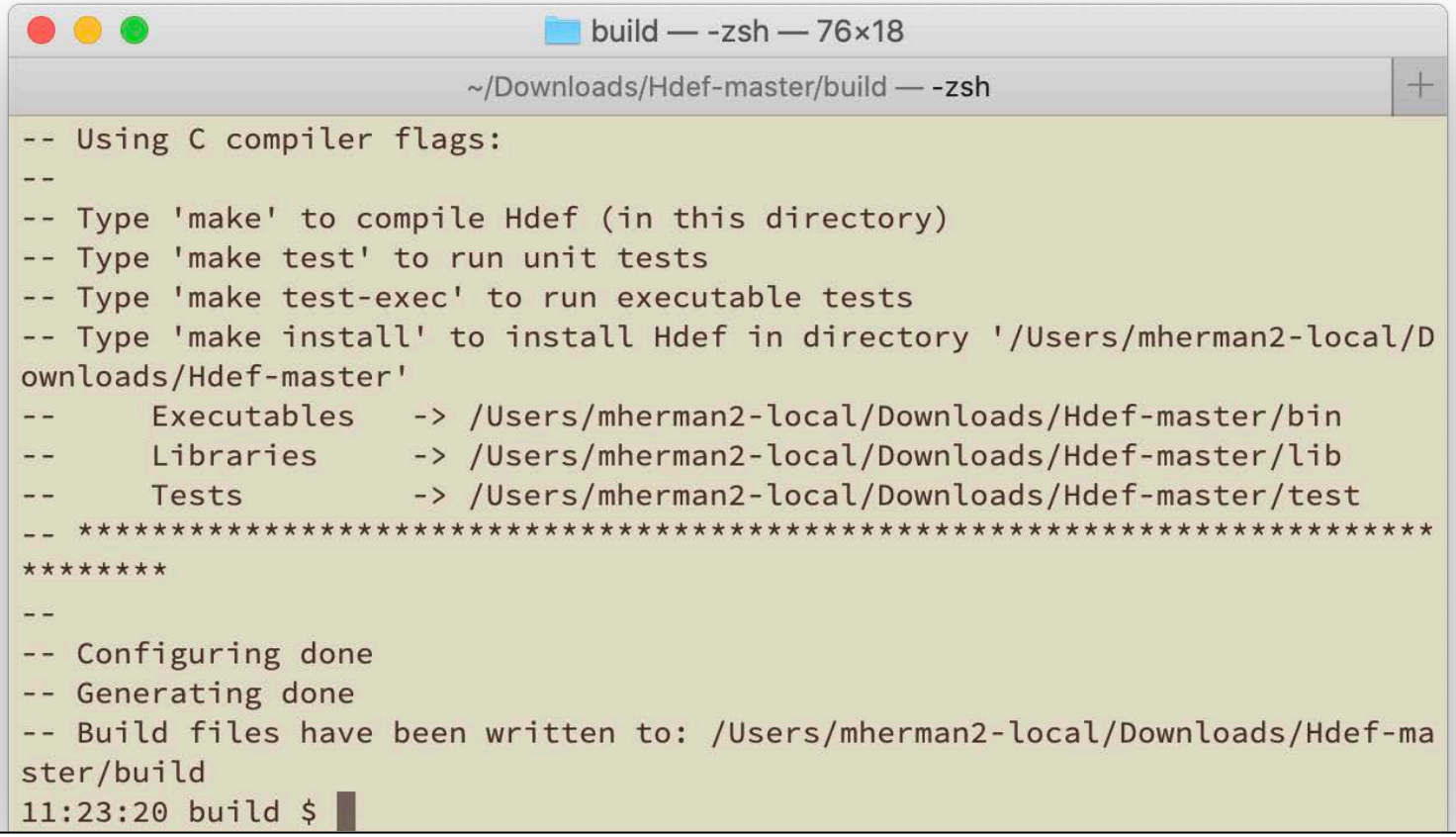

At the end of configuration, information is provided for how to build Hdef and where files will be placed. If anything is wrong, run CMake again with the correct options.

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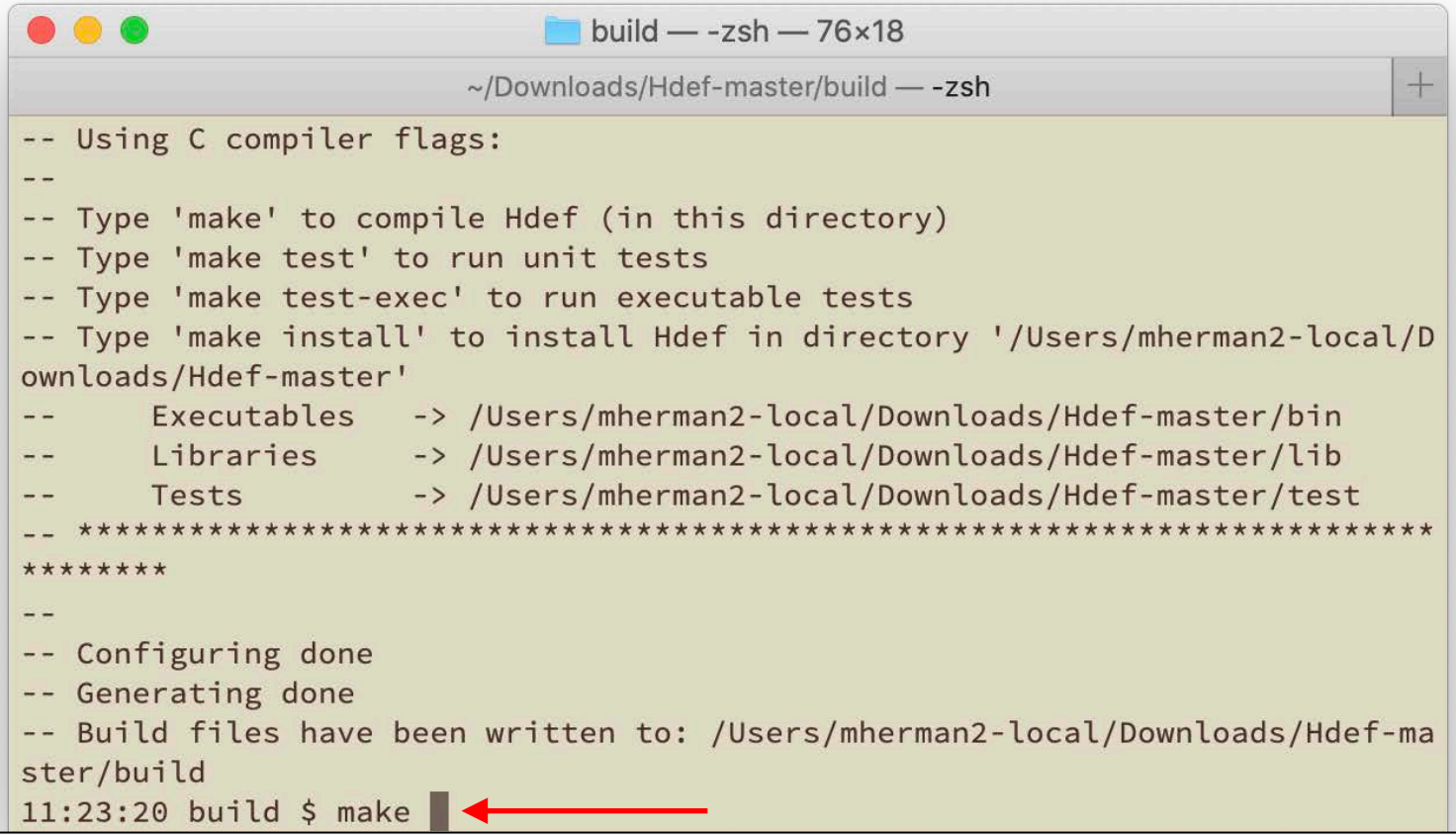

Type `make` *to build Hdef…this takes a few seconds*

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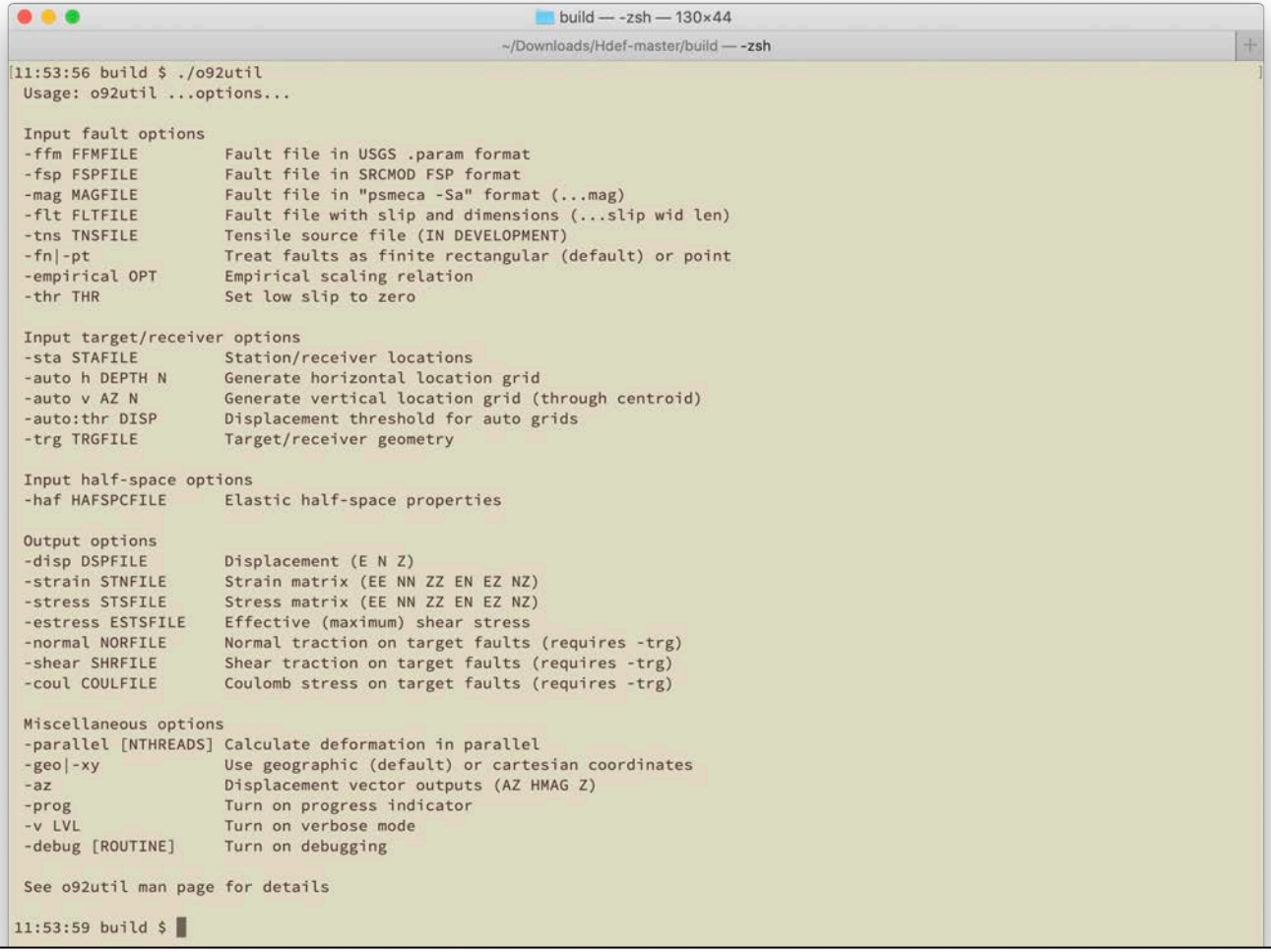

If there are no errors, Hdef has been built. You can check this by typing `./o92util` *– if the usage statement prints, then the program has been compiled in the build directory*

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- Hdef has been built, so you could stop here!

- To **test** the programs, type `make test`. If Hdef is built correctly, all tests should pass. This goes quickly, so I highly recommend testing!
- To **install** the programs in the directory you indicated when running CMake, then type `make install`

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- Last but not least, you need to tell your computer where to find the installed programs by adding the Hdef directory (e.g., `/path/to/Hdef/bin`) to your `PATH` environment variable
- The syntax depends on your shell (type "`echo $SHELL`" to see which shell you are using):
  - Bash: add the following line to .bashrc:
    - `export PATH=$PATH:/path/to/Hdef/bin`
  - Zsh: add the following line to .zshrc:
    - `export PATH=$PATH:/path/to/Hdef/bin`
  - Csh: add the following line to .cshrc:
    - `setenv PATH $PATH:/path/to/Hdef/bin`

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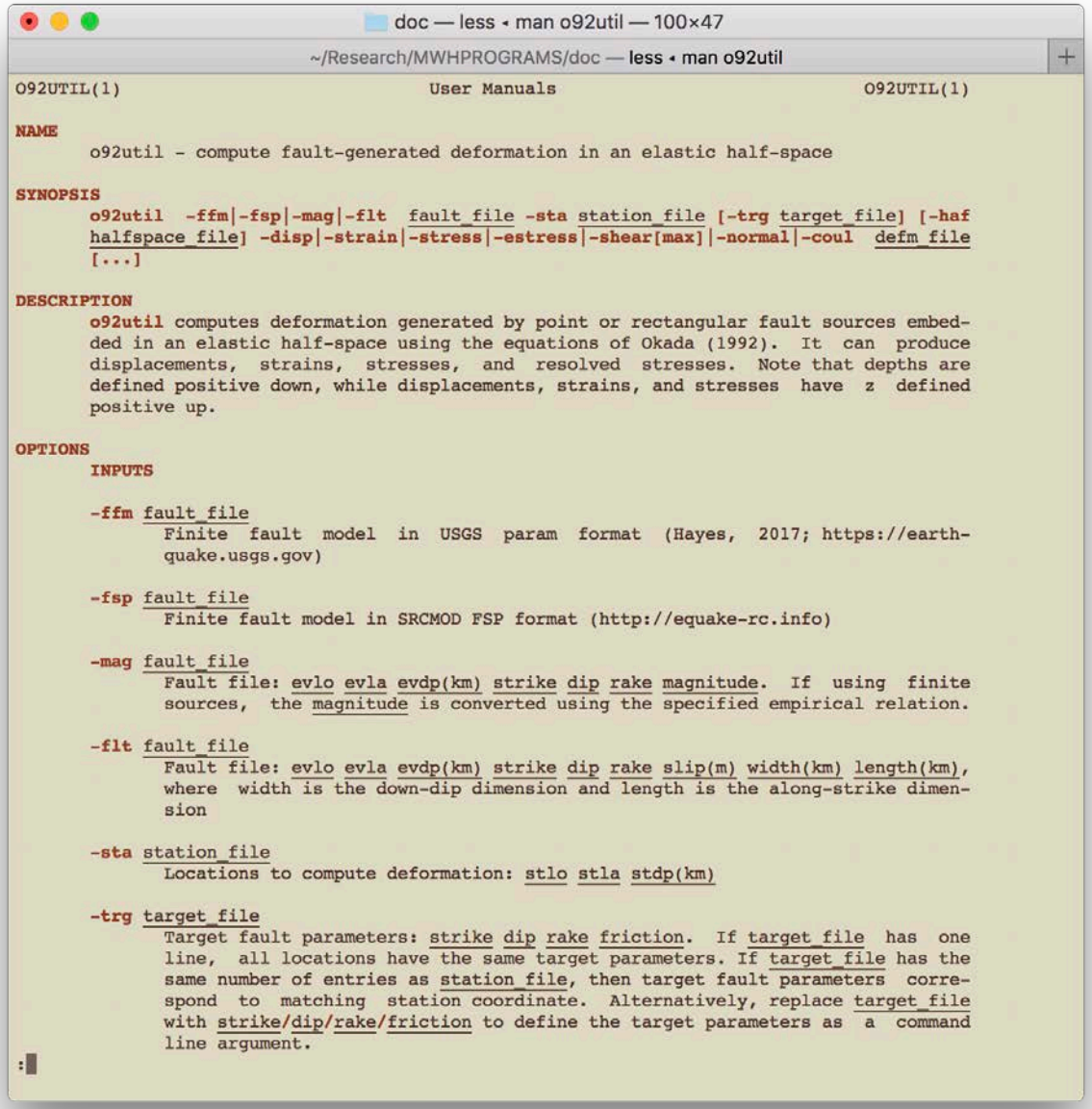

There are man pages for several of the tools. These may be particularly useful for the larger programs with lots of options. These are in the directory:

Hdef-master/man

Add these to the MANPATH variable in your .bashrc, .zshrc, .cshrc, etc.