TauDEM Mac Instructions
Developed by graduate student Jedidiah Dale for the course CE397 Spatial Hydrology at UT Austin; November 5, 2019

Disclaimer: I have very limited Mac experience so a number of steps may be shoehorning Linux conventions where they don't belong. In particular someone who knows how OSX deals with path variables could clean up the final steps to make the installation persistent.

Download the latest TauDEM Source Repository from github.

https://github.com/dtarb/TauDEM/archive/Develop.zip

Extract Zip file it to a convenient location. (e.g. /Users/$USERNAME/Documents/TauDEM/TauDEM-Develop)

Now we need to compile local versions of MPI & GDAL for the compilation of TauDem
First make a folder called TauDEMDependencies somewhere sensible

(e.g. /Users/USERNAME/Documents/TauDEM/TauDEMDependencies)

The TauDEM folder contains two scripts GDAL.sh & MPICH2.sh . These were written for linux but with some modifications can be made to run on OSX.

The scripts uses the 'wget' utility to download source code for MPI & GDAL. OSX does not come with wget, you could try installing wget but we can also change the code to use 'curl' instead.

MPI

Edit the file MPICH2.sh

Replace the line starting with 'wget' to:

"curl http://www.mpich.org/static/downloads/3.2.1/mpich-3.2.1.tar.gz --output mpich-3.2.1.tar.gz"

(without the quotes)
Now we need to fix the file paths to point to our TauDEMDependencies folder

On the line that starts with

"./configure --prefix=/Users/USERNAME/Documents/TauDEM/TauDEMDependencies/mpich/mpich-install 2>&1 | tee c.txt"

(or wherever else you put the dependencies folder)

Similarly edit the last line to something like

"PATH=/Users/USERNAME/Documents/TauDEM/TauDEMDependencies/mpich/mpich-install/bin:$PATH ; export PATH"

Now to compile & install MPI.

Open a terminal & navigate to your TauDEM-Develop folder (e.g. 'cd /Users/$USERNAME/Documents/TauDEM/TauDEM-Develop')

type 'bash ./MPICH2.sh' (theres a chance this will have to be run as root depending on your setup, if it fails initally try this by adding 'sudo' before the command and entering your password when prompted)

This will take awhile, but hopefully at the end it compiles without any problems.
You can try it by typing mpiexec and seeing if it finds command

GDAL (WARNING this shouldnt mess with your existing GDAL, but I have not tested it significantly)

edit the file GDAL.sh

mostly similar changes.

Replace 'wget' line with

'curl http://download.osgeo.org/gdal/2.3.0/gdal230.zip --output gdal230.zip'

and ./configure line with

'./configure --prefix=/Users/USERNAME/Documents/TauDEM/TauDEMDependencies/gdal'

similarly modify the begining of the three export lines to reflect the path to your TauDEM dependencies folder.

Again from the terminal run 'bash ./GDAL.sh' to execute the script

this will also take awhile and hopefully exit without any errors.

You should now have local versions of both dependencies to compile against
There are two paths to compile TauDEM, one with make and one with cmake.
OSX already has make, but I couldn't get this path to work.

To use the cmake option you first need to install it. If you have Homebrew there are instructions here http://macappstore.org/cmake/. I'm sure there are multiple other paths to install cmake on Mac but havent tested them.

From here we'll just be following the README.
Navigate to '/Users/$USERNAME/Documents/TauDEM/TauDEM-Develop'

execute the following commands

cd src && mkdir build && cd build
cmake ..
make && make install (this line will likely need to be run with 'sudo')

IF all things go well you should have TauDems utilites installed to '/usr/local/taudem'

The main trip ups will likely be with path variables depending on your OSX version (I know they switched the default shell to zsh recently). If that’s the case I'd recommend entering a bash session in the terminal at the beginning of the whole installation to keep it consistent (just 'bash' and ENTER).