Install TauDEM

Installing TauDEM actually means installing 3 tools

- GDAL that TauDEM uses under the hood;
- MPI that R will call to launch TauDEM;
- TauDEM itself.

No matter your operating system, take notes of the steps you follow. This way, if anything goes wrong, you will be able to open an informative bug report and get help more easily.

Windows

You're in luck! The TauDEM Windows installer will install all three tools at once! Refer to https://hydrology.usu.edu/taudem/taudem5/downloads.html.

Finalize your installation

Once you are done,

Register TauDEM in R

Add TauDEM to the PATH

- The Windows installer might have done this automatically.
- For other operating systems (macOS, Linux) use your usual method to add a directory to the PATH.

OR add an environmental variable

Add an R environmental variable called `TAUDEM_PATH` that points to the location where the TauDEM executables can be found (on Windows it might be `C:\Program Files\TauDEM`, on Ubuntu `/usr/local/taudem`).

For instance on Ubuntu it could be adding this line in `.Renviron` (see `usethis::edit_r_environ()`) and then re-starting R:

```
TAUDEM_PATH='/usr/local/taudem'
```

or, for just the session, running this line of R code:

```
Sys.setenv(TAUDEM_PATH='/usr/local/taudem')
```

Check your installation

Run `traudem::taudem_sitrep()` and read its output carefully. Pay attention to any error that might indicate part of the installation was not successful.

If all is well (no error, only normal output from TauDEM), congratulations! Your system is ready to apply

TauDEM to your own data.

Linux and macOS

GDAL

Do you need to install GDAL? In a terminal try `gdalinfo --version`, if it fails `gdal-config --version`. If it works and return something you do not need to install GDAL unless you want a newer version. You might have installed GDAL in the past for, say, using the sf R package.

If you need to, install GDAL using the official GDAL docs (or refer to TauDEM README for further suggestions).

> On macOS this might be as easy as brew install gdal.

MPI

First try running `mpiexec --version` in a terminal. If it works and return something you do not need to install MPI unless you want a newer version.

If you need to, install MPI using the official MPI docs (or refer to TauDEM README for further suggestions).

> On macOS this might be as easy as brew install mpich.

TauDEM

First you need to obtain TauDEM source for GitHub https://github.com/dtarb/TauDEM/. If you are at ease with this, you can clone the repository. If not, find the green button that allows you to clone, open (with GitHub CLI) or download, and download the ZIP version.

We recommend using CMake because that is what we did but TauDEM README for further suggestions) also has a method using Make. Therefore,

- install CMake or Make (check it's not already installed);
- follow TauDEM README for further suggestions) for either CMake or Make depending on what you decided to use.

> If the installation shows errors, try using https://github.com/maelle/TauDEM/tree/more-mpi-deprecations instead.

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