TECHNICAL SHEET FOR INSTALLING LMDZ1D
How to install and use 1D version of LMDZ model

This note summarizes the main commands you need to know to install LMDZ1D and various commands to run it.

1- Installation:
Retrieve the install_lmdz.sh script available on the network and run it blind (after having changed the rights to make it executable):

    wget http://www.lmd.jussieu.fr/~lmdz/pub/install_lmdz.sh
    chmod +x install_lmdz.sh
    ./install_lmdz.sh -SCM

The script retrieves the fortran sources of the model (valid for both 3D and 1D versions) on your machine and compiles them.
By default, the model is installed on ~LMDZ[$version] where $version is the version name like trunk or 20201109.trunk or in NAME if you use this option (./install_lmdz.sh -name NAME).
With -SCM option, it also installs a 1D version of the model and runs it automatically on some predefined 1D cases (./install_lmdz.sh -name NAME -SCM).

The model is stored under ~LMDZ[$version]/1D and results of first simulations under ~LMDZ[$version]/1D/ OUTPUT/* .
If you've already installed the model for example on ~/LMDZ[$version], but without option -SCM so the 1D model is not present, you can install only the 1D model :

    cd ~/LMDZ[$version]
    wget http://www.lmd.jussieu.fr/~lmdz/pub/1D/1D.tar.gz
    tar xvf 1D.tar.gz
    cd 1D
    ./run.sh

2- run.sh command
If you need to work on a specific case or cases that have not been run automatically, you'll have to modify the list of cases « listecas » in the file ~LMDZ[$version]/1D/run.sh writing the name of case(s) you are interesting in :

    listecas= "arm-cu2 bomex" for example.

Then set up these cases by runing ./run.sh
This command will carry out a first series of simulations of reference on each of them as well as minimum automatic diagnostics, the results of which will be stored on ~OUTPUT/*pdf and ~OUTPUT/$case.pdf

3- lmdz1d.e command
If you perform sensitivity tests on a case by, for example, making changes in the files ".def", the easiest way is to stay under ~LMDZ[$version]/1D/EXEC/NPv6.0.xx/$case and to rerun the model as much as necessary with ./lmdz1d.e > listing (> listing allows to store all output prints in the listing file) GOOD TO KNOW !!
If you run the model this way, the modified "*def" files will remain in ~LMDZ[$version]/1D/RESU/NPv6.0.xx/$case. They will be overwritten at the next run of run.sh !
Don't forget to rename the result files at each run (histhf.nc, hourly.nc, as well as ".def" files you've modified and eventually the pdf files that can be created automatically) in order not to "overwrite" the different tests results.

Two ways to do it :
> cp physiq.def physiq.cas1

> cp hourly.nc hcas1.nc
...
or
> mkdir cas1
> cp hourly.nc *def *.pdf cas1/

4- compile
If you need to modify the code (~LMDZ[$version]/modipsl/modeles/LMDZ/libf/phylmd or ~LMDZ[$version]/modipsl/modeles/LMDZ/libf/phylmd/dyn1d), you'll have to recompile the model before executing it.
In ~LMDZ[$version]/1D/RESU/NPv6.0.xx/$case, run ./compile.sh. This script recompiles the model and create a new executable file lmdz1d.e.
You can also rerun ./run.sh : the model will be recompiled and run again.