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This is a simple instruction to use the CReSS model.

CReSS has two versions: one is serial version and the other is parallel version. The former is indicated by “s” in the file name and the latter by “m”. These two versions are totally identical. The result of calculations by these two versions will be completely identical. The only difference of the two versions is necessity of the MPI library for parallel computation. The serial version can be performed without the MPI library on the single processor.

At first, please download the following files from our download page at http://www.rain.hyarc.nagoya-u.ac.jp/~cress/download/ with your ID and password. If you have not have your ID and password, please send e-mail to tsuboki@rain.hyarc.nagoya-u.ac.jp, to request for getting ID and password. From the URL, you can download the following files.

1. CReSS_users_guide_Eng_draft01.pdf draft of user’s guide in English.
2. Hints_for_trouble_recovery_eng.pdf some hints for trouble recovery.
3. cress.guide1.4_jpn.pdf user’s guide in Japanes.
4. cress2.2m.tar.Z all file of CReSS parallel version.
5. cress2.2s.tar.Z all file of CReSS serial version.

The documents are not always updated and please find the readme files in the tar files and refer them. They are always updated and give a proper description.

In order to start to use the CReSS model, please take the following processes. We assume that you use a unix system such as linux or other type of unix system. If you use parallel system, use the cress2.2m.tar.Z. In the following part, we will explain the serial version. The basic usage is totally the same except to specify the number of processing elements.

1. Uncompress tar file:

```
% uncompress -c cress2.2s.tar.Z |tar -xvf -
```

2. Find files

```
% cd CReSS2.2s/
% ls
./              Doc/            Src/            compile.conf
```

../ Form/ User_Mod/ compile.csh*

3. Read documents

% cd Doc

% ls

/ ../ readme.first readme.user.conf

Please read the “readme.first”, then you can find how to compile the source. Then, read “readme.user.conf”. This readme is important to modify the namelist imput.

4. Try a sample.

% vi compile.conf (if necessary)

% compile.csh solver

After you compile the executable of solver.exe, please try a sample.

ls

./ sounding.txt.toyohashi.form

../ user.conf.cats.eye.form

sounding.txt.cats.eye.form user.conf.dry.downburst.form

sounding.txt.dry.downburst.form user.conf.mountain.wave.form

sounding.txt.mountain.wave.form user.conf.toyohashi.form

% cp user.conf.mountain.wave.form ../user.conf

% cp sounding.txt.mountain.wave.form ../test.sounding.txt

The first part of the name of the sounding file “test” is important. All I/O files of the CReSS files are controlled by the name which is find in the user.conf:

```
&runame
  exprim = 'test'
/
```

The prefix of all files is should be the same. In this case, it is “test”.

To run the model, send the following commands.

% /solver.exe < user.conf > & log.solver &

To check the log file,

% tail –f log.solver

The output history dump files will be produced such as,
% ls –l *.bin

```
-rw-r--r--   1 tsuboki  kisho     1866240 038 12:13 test.dmp000000.bin
-rw-r--r--   1 tsuboki  kisho     1866240 038 12:14 test.dmp000600.bin
-rw-r--r--   1 tsuboki  kisho     1866240 038 12:16 test.dmp001200.bin
-rw-r--r--   1 tsuboki  kisho     1866240 038 12:18 test.dmp001800.bin
-rw-r--r--   1 tsuboki  kisho     1866240 038 12:20 test.dmp002400.bin
-rw-r--r--   1 tsuboki  kisho     1866240 038 12:21 test.dmp003000.bin
-rw-r--r--   1 tsuboki  kisho     1866240 038 12:23 test.dmp003600.bin
-rw-r--r--   1 tsuboki  kisho     1866240 038 12:25 test.dmp004200.bin
-rw-r--r--   1 tsuboki  kisho     1866240 038 12:27 test.dmp004800.bin
-rw-r--r--   1 tsuboki  kisho     1866240 038 12:29 test.dmp005400.bin
-rw-r--r--   1 tsuboki  kisho     1866240 038 12:30 test.dmp006000.bin
-rw-r--r--   1 tsuboki  kisho     1866240 038 12:32 test.dmp006600.bin
-rw-r--r--   1 tsuboki  kisho        4320 038 12:13 test.geography.bin
```

5. Display the result

The output history dump files are displayed by the application soft wear “grads”.
You can find it in the URL at
http://www.iges.org/grads/grads.html

The Grads need control file. In the above case, the ctl file will be

```
%cat dmp.ctl
DSET ^test.dmp%y400.bin
OPTIONS template
UNDEF -1.E35
XDEF   360 LINEAR   0.200      0.400
```

```
YDEF      1 LINEAR   0.200      0.400
ZDEF    144 LINEAR   0.062.5    0.125
TDEF    100 LINEAR 00Z01jan0000 6yr
VARS    9
ub    144    99    base state x components of velocity [m/s].
u     144    99    x components of velocity [m/s].
vb    144    99    base state y components of velocity [m/s].
v     144    99    y components of velocity [m/s].
w     144    99    z components of velocity [m/s].
pb    144    99    base state pressure [Pa].
pp    144    99    pressure perturbation [Pa].
ptb 144    99    base state potential temperature [K].
ptp 144    99    potential temperature perturbation [K].
ENDVARS
```

Use the dmp.ctl file to display the result by Grads. Then, you will find the beautiful mountain waves.

CReSS is still developing, please check the our download page some time.

If you have any questions, please do not hesitate to send me e-mail to ask your problems. The e-mail should be sent to tsuboki@rain.hyarc.nagoya-u.ac.jp.

Thank you.

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