INCA HowTo

16 nov 2012

Compilation

AA_make file

```
NMHC_AERxLMD9695-L39 : libioipsl liborchidee nmhcaer_lmdz969539
   echo "NMHC_AERxLMD9695-L39" >.resol
   echo "RESOL_ATM_3D=96x95x39" >>.resol
   echo "CHEM=NMHC_AER" > .chimie

(…)

libioipsl :
        (cd ../../modeles/IOIPSL/src ; $(M_K) -f Makefile)

liborchidee :
        (cd ../../modeles/ORCHIDEE/ ; $(M_K) -f Makefile)

nmhcaer_lmdz969539:
            (cd ../../modeles/INCA3; ./makeinca_fcm -chimie NMHC_AER -parallel mpi  -resol 96x95x39 -arch $(FCM_ARCH); cp SIMULATIONS/NMHC_AER/inca.dat ../../bin/inca.dat ; )
    #       (cd ../../modeles/LMDZ; ./makelmdz_fcm -chimie INCA -d 96x95x39 -parallel mpi -arch $(FCM_ARCH) ce0l ; cp bin/ce0l_96x95x39_phylmd_para_inca.e ../../bin/create_etat0_limit.e ; )
            (cd ../../modeles/LMDZ; ./makelmdz_fcm -cpp ORCHIDEE_NOOPENMP -d 96x95x39 -chimie INCA -v true -parallel mpi  -arch $(FCM_ARCH) gcm ; cp bin/gcm_96x95x39_phylmd_para_orch_inca.e ../../bin/gcm.e ; )
```

Compilation

`modipsl/util/ins_make` → transform AA_make in Makefile (adapt to computer). Be careful if you want save your modifications change AA_make and not Makefile

`gmake my_target_resolution`

→ create file .resol (hide file) contening resolution

→ create file .chimie (hide file) contening chemistry configuration

NMHC_AERxLMD9695-L39 : libioipsl liborchidee nmhcaer_lmdz969539

```
echo "NMHC_AERxLMD9695-L39" >.resol
echo "RESOL_ATM_3D=96x95x39" >>.resol
echo "CHEM=NMHC_AER" > .chimie
```

Compile a new resolution

Copy a configuration in AA_make (or Makefile) and change in it the resolution :

```
NMHC_AERxLMD9695-L39 : libioipsl liborchidee nmhcaer_lmdz969539
   echo "NMHC_AERxLMD9695-L39" >.resol
   echo "RESOL_ATM_3D=96x95x39" >>.resol
   echo "CHEM=NMHC_AER" > .chimie


(…)
nmhcaer_lmdz969539:
            (cd ../../modeles/INCA3; ./makeinca_fcm -chimie NMHC_AER -parallel mpi  -resol 96x95x39 -arch $(FCM_ARCH); cp SIMULATIONS/NMHC_AER/inca.dat ../../bin/inca.dat ; )
#       (cd ../../modeles/LMDZ; ./makelmdz_fcm -chimie INCA -d 96x95x39 -parallel mpi -arch $(FCM_ARCH) ce0l ; cp bin/ce0l_96x95x39_phylmd_para_inca.e ../../bin/create_etat0_limit.e ; )
            (cd ../../modeles/LMDZ; ./makelmdz_fcm -cpp ORCHIDEE_NOOPENMP -d 96x95x39 -chimie INCA -v true -parallel mpi  -arch $(FCM_ARCH) gcm ; cp bin/gcm_96x95x39_phylmd_para_orch_inca.e ../../bin/gcm.e ; )
```

Compile a new resolution

- If you're working with old INCA (files .inp in INCA/INP/ directory) you need to change the resolution in preproc file (inca_**.inp)

```
Spatial Dimensions
    Longitude points = 9026
    Latitude  points = 1
    Vertical  points = 19
    GCM long = 96
    GCM lat = 95
 Endent
```

= (lon x (lat - 1) + 2))

- If you're working with the last INCA version (files *.def in INCA/INP/ directory) the resolution will be modify interactively

- Before launch a simulation you need to create news inputs files

Work with several versions

Change the name of executable stored in modipsl/bin/

For exemple with several resolutions :

nmhcaer_lmdz14414239:

(cd ../../modeles/INCA3; ./makeinca_fcm -chimie NMHC_AER -parallel mpi -resol 144x142x39 -arch $(FCM_ARCH); cp SIMULATIONS/NMHC_AER/inca.dat ../../bin/inca_144142.dat ;)

(cd ../../modeles/LMDZ; ./makelmdz_fcm -cpp ORCHIDEE_NOOPENMP -d 144x142x39 -chimie INCA -v true -parallel mpi -arch $(FCM_ARCH) gcm ; cp bin/gcm_144x142x39_phylmd_para_orch_inca.e ../../bin/gcm_144142.e ;)

nmhcaer_lmdz969539:

(cd ../../modeles/INCA3; ./makeinca_fcm -chimie NMHC_AER -parallel mpi -resol 96x95x39 -arch $(FCM_ARCH); cp SIMULATIONS/NMHC_AER/inca.dat ../../bin/inca_9695.dat ;)

(cd ../../modeles/LMDZ; ./makelmdz_fcm -cpp ORCHIDEE_NOOPENMP -d 96x95x39 -chimie INCA -v true -parallel mpi -arch $(FCM_ARCH) gcm ; cp bin/gcm_96x95x39_phylmd_para_orch_inca.e ../../bin/gcm_9695.e ;)

Work with several versions

Then modify config.card :

#D-- Executable -

[Executable]

Name=gcm.e

#D- For each component, Real name of executable, Name of executable for oasis

ATM= (gcm_144142.e, gcm.e)

SRF= ("", "")

SBG= ("", "")

CHM= (inca_144142.dat, inca.dat)

New config _v5

>> cd config/LMDZORINCA_v5/
>> ls
AA_make EXPERIMENTS/ Makefile AA_make.ldef GENERAL/ README
>> cd EXPERIMENTS/
>> ls
LMDZ/ LMDZOR/ LMDZORINCA/
>>cd LMDZORINCA
>>ls
AER/ GES/ NMHC_AER/
>> cd NMHC_AER
>> ls
COMP/ config.card

One directory for all resolutions
of the same chemistry

>> cp config.card ../../../.
>>>>>> modify config.card

>> ../../util/.ins_job
>>>>>> creation of experiment directory → you find the old way to work

INCA Versions

INCA3 (19L) + LMDZ4 → LMDZORINCA (in modipsl/util/mod.def)

INCA4 (39L) + LMDZ5 → LMDZORINCA_v5 (inca modipsl/util/mod.def). Be careful in this config the INCA directory is always call INCA3 (even if it's INCA4).

Last libIGCM tag

libIGCM_v2.0_rc1 : now if you use SpaceName=TEST → your simulation is not store on storedir but only on scratchdir.

How to extract it (in modipsl/util/mod.def) :

```
#---- libIGCM standalone
#-H- libIGCM  libIGCM latest tagged version
#-M- libIGCM  Sebastien.Denvil@ipsl.jussieu.fr
#-C- libIGCM  tags/libIGCM_v2.0_rc1  HEAD  10 libIGCM    .
```

Last libIGCM tag

If you extract all the config

```
#-H- LMDZORINCA_v5  LMDZ4 with ORCHIDEE and INCA (closest version to IPSLCM5_v5):
#-H- LMDZORINCA_v5  ORCHIDEE tag orchidee_1_9_5
#-H- LMDZORINCA_v5  INCA trunk INCA4 rev 264
#-H- LMDZORINCA_v5  LMDZ5 LMDZ5/trunk rev 1628
#-H- LMDZORINCA_v5  IOIPSL/src svn tags/v2_2_1
#-H- LMDZORINCA_v5  libIGCM tag libIGCM_v2.0_beta4
#-M- LMDZORINCA_v5  Anne.Cozic@lsce.ipsl.fr
#-C- LMDZORINCA_v5  IOIPSL/tags/v2_2_1/src            HEAD              8      IOIPSL/src      modeles
#-C- LMDZORINCA_v5  tags/ORCHIDEE_1_9_5/ORCHIDEE      HEAD      14      ORCHIDEE        modeles
#-C- LMDZORINCA_v5  LMDZ5/trunk                       1628              11      LMDZ            modeles
#-C- LMDZORINCA_v5  tags/INCA4.1.0                    HEAD              9       INCA3           modeles
#-C- LMDZORINCA_v5  tags/libIGCM_v2.0_rc1             HEAD              10      libIGCM         .
#-C- LMDZORINCA_v5  CONFIG/UNIFORM/v5/LMDZORINCA_v5    HEAD    8   LMDZORINCA_v5   config
```

Remind on SpaceName and ExperimentName (config.card)

JobName=L5OI4run
#SpaceName=TEST
#ExperimentName=XXXX

>> ls $CCCSTOREDIR/IGCM_OUT/LMDZORINCA/NMHC_AER/
L5OI4run

JobName=L5OI4run
SpaceName=TEST
ExperimentName=RADIATIV

>> ls $SCRATCHDIR/IGCM_OUT/LMDZORINCA/NMHC_AER/TEST/RADIATIV/
L5OI4run

JobName=L5OI4run
SpaceName=PROD
ExperimentName=RADIATIV

>> ls $CCCSTOREDIR/IGCM_OUT/LMDZORINCA/NMHC_AER/PROD/RADIATIV
L5OI4run

Platform-users mailing list

Email : Platform-users@courriel.ipsl.jussieu.fr

This list aims to organize and make it easier to communicate between users about IPSL tools, such as libIGCM and modipsl. These tools are commun to all models configurations : LMDZOR, LMDZORINCA, LMDZReprobus, LMDZ, ORCHIDEE, NEMO, IPSLCM5A, ...

→ Script_Output part1 (input) and part2 (output)

→ all card (config.card / PARAM / COMP)