Running RegCM4

G. Giuliani

ICTP - Earth System Physics Section

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Data Source

ICTP internal Data Server:

`/home/esp-shared-b/RegCM_Data`

Web Server:

`http://clima-dods.ictp.it/regcm4`

Static Data

The RegCM4 model requires global surface datasets to run

```
GMTED                    Topography
GLCC                     Land Cover
SOIL                     Texture
```

Terrain (I)

This step reads Global Static Surface datasets and creates input data on RegCM model grid

Let us look at Namelists:

```
dimparam              iy jx kz
geomparam             ds iproj clat clon
terrainparam          inpter dirter
```

Terrain (II)

Run the terrain program:

`./bin/terrain test_001.in`

and examine the DOMAIN file in the input directory

BC Data

The RegCM4 model requires global physical atmospheric boundary conditions

MEASUREMENTS   SST
REANALYSIS   ECMWF JRA NNRP
IPCC GCMs   RCP future scenarioes

ICBC (I)

This step reads Global Atmospheric datasets and creates input data on RegCM model horizontal and vertical gridpoints
Let us look at Namelists:

```
globdatparam          ssttyp dattyp
                      gdate1 gdate2
                      inpglob dirglob
```

ICBC (II)

We can now run the two stage ICBC

```
./bin/sst test_001.in
./bin/icbc test_001.in
```

and examine the ICBC in the input directory

Model namelists

We have now the ICBC ready to run the model for any date period in between gdate1 and gdate2 as specified above in the `globdatparam`
Let us set run date in

`restartparam     mdate0 mdate1 mdate2`

and output options in

`outparam          dirout`

Running the model

`mpirun ./bin/regcmMPI test_001.in`

Examine the output model data in the output directory

CLM Option

The Community Lamd Model CLM in RegCM is a surface model option which substitutes the Biosphere-Atmosphere Transfer Scheme BATS.

The compilation of the CLM is optional.

The build system creates a different executable compiling different source files.

Compilation of the CLM4.5

```
cd ..
make distclean
./configure --enable-clm45
```

Running CLM PreProcessing

```
cd run
./bin/mksurfdataCLM45 test_001.in
```

Running CLM-RegCM Model

```
# Modify executable name in mpirun line
mpirun ./bin/regcmMPI_CLM45 test_001.in
```