1 Passo fazer o download do arquivo
http://ftp.cptec.inpe.br/pesquisa/bam/bam_serial-2.0.tar.gz

2 Passo fazer o descompactação do arquivo
tar -zxvf bam_serial-2.0.tar.gz

3 Passo Compilar o GetICnAGCM
cd bam_serial-2.0/GetICnAGCM/Sources
make
make linux_gnu_serial

4 Passo Compilar o pre-processamento
cd bam_serial-2.0/pre/sources
make
make linux_gnu_serial

5 Passo Compilar o modelo
cd bam_serial-2.0/model/source
make
make linux_gnu_serial

6 Passo Compilar o pos-processamento
cd bam_serial-2.0/pos/source
make
make linux_gnu_serial

7 Passo Rodar o GetICnAGCM para gerar a analise GAN...
cd bam_serial-2.0/GetICnAGCM/GrADSScripts
grads -lbc "run GetERAWebICn_daily.gs 12z01dec2011 6 1"

cd bam_serial-2.0/GetICnAGCM/RunScripts
./RunICnAGCM.XT6 62 28 2011120112 EIT Q T

8 Passo Rodar o pre-processamento
cd bam_serial-2.0/run
./runPre
./runPre 62 28 2011120112 NMC 1   T

9 Passo Rodar o modelo
cd bam_serial-2.0/run
./runModel
./runModel 1 1 1 bam 62 28 2011120112 2011120212 2011120212 2011120212 NMC sstmtd 2

10 Passo Rodar o pos-processamento
cd bam_serial-2.0/run
./runPos
./runPos 1 1 1 posbam 126 28 2011120112 2011120212 2011120212 NMC COLD 1

Experimentos:

The bam model presents the following structure:

1. GetICnAGCM: (program that creates the initial condition of the atmosphere using as input data the reanalysis of the interim ERA)

2. bam
   pre (programs that pre-process the data for the resolution of the bam model grid.)
   model (program that performs the forecast for a given period.)

Pos (programs that pro-process the data of the bam model grid for the resolution of the output grid)

Before you run the GetICnAGCM program you must edit the GetICnAGCM / Configure.ksh file Example

:

Vim GetICnAGCM/Configure.ksh

….

….

….

export DirHome=/gws/nopw/j04/klingaman/paulo.kubota/GetICnAGCM

export DirData=/gws/nopw/j04/klingaman/paulo.kubota/GetICnAGCM;mkdir -p ${DirData}

export DirDataBam=/gws/nopw/j04/klingaman/paulo.kubota/bam

export DirGrADS=/opt/grads/2.0.a9/bin

…..

….

The environment variables DirHome, DirData, DirDataBam, DirGrADS need to be modified for each user:

To run GetICnAGCM you use the scripts:

./RunICnAGCM.XT6 126 28 2011120112 EIT Q T

Submits the Geration of CPTEC AGCM Spectral Initial Condition Based on Input Grided Data of Topography, Mean Sea Level Pressure, Temperature, Zonal and Meridional Winds and Specific Humidity, for ERA 40 and ERA Interim Reanalysis and for NCEP Final Analysis.

#**********#

Arguments:

# #

```
#          1st :   Trc: Triangular Truncation                                                    #
#          2nd :       Lv: Number of Vertical Layers                                           #
#          3rd : DateICn: Date of Initial Condition                                            #
#          DateICn: yyyymmddhh                                                                 #
#                      yyyy = Year  with 4 Digits                                               #
#                      mm  = Month with 2 Digits                                                #
#                      dd    = Day   with 2 Digits                                               #
#                      hh    = Hour  with 2 Digits                                              #
#          4th : Case:                                                                         #
#          E40 - ERA 40 at CPTEC                                                               #
#          E4W - ERA 40 at ECMWF                                                               #
#          EIT - ERA Interim at ECMWF                                                          #
#          FNL - NCEP Final Analysis at NCAR                                                   #
#          GFS - NCEP  Analysis                                                                #
#          5th : GD:   Grid:                                                                      #
#                      Quadratic (Q) or Linear (L)                                             #
#          6th : T:   Level:                                                                      #
#                                  Sigma (T) or Hibrid (F)                                                    #
#                                                                                                    #
#*************************************************************************************************#
```

Before running the programs of the BAM model it is necessary to modify the EnvironmentalVariablesMCGA file that is the bam/run directory.
In this step edit the file EnvironmentalVariablesMCGA
Vim EnvironmentalVariablesMCGA
…..
…..

```
echo ${DK}; export DK=/gws/nopw/j04/klingaman/paulo.kubota/bam
if [ -z "${DK}" ] ;then
export DK=`cd ..;pwd`        # Default, if no filename specified.
fi
echo ${DK2}; export DK2=/gws/nopw/j04/klingaman/paulo.kubota/bam
….
….
```

The DK and DK2 environment variables define the paths where the input and output data are to run the model.
The DK is where is the input data and the DK2 is where the model will write the files.

Para executar o pré-processamento do modelo bam é necessário executar o scripts que está no diretório bam/run/

```
./runPre      62     28      1979120112        NMC       0          T         F         213     42
```

```
#*********************************************************************************************#
#                                                                                             #
# script to run CPTEC OPERATION                                                               #
# runPre TRC LV  LABELI PREFIX total   SmoothTopo  GDASOnly       RESIN    KMIN     #
# example :                                                                                   #
# runPre 94 28  2004032600 NMC 1   T  F     62          42                                     #
#                                                                                             #
#                                                                                             #
# runPre 62 28 1979120112 NMC 1   T  F     213        42                                      #
#                                                                                             #
#            TRC       => 4 digits spectral resolution                                        #
#            LV          => 3 digits vertical resolution                                      #
#                    LABELI   => initial data YYYYMMDDHH                                      #
#                    PREFIX   => NMC                                                          #
#                    total       => 1 tudo 0 parcial                                          #
#          SmoothTopo => Flag to Performe Topography Smoothing                                #
#          GDASOnly  => Flag to Only Produce Input CPTEC Analysis File (T or F)               #
#          RESIN   => Spectral Horizontal Resolution of Input Data                            #
#                        4 digits spectral resolution                                         #
#          KMIN     => Number of Layers of Input Data                                         #
#                        3 digits vertical resolution                                         #
#                                                                                             #
#*********************************************************************************************#
```

```
#*****************************************************************************************************#
#
#
# script to run CPTEC Global Model on PC Clusters under MPI Scali                                     #
# and Sun Grid Engine without OpenMP                                                                    #
#
#
```

```
# assumptions: assume present at the same directory:                                    #
#           ParModel_MPI (Global Model Executable file)                                 #
#           MODELIN (Global Model input Namelist file)                                  #
#
#
# usage: runModel cpu_mpi cpu_node  task_omp name TRC LV LABELI LABELR LABELW LABELF NMC NMSST initlz #
#
#
#
#
#           runModel   72 4 6 bam 62 28 2004032600 2004042600 2004042600 2004042600 NMC sstmtd 2 #
#
#
# where:                                                                                 #
# cpu_mpi    :  integer, the desired number of mpi processes                            #
# cpu_node :  integer, the desired number of mpi processes per shared memory node       #
# task_omp  :  integer, number task omp by processos mpi                                #
# name         : character, the job name (for SGE)                                      #
# TRC          : Spectral resolution (Number of wave)                                   #
# LV             : Vertical resolution(Number of layer in atmosphere)                   #
# LABELI    : initial data YYYYMMDDHH  initial condition
#
# LABELR  : Read  restart data YYYYMMDDHH                                                #
# LABELW  : Write restart data YYYYMMDDHH data da inicializacao do restart do modelo     #
# LABELF  : Final   data YYYYMMDDHH                                                      #
# NMC       : prefix of files   NMC
#
# NMSST   : type of sst (sstwkl, sstaoi, sstmtd, sstdyl)                                 #
# initlz  =2,          ! initlz = 2 diabatic initialization and normal mode initialization #
#                      !          = 1 diabatic initialization and without normal mode initialization
#
#                      !          = 0 without diabatic initialization and without normal mode initialization
#
#                      !          [TOTAL RESTART ](adiabatic with no normal mode initialization)
#
#                      !          < 0 same as >0 with sib variables read in instead of  initialized
#
#                      !          =-1 diabatic initialization and without normal mode initialization
#
#                      !          with sib variables read in instead of  initialized
#
#                      !          =-2 diabatic initialization and normal mode initialization
#
#                      !          with sib variables read in instead of  initialized
#
# hold: any, present or not;
#
#           if absent, script finishes after queueing job;                               #
#           if present, script holds till job completion
#
```

```
#*****************************************************************************************************************#
```

```
#*****************************************************************************************************************#
#
#
# script to run CPTEC Post-processing on PC Clusters under MPI Scali
#
# and Sun Grid Engine without OpenMP
#
#
#
# assumptions: assume present but NOT at the same directory:
#
#           $FEXE/PostGrib (Post-processing Executable file)
#
#           $FSCR/POSTIN-GRIB (Post-processing input Namelist file)
#
#
#
# usage:runPos cpu_mpi cpu_node task_omp name   TRC LV  LABELI            LABELW  LABELF   NMC START FIRST        #
#           runPos   1          1           1   posbam 62  28  2004032600 2004042600 2004042600  NMC COLD   1   #
# where:
#
# cpu_mpi : integer, the desired number of mpi processes
#
# cpu_node: integer, the desired number of mpi processes per shared memory node
#
# task_omp: numero de processos openmp por processos mpi
#
# name  : Name of the Proccess (job)
#
# TRC    : Spectral resolution(Number of wave)
#
# LV      : Vertical resolution(Number of layer in atmosphere)
#
# LABELI  : initial data YYYYMMDDHH
#
# LABELW  : restart data YYYYMMDDHH (if COLD ---> LABELW=LABELF)
#
```

```
# LABELF  : Final   data YYYYMMDDHH
#
# NMC   : prefix of files   NMC
#
# START   : type of pos-processing (COLD WARM)
#
# FIRST   : ---
#
#*****************************************************************************************************************#
```