

SHORT HOW2RUN Eta MODEL

Get the Eta Model in

<http://www.cptec.inpe.br/etaweb/>

go to Download options and get the archive:
worketa_all.tgz

Starting to install the model

```
jorge.gomes@paqueta:~/Model> ls -l
total 694532
-rw-r--r-- 1 jorge.gomes users 710492901 2008-11-13 12:29 worketa.tgz
jorge.gomes@paqueta:~/Model>
```

UNZIP AND UNTAR MODEL

```
jorge.gomes@paqueta:~/Model> tar -zxvf worketa_all.tgz
```

SET UP MODEL ENVIRONMENT

```
jorge.gomes@paqueta:~/Model> cd ./worketa_all/
```

```
jorge.gomes@paqueta:~/Model/worketa_all> ./setup LINUX
```

CHECK FORTRAN COMPILER

For preprocessing:

```
jorge.gomes@paqueta:~/MODEL/worketa_all>cd ./dprep/src/configure/
```

```
jorge.gomes@paqueta:~/Model/worketa_all/dprep/src/configure> more make.inc
FC      = pgf90
FFLAGS  =
CFLAGS  = -O
CDF_INC =
CDF_LIB =
jorge.gomes@paqueta:~/Model/worketa_all/dprep/src/configure>
```

For model:

```
jorge.gomes@paqueta:~/Model/worketa_all/dprep/src/configure> cd ../../eta/src/configure
```

```
jorge.gomes@paqueta:~/Model/worketa_all/eta/src/configure> more make.inc
FC = pgf90
MPI_FC = mpi90
CC = /lib/cpp -traditional-cpp
FFLAGS = -fast -DLITTLE
# FFLAGS = -lfpe
CFLAGS =
jorge.gomes@paqueta:~/Model/worketa_all/eta/src/configure>
```

P.S. Change the files above if your installed Fortran compiler is not the pgf90.

LIBRARIES COMPILATION

```
jorge.gomes@paqueta:~/Model/worketa_all/eta/src/configure> cd ../../libraries/
jorge.gomes@paqueta:~/Model/worketa_all/libraries> cd dummyMPI/
jorge.gomes@paqueta:~/Model/worketa_all/libraries/dummyMPI> rm -f *.o libmpi.a
jorge.gomes@paqueta:~/Model/worketa_all/libraries/dummyMPI> make -f Makefile.linux
jorge.gomes@paqueta:~/Model/worketa_all/libraries/dummyMPI> cd ../bacio.source/
jorge.gomes@paqueta:~/Model/worketa_all/libraries/bacio.source> ./comp.com
jorge.gomes@paqueta:~/Model/worketa_all/libraries/bacio.source> cd ..
jorge.gomes@paqueta:~/Model/worketa_all/libraries> ./make_ip_w3
```

P.S. The commands above will be create the files marked in red below.

```
jorge.gomes@paqueta:~/Model/worketa_all/libraries> ls -ltr
total 1216
-rwxr--r-- 1 jorge.gomes users 143 2005-04-06 17:57 make_ip_w3_LE
-rwxr--r-- 1 jorge.gomes users 138 2005-04-06 17:57 make_ip_w3_BE
drwxr-xr-x 2 jorge.gomes users 4096 2005-04-06 17:57 iplib.source
drwxr-xr-x 2 jorge.gomes users 4096 2008-09-28 08:03 w3lib.source
-rwxr--r-- 1 jorge.gomes users 143 2008-11-13 12:47 make_ip_w3
drwxr-xr-x 2 jorge.gomes users 4096 2008-11-14 05:28 dummyMPI
drwxr-xr-x 2 jorge.gomes users 4096 2008-11-14 05:29 bacio.source
-rw-r--r-- 1 jorge.gomes users 14472 2008-11-14 05:29 bacio
drwxr-xr-x 2 jorge.gomes users 4096 2008-11-14 05:30 w3lib.source.le
-rw-r--r-- 1 jorge.gomes users 314668 2008-11-14 05:30 w3lib
drwxr-xr-x 2 jorge.gomes users 4096 2008-11-14 05:30 iplib.source.le
-rw-r--r-- 1 jorge.gomes users 373010 2008-11-14 05:30 iplib
drwxr-xr-x 2 jorge.gomes users 4096 2008-11-14 05:31 ei_bufriplib.source
-rw-r--r-- 1 jorge.gomes users 479524 2008-11-14 05:31 bufriplib
jorge.gomes@paqueta:~/Model/worketa_all/libraries>
```

PREPROCESSOR COMPILATION

```
jorge.gomes@paqueta:~/Model/worketa_all/libraries> cd ../dprep/install/
```

```
jorge.gomes@paqueta:~/Model/worketa_all/dprep/install> ./build_dprep
>./build_dprep.log
```

This will be create this exec files below:

```
jorge.gomes@paqueta:~/Model/worketa_all/dprep/install> ls -ltr ../exe/
total 4984
-rwxr-xr-x 1 jorge.gomes users 1011968 2008-11-14 05:34 dgeta2model_gbl.exe
-rwxr-xr-x 1 jorge.gomes users 1031277 2008-11-14 05:34 dgeta2model.exe
-rwxr-xr-x 1 jorge.gomes users 998586 2008-11-14 05:34 dgeta2model_wafs.exe
-rwxr-xr-x 1 jorge.gomes users 1019539 2008-11-14 05:34 dgeta2model_tileuni.exe
-rwxr-xr-x 1 jorge.gomes users 1012442 2008-11-14 05:34 dgeta2model_gblG2.exe
jorge.gomes@paqueta:~/Model/worketa_all/dprep/install>
```

Eta MODEL COMPILATION

```
jorge.gomes@paqueta:~/Model/worketa_all/dprep/install> cd ../../eta/install/
```

```
jorge.gomes@paqueta:~/Model/worketa_all/eta/install> ./builddall >./build.log
```

This will be create this exec files below:

```
jorge.gomes@paqueta:~/Model/worketa_all/eta/install> ls -ltr ../exe/
total 15580
-rwxr-xr-x 1 jorge.gomes users 1394231 2008-11-14 05:37 initbc.exe
-rwxr-xr-x 1 jorge.gomes users 958483 2008-11-14 05:37 etatopo.exe
-rwxr-xr-x 1 jorge.gomes users 2619565 2008-11-14 05:38 etafcst_all.x
-rwxr-xr-x 1 jorge.gomes users 2504271 2008-11-14 05:38 etafcst_kf.x
-rwxr-xr-x 1 jorge.gomes users 2512579 2008-11-14 05:39 etafcst_kfm.x
-rwxr-xr-x 1 jorge.gomes users 1201343 2008-11-14 05:39 quilt.x
-rwxr-xr-x 1 jorge.gomes users 1437120 2008-11-14 05:39 etapost_new.x
-rwxr-xr-x 1 jorge.gomes users 1208367 2008-11-14 05:39 copygb.x
-rwxr-xr-x 1 jorge.gomes users 1040349 2008-11-14 05:39 sndp.x
-rwxr-xr-x 1 jorge.gomes users 981597 2008-11-14 05:39 post0.x
jorge.gomes@paqueta:~/Model/worketa_all/eta/install>
```

MODEL RUN

Input files and decoding.

```
jorge.gomes@paqueta:~/Model/worketa_all/eta/install> cd ../../dprep/bin/
```

```
jorge.gomes@paqueta:~/Model/worketa_all/dprep/bin> ./inputdata.scr 00 48 06 gfs2
```

Check the created files in data directory.

```
jorge.gomes@paqueta:~/Model/worketa_all/dprep/bin> ls -l ../../data/prep/
total 266080
-rw-r--r-- 1 jorge.gomes users 30234404 2008-11-14 05:42 08110600000.ETA_avn
-rw-r--r-- 1 jorge.gomes users 30234404 2008-11-14 05:42 081106000006.ETA_avn
-rw-r--r-- 1 jorge.gomes users 30234404 2008-11-14 05:42 081106000012.ETA_avn
```

```
-rw-r--r-- 1 jorge.gomes users 30234404 2008-11-14 05:42 08110600018.ETA_avn
-rw-r--r-- 1 jorge.gomes users 30234404 2008-11-14 05:42 08110600024.ETA_avn
-rw-r--r-- 1 jorge.gomes users 30234404 2008-11-14 05:42 08110600030.ETA_avn
-rw-r--r-- 1 jorge.gomes users 30234404 2008-11-14 05:42 08110600036.ETA_avn
-rw-r--r-- 1 jorge.gomes users 30234404 2008-11-14 05:42 08110600042.ETA_avn
-rw-r--r-- 1 jorge.gomes users 30234404 2008-11-14 05:42 08110600048.ETA_avn
-rw-r--r-- 1 jorge.gomes users 808 2008-11-14 05:42 gdsinfo.ETA_avn
```

Check the download sst and snow files.

```
jorge.gomes@paqueta:~/Model/worketa_all/dprep/bin> ls -ltr ../eta/bin
-rw-r--r-- 1 jorge.gomes users 259200 2008-11-14 05:42 sst.lowres
-rw-r--r-- 1 jorge.gomes users 1036800 2008-11-14 05:42 sst.hires
-rw-r--r-- 1 jorge.gomes users 285996 2008-11-14 05:42 snowdepth.grb
-rw-r--r-- 1 jorge.gomes users 1052498 2008-11-14 05:42 imssnow.grb
jorge.gomes@paqueta:~/Model/worketa_all/dprep/bin>
```

Run Model Pre-processor

```
jorge.gomes@paqueta:~/Model/worketa_all/dprep/bin> cd ../eta/bin/
```

```
jorge.gomes@paqueta:~/Model/worketa_all/eta/bin> ./new_prep.sh
```

```
jorge.gomes@paqueta:~/Model/worketa_all/eta/bin> cd ../runs
```

```
jorge.gomes@paqueta:~/Model/worketa_all/eta/runs> ls -ltr
-rw-r--r-- 1 jorge.gomes users 4808596 2008-11-14 05:48 init.file
-rw-r--r-- 1 jorge.gomes users 1436 2008-11-14 05:48 ETAIN
-rw-r--r-- 1 jorge.gomes users 3284192 2008-11-14 05:48 cnst.file
-rw-r--r-- 1 jorge.gomes users 2841048 2008-11-14 05:48 bndy.newstyle
-rw-r--r-- 1 jorge.gomes users 4254260 2008-11-14 05:48 bndy.file
-rw-r--r-- 1 jorge.gomes users 72012 2008-11-14 05:48 profdat
-rw-r--r-- 1 jorge.gomes users 54648 2008-11-14 05:48 co2.dat
jorge.gomes@paqueta:~/Model/worketa_all/eta/runs>
```

Run the Eta Model

```
jorge.gomes@paqueta:~/Model/worketa_all/eta/runs> ./run.com_mpi
```

To run the model with diferent convection schemes:

Betts-Miller-Janjic => run.com_mpi bmj

Kain-Fritsch => run.com_mpi kf

Kain-Fritsch with momentum flux => run.com_mpi kfmj

```
jorge.gomes@paqueta:~/Model/worketa_all/eta/runs> ./run.com_mpi bmj
```

Run model pos-processor

```
jorge.gomes@paqueta:~/Model/worketa_all/eta/runs> ./outjob_special 00 48 03 latlon
```

Create output figures

```
jorge.gomes@paqueta:~/Model/worketa_all/eta/runs> ./Make_Figures.sh
```

This comand will be create some figures for benchmark run and you can compare with figures in directory BENCHMARK_SSTHIRES_BMJ

```
jorge.gomes@paqueta:~/Model/worketa_all/eta/runs> ls -ltr *.gif
-rw-r--r-- 1 jorge.gomes users 80324 2008-11-14 06:04 tmpsfc_Analysis.gif
-rw-r--r-- 1 jorge.gomes users 77650 2008-11-14 06:04 tmpsfc_48h.gif
-rw-r--r-- 1 jorge.gomes users 87952 2008-11-14 06:04 tmpsfc_36h.gif
-rw-r--r-- 1 jorge.gomes users 78643 2008-11-14 06:04 tmpsfc_24h.gif
-rw-r--r-- 1 jorge.gomes users 87140 2008-11-14 06:04 tmpsfc_12h.gif
-rw-r--r-- 1 jorge.gomes users 66017 2008-11-14 06:04 slp_Analysis.gif
-rw-r--r-- 1 jorge.gomes users 71694 2008-11-14 06:04 slp_48h.gif
-rw-r--r-- 1 jorge.gomes users 72165 2008-11-14 06:04 slp_36h.gif
-rw-r--r-- 1 jorge.gomes users 68799 2008-11-14 06:04 slp_24h.gif
-rw-r--r-- 1 jorge.gomes users 67142 2008-11-14 06:04 slp_12h.gif
-rw-r--r-- 1 jorge.gomes users 79898 2008-11-14 06:04 prec_48h.gif
-rw-r--r-- 1 jorge.gomes users 77625 2008-11-14 06:04 prec_36h.gif
-rw-r--r-- 1 jorge.gomes users 75605 2008-11-14 06:04 prec_24h.gif
-rw-r--r-- 1 jorge.gomes users 72502 2008-11-14 06:04 prec_12h.gif
-rw-r--r-- 1 jorge.gomes users 84210 2008-11-14 06:04 rh_Analysis.gif
-rw-r--r-- 1 jorge.gomes users 75586 2008-11-14 06:04 rh_48h.gif
-rw-r--r-- 1 jorge.gomes users 80183 2008-11-14 06:04 rh_36h.gif
-rw-r--r-- 1 jorge.gomes users 66785 2008-11-14 06:04 rh_24h.gif
```

```
-rw-r--r-- 1 jorge.gomes users 71916 2008-11-14 06:04 rh_12h.gif
```

```
jorge.gomes@paqueta:~/Model/worketa_all/eta/runs> ls -l ./BENCHMARK_SSTHIRES_BMJ/*.gif  
-rw-r--r-- 1 jorge.gomes users 72726 2008-11-12 10:52 ./BENCHMARK_SSTHIRES_BMJ/prec_12h.gif  
-rw-r--r-- 1 jorge.gomes users 76119 2008-11-12 10:52 ./BENCHMARK_SSTHIRES_BMJ/prec_24h.gif  
-rw-r--r-- 1 jorge.gomes users 77720 2008-11-12 10:52 ./BENCHMARK_SSTHIRES_BMJ/prec_36h.gif  
-rw-r--r-- 1 jorge.gomes users 80822 2008-11-12 10:52 ./BENCHMARK_SSTHIRES_BMJ/prec_48h.gif  
-rw-r--r-- 1 jorge.gomes users 72454 2008-11-12 10:52 ./BENCHMARK_SSTHIRES_BMJ/rh_12h.gif  
-rw-r--r-- 1 jorge.gomes users 68922 2008-11-12 10:52 ./BENCHMARK_SSTHIRES_BMJ/rh_24h.gif  
-rw-r--r-- 1 jorge.gomes users 80776 2008-11-12 10:52 ./BENCHMARK_SSTHIRES_BMJ/rh_36h.gif  
-rw-r--r-- 1 jorge.gomes users 79009 2008-11-12 10:52 ./BENCHMARK_SSTHIRES_BMJ/rh_48h.gif  
-rw-r--r-- 1 jorge.gomes users 84204 2008-11-12 10:52 ./BENCHMARK_SSTHIRES_BMJ/rh_Analysis.gif  
-rw-r--r-- 1 jorge.gomes users 67514 2008-11-12 10:52 ./BENCHMARK_SSTHIRES_BMJ/slp_12h.gif  
-rw-r--r-- 1 jorge.gomes users 68971 2008-11-12 10:52 ./BENCHMARK_SSTHIRES_BMJ/slp_24h.gif  
-rw-r--r-- 1 jorge.gomes users 70876 2008-11-12 10:52 ./BENCHMARK_SSTHIRES_BMJ/slp_36h.gif  
-rw-r--r-- 1 jorge.gomes users 71016 2008-11-12 10:52 ./BENCHMARK_SSTHIRES_BMJ/slp_48h.gif  
-rw-r--r-- 1 jorge.gomes users 66011 2008-11-12 10:52 ./BENCHMARK_SSTHIRES_BMJ/slp_Analysis.gif  
-rw-r--r-- 1 jorge.gomes users 76077 2008-11-12 10:52 ./BENCHMARK_SSTHIRES_BMJ/tmpsfc_12h.gif  
-rw-r--r-- 1 jorge.gomes users 79510 2008-11-12 10:52 ./BENCHMARK_SSTHIRES_BMJ/tmpsfc_24h.gif  
-rw-r--r-- 1 jorge.gomes users 76364 2008-11-12 10:52 ./BENCHMARK_SSTHIRES_BMJ/tmpsfc_36h.gif  
-rw-r--r-- 1 jorge.gomes users 82873 2008-11-12 10:52 ./BENCHMARK_SSTHIRES_BMJ/tmpsfc_48h.gif  
-rw-r--r-- 1 jorge.gomes users 71563 2008-11-12 10:52 ./BENCHMARK_SSTHIRES_BMJ/tmpsfc_Analysis.gif
```

Short Guide adapted by Jorge Luís Gomes from δ A Guide to the Eta Model δ by Matthew E. Pyle, Vladimir Djurdjevic and Fedor Mesinger.