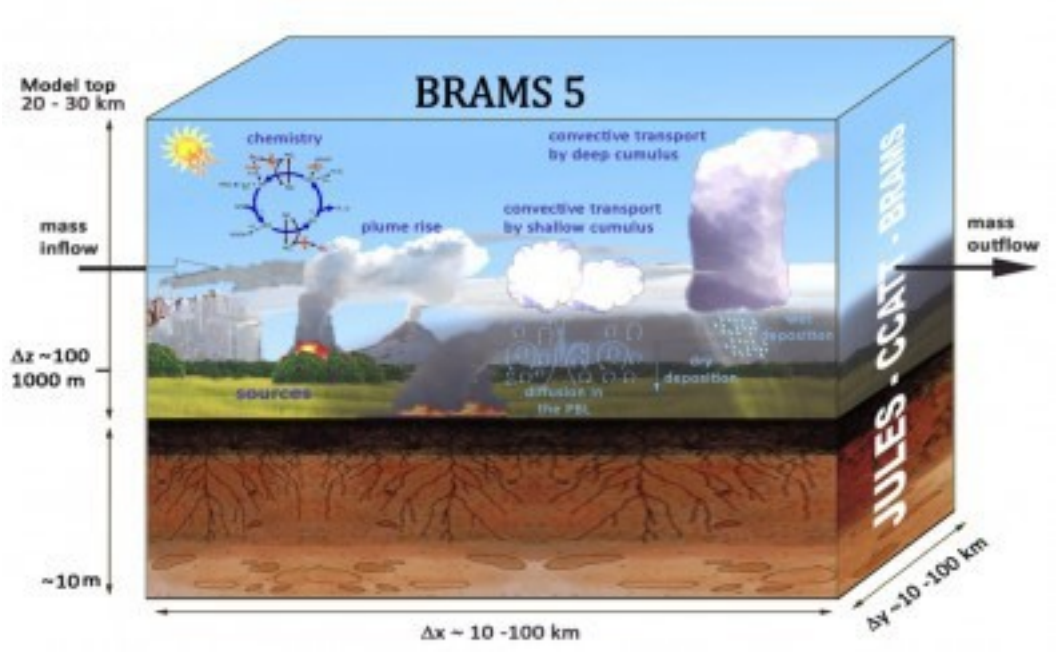

GeraDP

Users Guide – version 5.0

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1. Introduction:

The GeraDP is a tool used to convert files from atmospheric initial conditions available in GRIB format to the specific format for BRAMS. This guide aims to present the process of installing and running the GeraDP.

2. Structure:

GeraDP contains the following files:

a) geraDP.sh – main execution script.
b) geraBIN.gs – GRADS script for intermediate data processing.
c) geraDP.f90 – Fortran file for post data processing.

3. Execution and Installation Instructions:

a) PHASE I – Compilation and environment construction.

Requirements:

- UNIX/Linux like Operational System;
- GRADS Program;
- Fortran Compiler.

Download GeraDP from the “Atmospheric State” section on the left hand side of the page http://brams.cptec.inpe.br/input-data/.

Unzip the downloaded file in your working area, e.g: /dados/fontes:

```
→ cd /dados/fontes
```

```
→ tar zxvf geraDP.gz
```

Compile geraDP.f90 file using geraDP.x as the binary file name:

```
→ gfortran -o geraDP.x geraDP.f90
```

Copy the files geraDP.sh, geraBIN.gs and geraDP.x to the directory where GRIB and the CTL files are. The CTL file is required to open the GRIB files in GrADS.

The CTL file is not available at the grib files, then you must create the file with the g2ctl application.

Visit http://www.cpc.ncep.noaa.gov/products/wesley/g2ctl.html for information and download the application.

b) PHASE II – Execution

Execute the geraDP.sh script with the 12 parameters, as follow:

```
/geraDP.sh 1 2 3 4 5 6 7 8 9 10 11 12
```

Example: /geraDP.sh **gfs025gr.pgrb2.2016041800.ctl uvel vvel temp zgeo umrl 41 -70 29 250 358 N**

where each number refers to a parameter listed below:

1. CTL template file name using the GRIB files. In the example gfs025gr.pgrb2.2016041800.ctl;
2. Zonal wind variable. In the example with name *uvel* (m/s) defined in CTL;
3. Meridional wind variable. In the example with name *vvel* (m/s) defined in CTL;
4. Temperature variable. In the example with name *temp* (K) defined in CTL;
5. Geopotencial hight variable. In the example with name *zgeo* (m), defined in the CTL;
6. Relative humidity variable. In the example with name *umrl* (%), defined in the CTL;
7. Number of levels defined in the CTL; In the example with 41 levels;
8. Initial Latitude desired to DP. Use -999 to use all grid defined in CTL;
9. Final Latitude desired to DP. Use -999 to use all grid defined in CTL;
10. Initial Longitude desired to DP. Use -999 to use all grid defined in CTL;
11. Longitude end desired to DP. Use -999 to use all grid defined in CTL;
12. **I)** Use "N" as default to generate the file intermediate grads binary file "to_dp.gra", remove it at the end of the process and generate the final files of DP's in one step. **II)** Use the parameter "S" to generate only the intermediate grads binary file "to_dp.gra" and not remove it at the end of the process. Using "S", the DP end files are not generated. To generate the DP end files from the intermediate file "to_dp.gra", use the "Y" parameter.

Input files:

- Boundary and Initial Condition Atmospheric files:

The Boundary and Initial Condition Atmospheric files are files from the GFS, download-able from ttp://nomads.ncep.noaa.gov/pub/data/nccf/com/gfs/prod/ .

CPTEC operation system uses files like gfs.t<HH>z.pgrb2.0p25.f*, which are in folders like gfs.<YYYYMMDDHH>.