Universitat de les Illes Balears

Grupo de Meteorología
Departament de Física
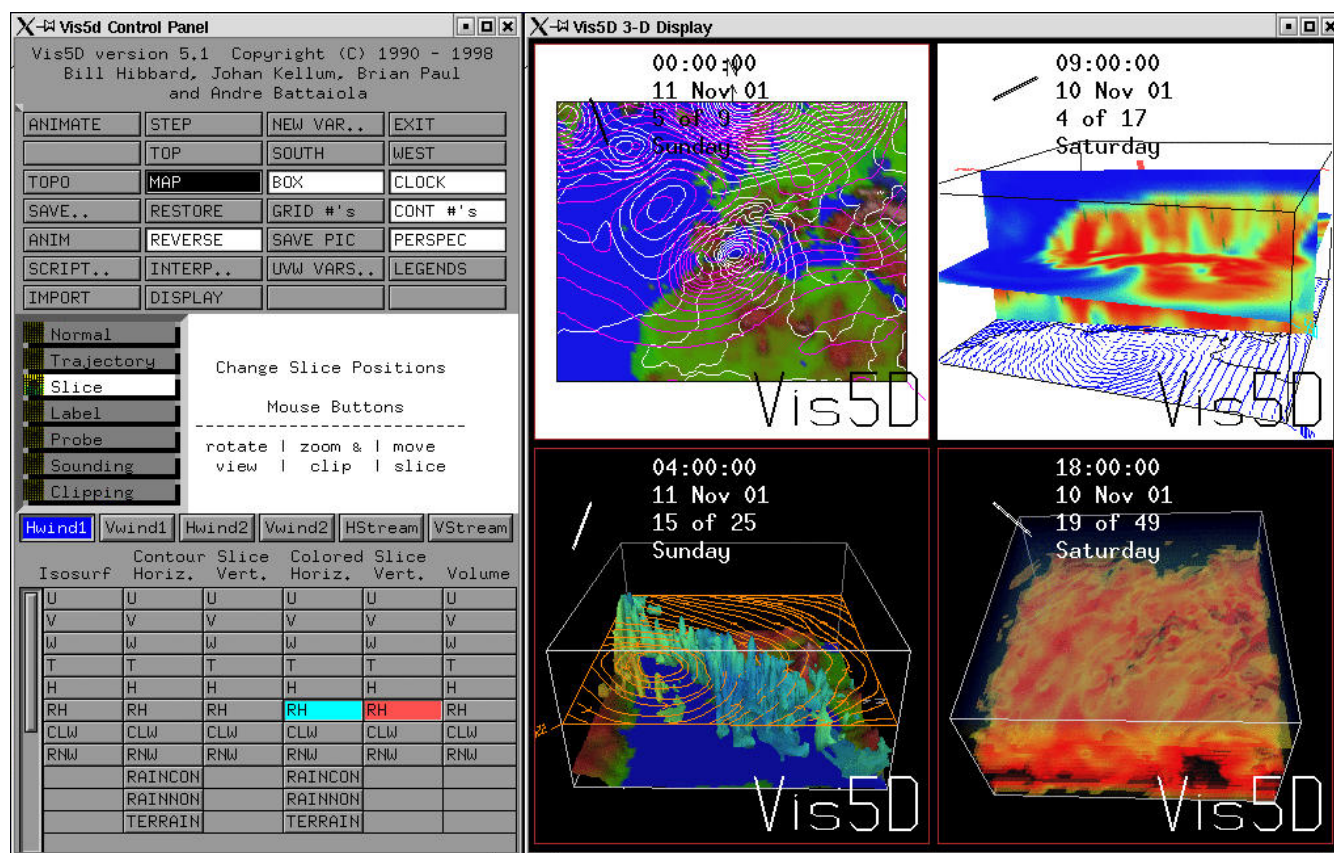Ctra. Valldemossa km 7.5
07122 Palma de Mallorca

SOFTWARE TO CONVERT YOUR MM5-v3 MODELING SYSTEM OUTPUT FIELDS INTO VIS5D VISUALIZATION SYSTEM DATA

Vis5D is a system for interactive visualization of large 5-D gridded data sets such as those produced by numerical weather models. One can make isosurfaces, contour line slices, colored slices, volume renderings, etc of data in a 3-D grid, then rotate and animate the images in real time. There's also a feature for wind trajectory tracing, a way to make text anotations for publications, support for interactive data analysis, etc. (see some examples below).
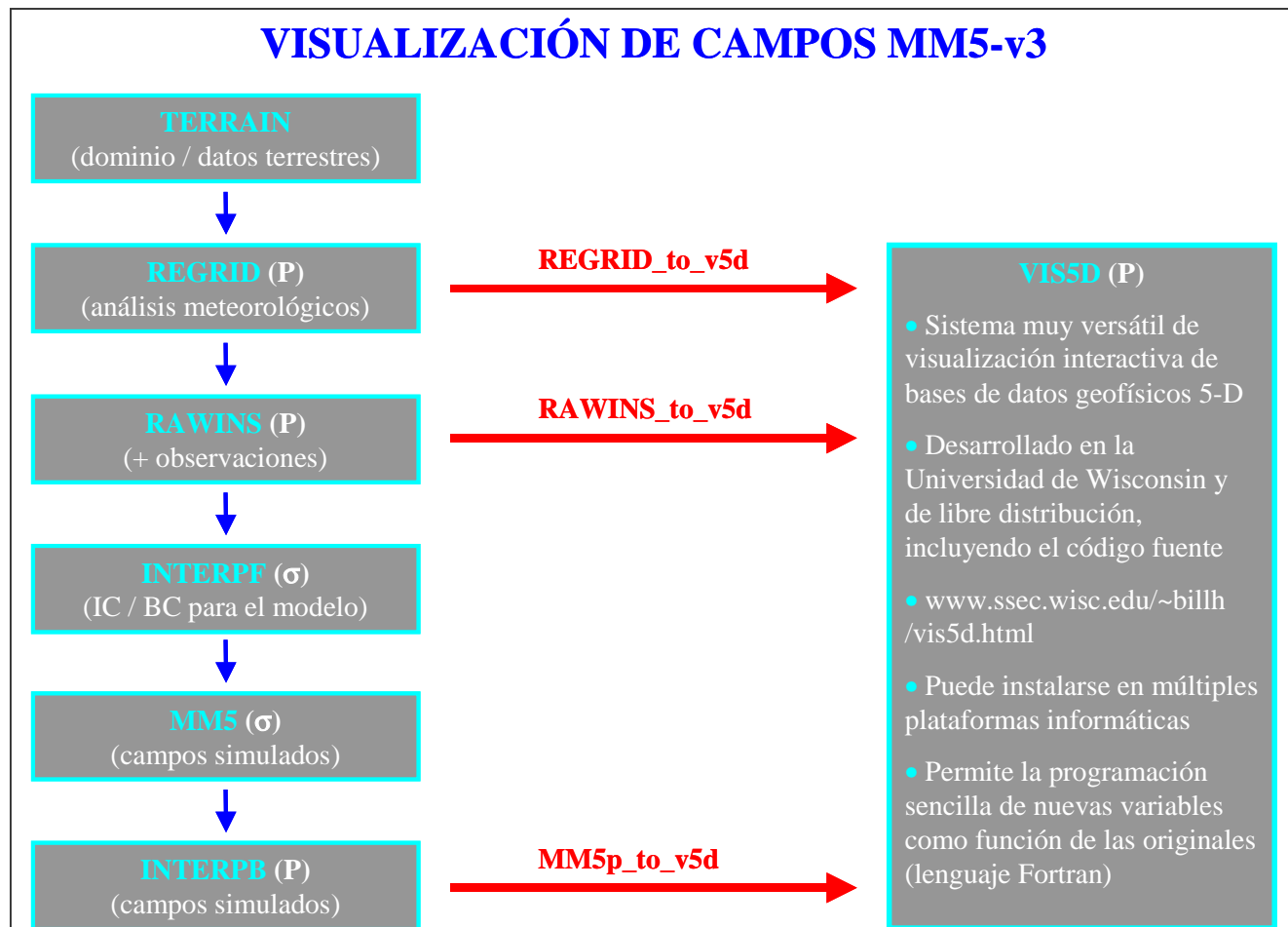
Vis5D was written by the Visualization Project at the University of Wisconsin-Madison Space Science and Engineering Center (SSEC) and its development was supported by NASA and the EPA You can find the Vis5D source code and documentation, and the details on how to install Vis5D on your computer system at:

http://www.ssec.wisc.edu/~billh/vis5d.html   (see also the attached README file)

Once installed Vis5D on your computer system, the provided fortran-language programs *REGRID_to_v5d*, *RAWINS_to_v5d* and *MM5p_to_v5d* will allow you to convert the isobaric output data from the MM5-v3 modules REGRID, RAWINS and INTERPB, respectively, into Vis5D format (see the scheme below).

VISUALIZACIÓN DE CAMPOS MM5-v3

TERRAIN
(dominio / datos terrestres)

↓

REGRID (P)
(análisis meteorológicos)

→ **REGRID_to_v5d** →

↓

RAWINS (P)
(+ observaciones)

→ **RAWINS_to_v5d** →

↓

INTERPF (σ)
(IC / BC para el modelo)

↓

MM5 (σ)
(campos simulados)

↓

INTERPB (P)
(campos simulados)

→ **MM5p_to_v5d** →

VIS5D (P)

• Sistema muy versátil de visualización interactiva de bases de datos geofísicos 5-D

• Desarrollado en la Universidad de Wisconsin y de libre distribución, incluyendo el código fuente

• www.ssec.wisc.edu/~billh /vis5d.html

• Puede instalarse en múltiples plataformas informáticas

• Permite la programación sencilla de nuevas variables como función de las originales (lenguaje Fortran)

USE OF THE CONVERSION PROGRAMS

1) *REGRID_to_v5d* (files *REGRID_to_v5d.f* / *REGRID_to_v5d.f.m* / *pars.REGRID*):

> *Compilation*:   *make -f REGRID_to_v5d.f.m*

> *Parameters*:   Specify in *pars.REGRID* where is your REGRID_DOMAIN file, indicate dates and times, and select the meteorological variables of interest and number of times to pass a filter

> *Run*:   *REGRID_to_v5d pars.REGRID outputfile.v5d*

> *Note*:   Before compilation, make sure that the path to your vis5d directory included in *REGRID_to_v5d.f* and *REGRID_to_v5d.f.m* is the proper one (change /usr/local/vis5d if necessary)

> *Note*:   Currently, only the Lambert Conformal map projection of MM5 data is supported

2) *RAWINS_to_v5d* (files *RAWINS_to_v5d.f* / *RAWINS_to_v5d.f.m* / *pars.RAWINS*):

      Compilation: *make   -f   RAWINS_to_v5d.f.m*

      Parameters: Specify in *pars.RAWINS* where is your RAWINS_DOMAIN file, indicate dates and times, and select the meteorological variables of interest and number of times to pass a filter

      Run: *RAWINS_to_v5d   pars.RAWINS   outputfile.v5d*

      Note: Before compilation, make sure that the path to your vis5d directory included in *RAWINS_to_v5d.f* and *RAWINS_to_v5d.f.m* is the proper one (change /usr/local/vis5d if necessary)

      Note: Currently, only the Lambert Conformal map projection of MM5 data is supported

3) *MM5p_to_v5d* (files *MM5p_to_v5d.f* / *MM5p_to_v5d.f.m* / *pars.MM5p*):

      Compilation: *make   -f   MM5p_to_v5d.f.m*

      Parameters: Specify in *pars.MM5p* where is your MMOUTP_DOMAIN file, indicate dates and times, and select the meteorological variables of interest and number of times to pass a filter

      Run: *MM5p_to_v5d   pars.MM5p   outputfile.v5d*

      Note: Before compilation, make sure that the path to your vis5d directory included in *MM5p_to_v5d.f* and *MM5p_to_v5d.f.m* is the proper one (change /usr/local/vis5d if necessary)

      Note: Currently, only the Lambert Conformal map projection of MM5 data is supported

NOTE: Conversion programs ***DATAGRID_to_v5d***, ***RAWINS_to_v5d*** and ***MM5p_to_v5d*** for MM5-v2 data (different format than v3 data) are also available

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