

Updates on WRF Pre- and Post-Processing Programs

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1. Introduction

Since WRF Version 2.0 release May 2004, there has been some new development and improvement made to the pre- and post-processing programs. These are going to be summarized here.

2. WRFSI Version 2.1

The major development of WRFSI is to add the capability of using GRIB 2 data. Once it is completed, it will support both pressure level data and native coordinate data. Currently only the data from GFS (Global Forecasting System from the National Center for Environmental Prediction) is being tested. This development is carried out by the Forecasting System Laboratory of NOAA.

Other improvements in the SI include 1) allowing degribbed files to have time interval less than 1 h; 2) adding compile options for Intel compiler on Linux and SGI Altix, PGI compiler on AMD Opteron and XLF compiler for Mac OS computers; and 3) new data source from ECWMF's TOGA data. We are also looking into adding data sources from ECWMF's reanalysis data and NCEP's North American Regional Reanalysis data.

3. Graphics Tools

The main improvement in the graphics area is to add a plotting capability for both the two-dimensional and three-dimensional idealized simulation data in RIP4 and WRF2GrADS programs. RIP4 can also work with the WRF input file, *wrfinput_d0**. Some new fields have been added to the RIP4 code, such as the maximum simulated radar reflectivity fields, 2 m temperature, dew-point temperature and 10 m winds as the surface fields.

NCL (NCAR Graphics Command Language) scripts are also undergoing a significant update. We hope this will improve the capability of data analysis, especially for long model runs.

4. Conversion Programs

Two conversion programs will be added to the supported software list to enhance the pre-processing capability for WRF-ARW. One of these is a conversion program that converts the intermediate-format data from MM5-Regrid-Pregrid program to the intermediate-format data from SI-

GRIB_PREP. The other program converts MM5 pressure-level data (e.g. REGRID and RAWINS/LITTLE_R output) to SI-HINTERP format. A separate VINTERP can be run prior to running WRF-REAL. These two programs will be available from the WRF-ARW download page. We hope this will aid the transition for MM5 users to WRF.

5. ARW Documentation

Last summer, we finished the first version of the User's Guide. This User's Guide has been under constant update over the year, and will get an update again for the upcoming WRF 2.1 release. The User's Guide provides instructions on how to use various programs in the modeling system.

The other significant document is the technical documentation of the ARW, which has just been completed, and is now available on the Users' Page.

6. Development of New Pre-processing Software

This is a new development currently underway. The major objectives of this new endeavor are 1) to provide a more general program to support pre-processing; 2) to allow for easy user-input of both the meteorological and terrestrial data; and 3) to make the program run more efficiently for large grids.

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