Part VI

Web site Information

The content is organized by folders numbered according to the chapters of the book. In each folder, the MATLAB™ programs mentioned in each chapter are found and can be edited. The files contain comments beginning with % like `% this is a comment`. This helps identifying the parameters to be changed by the students and the meaning of variables and loops.

To execute the programs, the `Current Folder` of MATLAB™ must be set to the chapter under investigation.

The distribution contains MATLAB™ scripts rather than programs with a graphical user interface. This is a choice made in order to get students used to programming and automatic chaining of operations encountered in leading modeling centers. The programs are not designed to exploit and optimize MATLAB™ features but rather serve as illustrations of the numerical schemes and not programming languages. Hence, sometimes loops are spelled out in the programs and sometimes more efficient direct matrix operations are used. The MATLAB™ expert users certainly would like to modify some of the codes to replace loops of finite differencing over the domain by a sparse matrix multiplication, where the sparse matrix contains the discretisation constants. Also sometimes short programs are written for which MATLAB™ functions exist.

When the execution of programs to prepare animations is time consuming, the distribution contains some precalculated movies in Quicktime `.mov` format in folder `animations`.

For students not having access to MATLAB™, a freely available clone exists and is called OCTAVE (`http://octave.sourceforge.net`). Most operations used in the programs are portable between MATLAB™ and OCTAVE, only plotting parts might require adaptations.

Input data are stored predominantly in NETCDF format in folder `nc`. Files in NETCDF format are very common in the ocean and atmosphere modeling community because they are platform independent and self-explaining. For NETCDF support installations and testing, please consult the `README.txt` file.

Because the programs write out some results and images on disk as in real modeling centers, the user cannot run MATLAB™ from a CD but needs to execute programs in a folder with writing access.

Finally, the authors may be contacted for updated versions of the distribution content and additional explanations on the programs.