## README\_Rocotlib\_V3p2 file - P. Robert, October 5, 2020

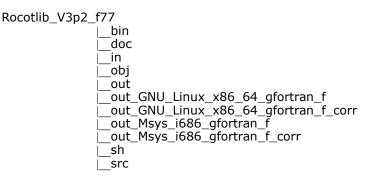
The Rocotlib pack includes 4 distributions, corresponding to the Rocotlib software in 4 languages:

Rocotlib\_V3p2\_f77 Rocotlib\_V3p2\_f90 Rocotlib\_V3p2\_C Rocotlib\_V3p2\_IDL

The F77 version is the native development code. Conversion in C has been done with **f2c** software (makefile use f2c.lib). Conversion in F90 has been done with hands, as such as IDL version.

## 1) F77, F90 and C distribution

Each package is on the model:



The user has to copy on his machine the desired distribution.

- **src** directory includes source of the library (as rocotlib\_V3p2.f), and sources of many test and example programs, in particular rocot\_example.f and rocot\_check.f.
- **obj** directory contains the .o or .obj files created after compilation by the makefile
- **bin** contains the .exe files
- in contains the input parameters required by the .exe file, while **out** contains the result of execution.
- **sh** directory contains the shell launching the exe files, such as .exe < .in > .out
- doc contains documentation, in particular the user manual doc\_ROCOTLIB\_V3p2.pdf

Other out directories are used to comparisons between the 4 distributions (see hereafter).

*Note that the user can use only the library rocotlib\_V3p2.f,* nevertheless it is recommended to copy all the package, compile and run at least the example and test program:

make clean make all sh/rocot\_example.sh sh/rocot\_check.sh or sh/RUN\_ALL.sh to run all the tests

Please note that the makefile is configured to use gfortran for f77 and f90 version, and gcc for C version. User can change it as he wants.

## 2) IDL distribution

The IDL package is as below:

Rocotlib V3p2 IDL

|\_\_doc |\_\_in |\_\_out |\_out\_GNU\_Linux\_x86\_64\_IDL |\_out\_GNU\_Linux\_x86\_64\_IDL\_corr |\_out\_Msys\_i686\_IDL |\_out\_Msys\_i686\_IDL\_corr |\_pro |\_sh **pro** directory contains the source of the library and test programs, in IDL language. Other directories are as previous. All tests are run by sh/RUN\_ALL.sh, available with IDL demo mode (free).

## 3) Tests between results according distributions

The user can also download the test directory:

Rocotlib\_test\_compare\_f77-f90-C-IDL

In this directory, comparison between distribution has been done by using the Linux "diff" command on all the .out result files. As written format can be different (for instance -0.123e+4 and -1.23E+3) the out files are corrected by the shell save\_and\_correct\_out.sh present in each distribution.

Test has been done on two platform/system: GNU\_Linux\_x86\_64 and Msys\_i686 Windows. Results can be read on the following files:

resu\_compare\_out\_GNU\_Linux\_C\_IDL.txt resu\_compare\_out\_GNU\_Linux\_f90\_C.txt resu\_compare\_out\_GNU\_Linux\_f90\_IDL.txt resu\_compare\_out\_GNU\_Linux\_f\_IDL.txt resu\_compare\_out\_GNU\_Linux\_f\_f90.txt resu\_compare\_out\_Msys\_C\_IDL.txt resu\_compare\_out\_Msys\_f90\_C.txt resu\_compare\_out\_Msys\_f90\_IDL.txt resu\_compare\_out\_Msys\_f90\_IDL.txt resu\_compare\_out\_Msys\_f\_0\_IDL.txt resu\_compare\_out\_Msys\_f\_0\_IDL.txt resu\_compare\_out\_Msys\_f\_0\_IDL.txt resu\_compare\_out\_Msys\_f\_0\_IDL.txt

User can rebuild these tests by downloading the 4 distributions and Rocotlib\_test\_compare\_f77-f90-C-IDL directory and then run successively the 4 shells:

A-make\_distrib\_f77\_f90\_C.sh B-run\_all\_tests\_f77\_f90\_C\_IDL.sh C-save\_and\_correct\_all\_out.sh D-compare\_all\_tests\_results.sh

Shell A does the compilation of each distribution, B runs all the tests, C corrects the output files, and D runs successively:

run\_compare\_f77\_f90.sh run\_compare\_f77\_C.sh run\_compare\_f90\_C.sh run\_compare\_f77\_IDL.sh run\_compare\_f90\_IDL.sh run\_compare\_C\_IDL.sh

All files resu\_compare\_out will be re-created on the machine/system of the user.

For any problem or suggestion:

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