README GRSmap

Create the following folders

./Input

./Output

./GMT

./Shell

Input file

Configuration file

1. ./Parameters/configure.txt
   Self esplicative
2. ./Parametri/epicentro-mag.dat
   Longitude Latitude Magnitude Depth Vs30

Input file

1. Input/input-XX.dat
   Where XX is acc vel sa03 sa1 and sa3
   Each file contains
   Station Longitude Latitude XX(m/s2 or m/s) Vs30
2. ./Shell/shell-tot-site.sh
   This shell is called inside GRSmap2.1 and must be placed in ./Shell
3. stations-site-identify.sh
   This shell must be run to assign the Vs30 at each station and to the epicenter if you don't have the single Vs30 but you have a grd file from which they can be extrapolated.
   The shell must be open and modified to customize the application.
   The grd file must be placed in the ./VS30 folder.

Output file

1. ./Output/cal.dat

   Contains the theoretical ground motion parameter as function of the distance

2. ./Output/station.dat
3. ./Output/station-bed.dat
4. ./Station_Flag/st-flag-XX.dat

5. ./GMT/st-flag-XX_gmt.dat
6. ./Output/baricentri.dat
7. Output/baricentri_test.dat
8. GMT/baricentri_gmt.dat
9. Output/griglia.dat
10. Output/griglia-optima.dat
11. GMT/baricentri_gmt.dat
12. GMT/griglia-fant.dat
13. ./Output/shakemapXX.dat

To compile the software use:

gfortran -o GRSmap2.1 GRSmap2.1.f

In case you suse the software please cite:

Convertito, V., De Matteis, R., Cantore, L. *et al.* Rapid estimation of ground-shaking maps for seismic emergency management in the Campania Region of southern Italy. *Nat Hazards* **52**, 97–115 (2010). https://doi.org/10.1007/s11069-009-9359-2