

# RED2CON – REDFIT GUI extension

## – Manual –

This graphical user interface has been developed by Boris Priehs as part of a bachelor thesis at the Faculty of Geosciences at the University of Bremen, Germany.

It uses the commercial software MATLAB 7.0.1 to set REDFIT v3.8 configurations and visualize the results of the REDFIT spectral analysis.

### 1) Installing the GUI

- Copy the whole content of the ZIP-archive “red2con.zip” into a working directory of MATLAB.  
CAUTION: “red2con.m” and “red2con.fig” must reside in the same directory.

### 2) Starting the GUI

- Start RED2CON by entering “red2con” in the MATLAB Command Window.
- If MATLAB replies an error like “??? Undefined function or variable 'red2con' .”, make sure RED2CON resides in the Current Working Directory.

### 3) Using the GUI

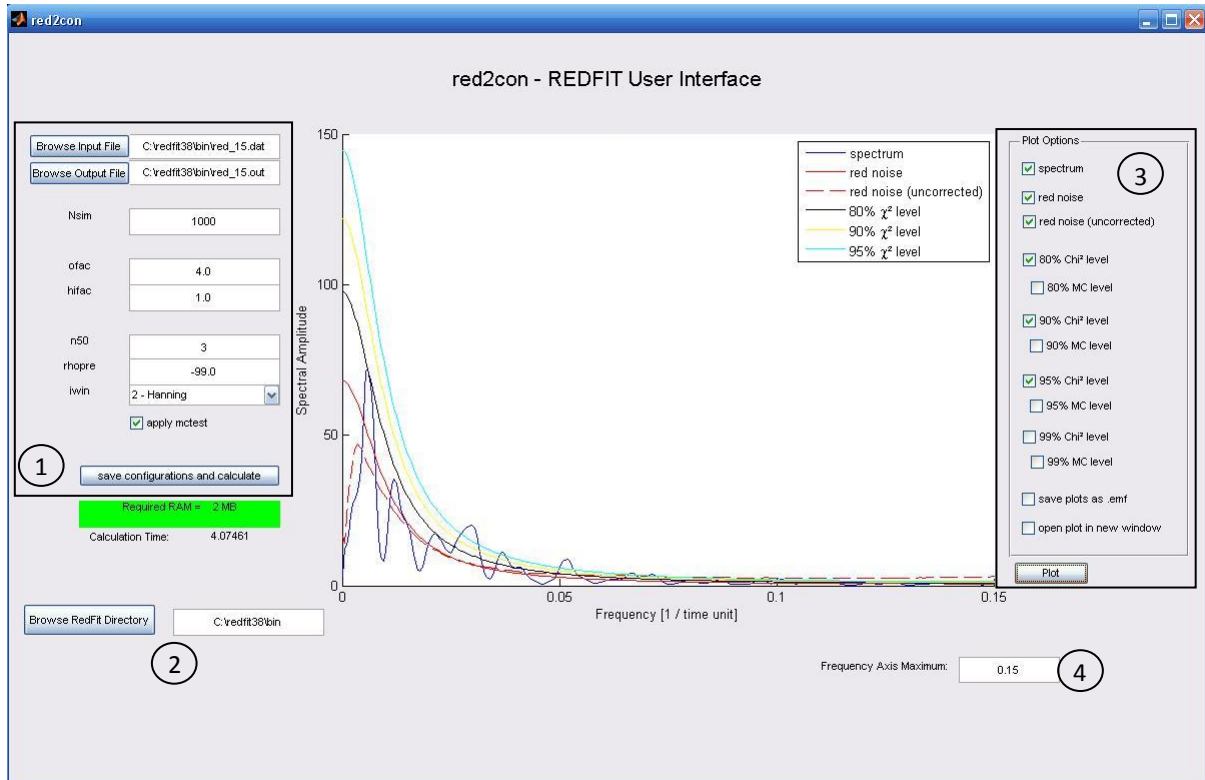
A screenshot of RED2CON Interface is shown in Fig. A1.

It is necessary to set the directory which contains your REDFIT.EXE (No. 2 in Fig. A1). Otherwise, RED2CON cannot start REDFIT.

- On the left side of the GUI, (No. 1 in Fig. A1), you can make all the settings for the REDFIT configuration file. When pushing the button “save configurations and calculate”, RED2CON will write the configurations into a file called “red2con.cfg” and then start REDFIT to do the calculations.

RED2CON creates three “.mat” files in your MATLAB working directory. These files contain the settings concerning the location of the REDFIT directory and the input/output files. They will be used when you start red2con the next time. The mat-files are created by using one of the “path setting buttons”. The mat-files are named “input.mat”, “output.mat” and “readdir.mat”.

**CAUTION:** REDFIT does not accept any white spaces in the input or output path name.



**Fig. A1:** Screenshot of GUI RED2CON. ( 1 ) REDFIT parameter setting, ( 2 ) REDFIT directory setting, ( 3 ) Plot options setting, ( 4 ) frequency zoom.

- On the right side of the GUI (No. 3 in Fig. A1), you can change the plot settings using the checkboxes. You can zoom into the lower frequencies by using the “Frequency Axis Maximum” edit box (No. 4 in Fig. A1). When activating the checkbox “save plot as .emf”, MATLAB will export the plot as enhanced meta file figure and save it in your REDFIT directory defined in the GUI. The file name of the figures is consistent with the file name chosen for the REDFIT output file.

Unfortunately, there seems to be a little deficiency in newer MATLAB versions. Here, when activating the checkbox “save plot as .emf” without activating “open plot in new window”, MATLAB will save a figure of the whole GUI instead of only saving the plot.

- This GUI has been tested successfully with REDFIT v3.8 (and MATLAB 7.0.1 and above). If an error occurs, it may be helpful to take a look at the MATLAB Command Window. If RED2CON aborts unscheduled, it is possible that the MATLAB working directory has been changed to your REDFIT directory. Set the MATLAB working directory back to the directory containing “red2con.m” in this case.
- Further information on REDFIT can be found in  
Schulz, M. and Mudelsee, M. (2002) REDFIT: Estimating red-noise spectra directly from unevenly spaced paleoclimatic time series. *Computers and Geosciences*, 28, 421-426.

Newest Versions of REDFIT are available at

<http://www.geo.uni-bremen.de/geomod/staff/mschulz/#software>