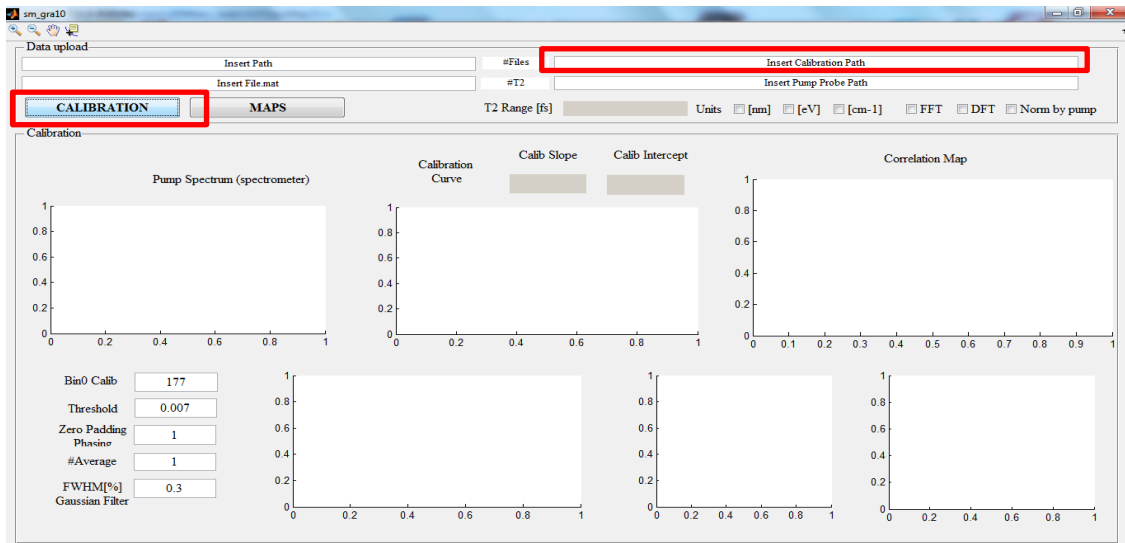
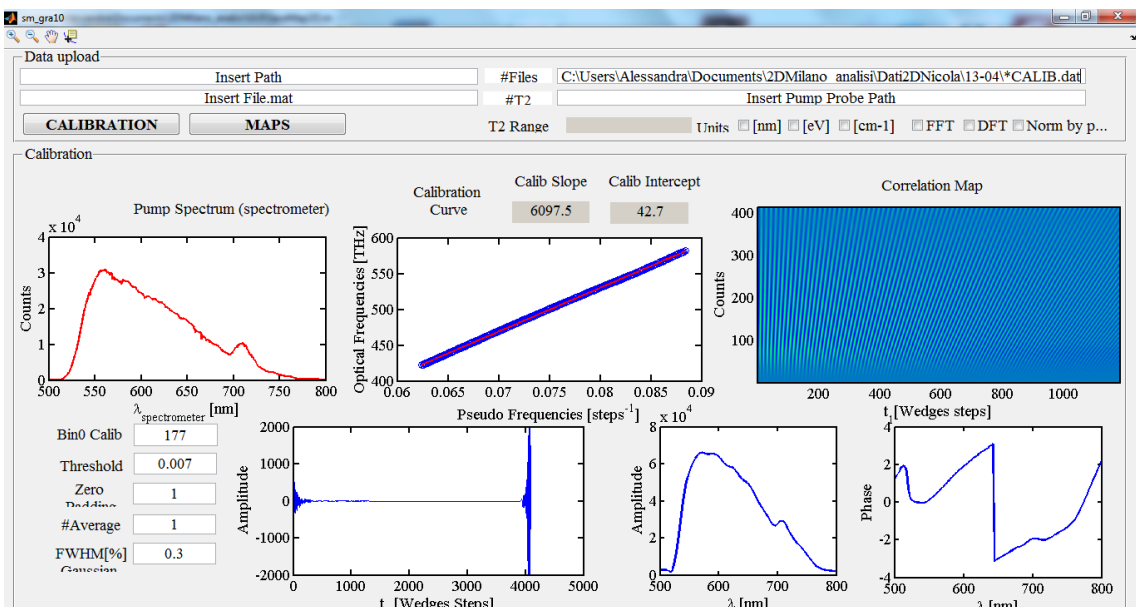


- 1) Run sm\_gra10 in Matlab command windows
- 2) Press Calibration button and upload the complete path for the calibration file. The box will appear red if the path is not correct.

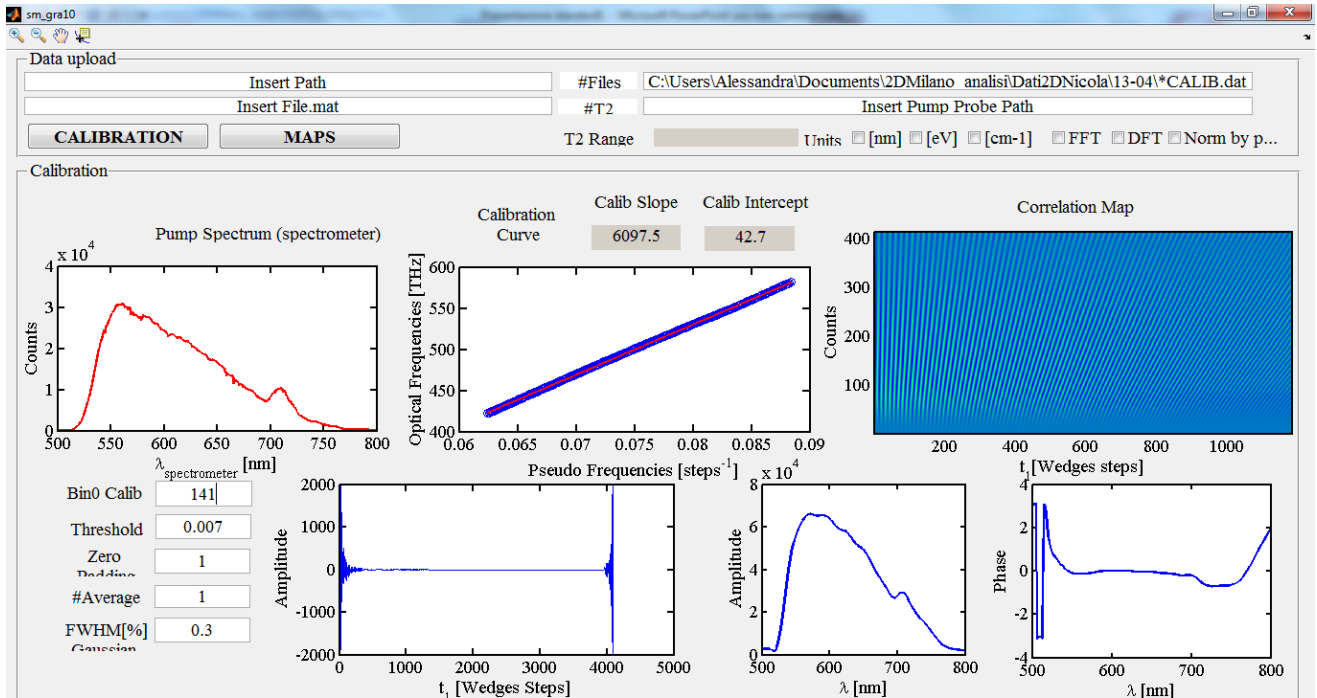


3) The GUI will show the Pump spectrum from spectrometer, the calibration curve (necessary for the determination of the pump-axis), the correlation map from the CCD and the interferogram for the photodiode. Then amplitude and phase of the interferogram are plotted.

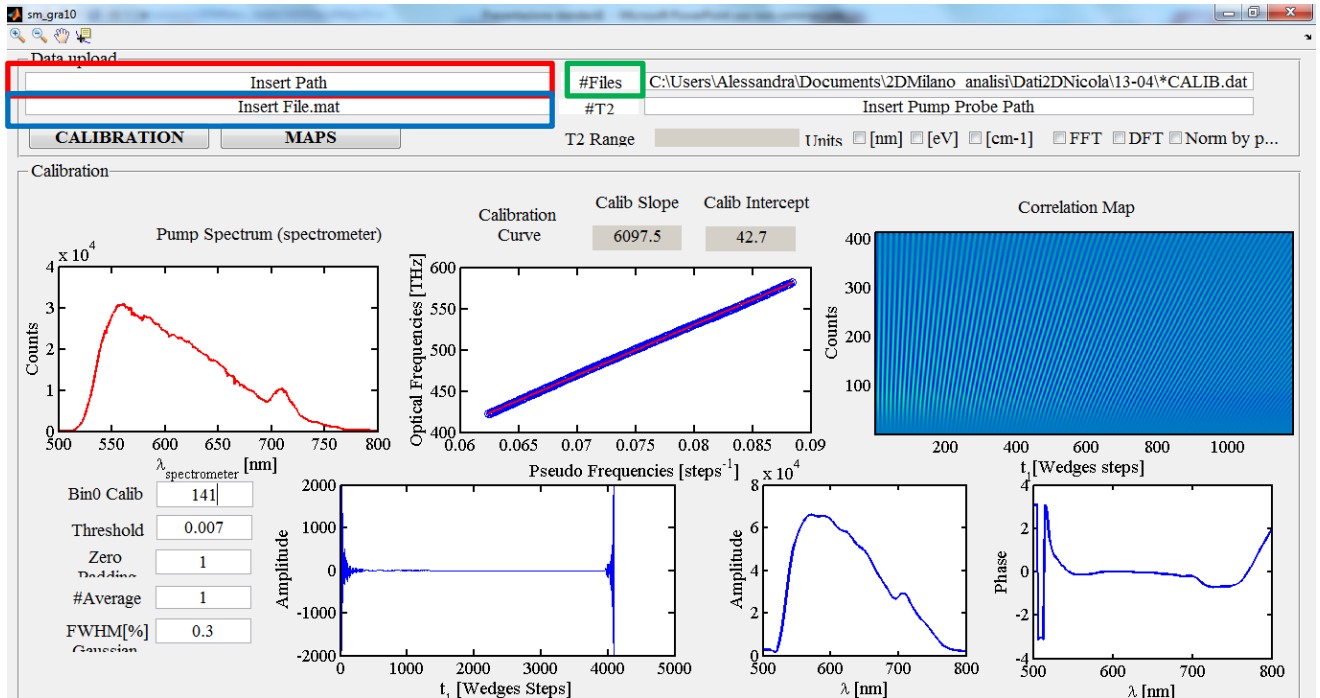
Bin0 Calib is the motor step corresponding to  $t_1=0$  and it has to be chosen looking at the flat, that has to be flat over the entire spectrum range. Each time you want to change Bin0 Calib, you have to write the number and press Enter.



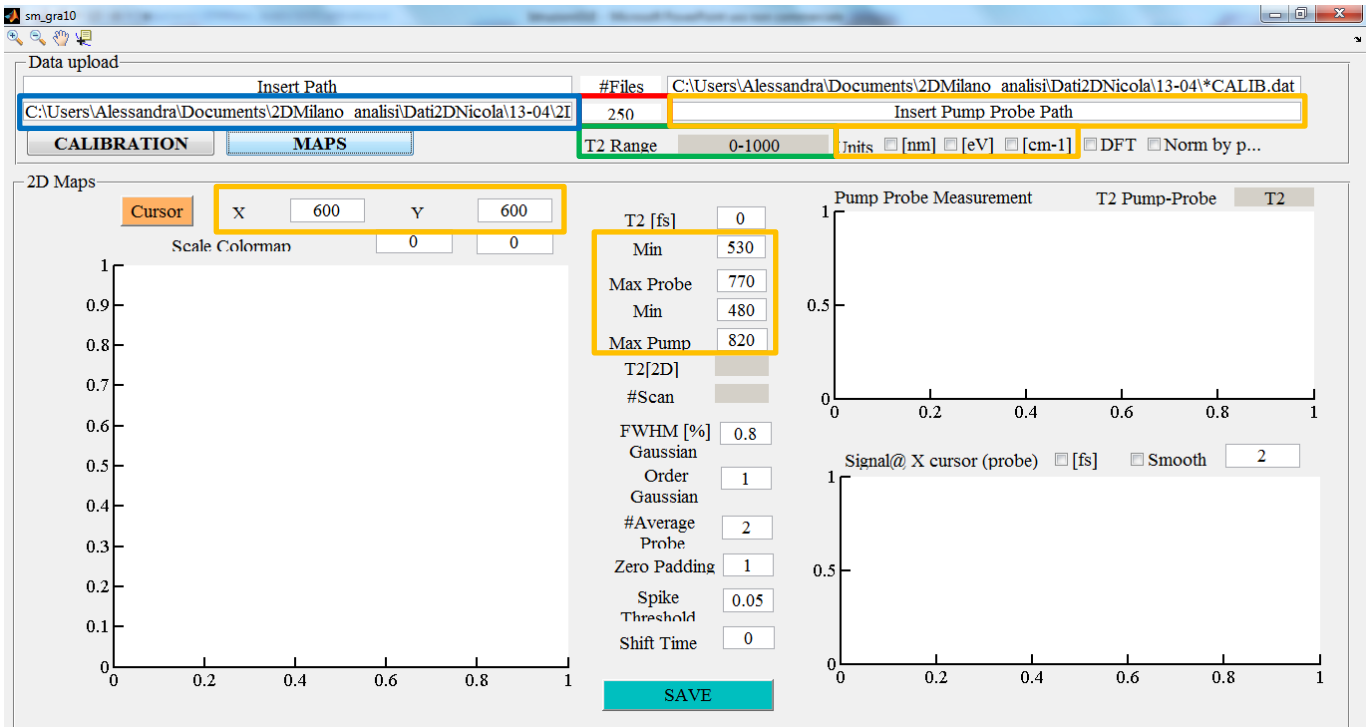
4) In performing the Calibration curve and the Fourier transform, you can change the following parameters: Zero Padding, #Average Threshold, FWHM [%] Gaussian



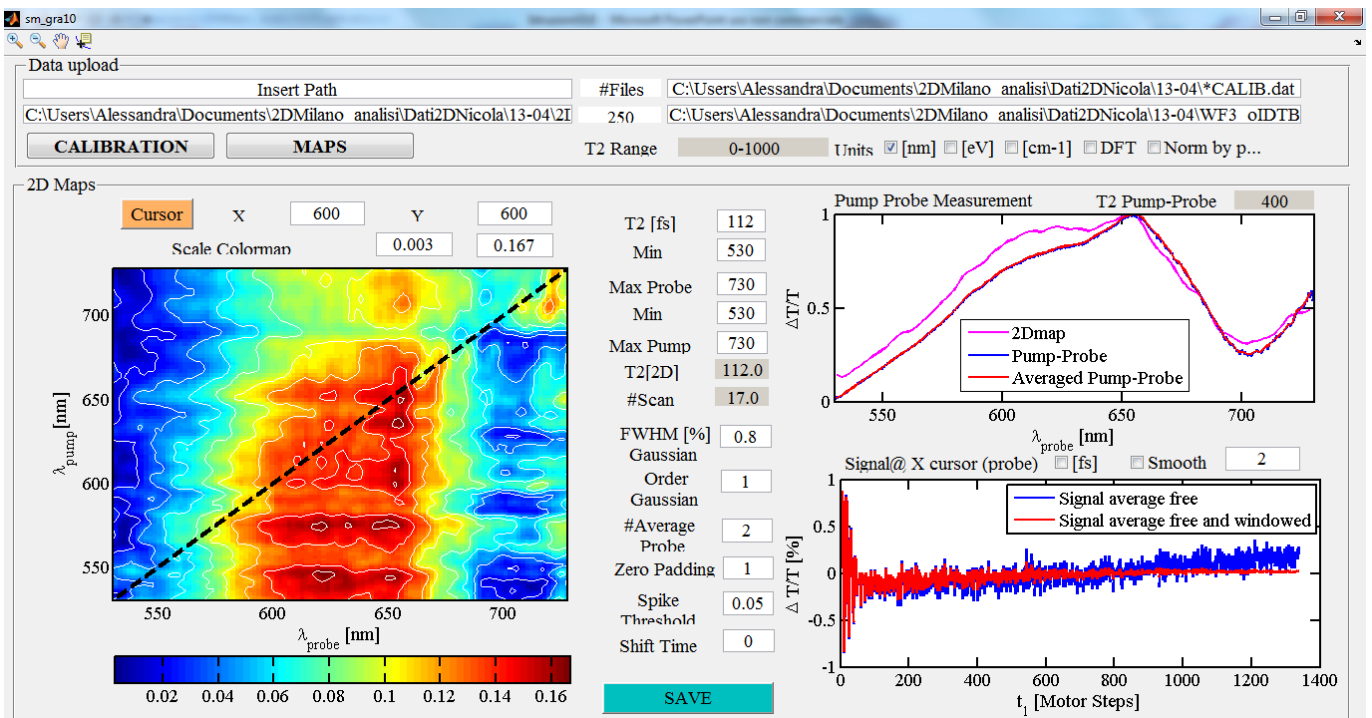
5) When you analyze the set of 2D data for the first time, insert the path in the red box (ex. 2D\_WF3\_oIDTBR\_fine\_t2\_\*fs). It will create a .mat file in the same folder with all 2D measurements corresponding to the different t2 and it will print its file path in the blue box. It prints the number of file found in the green box.



6) Insert the path of the .mat file in the blue box. It will upload the data and print 1) the number of T2 measured (red box) 2) the T2 range (green box). Insert the pump probe path file, the Units and the range of pump and probe axis (orange boxes).

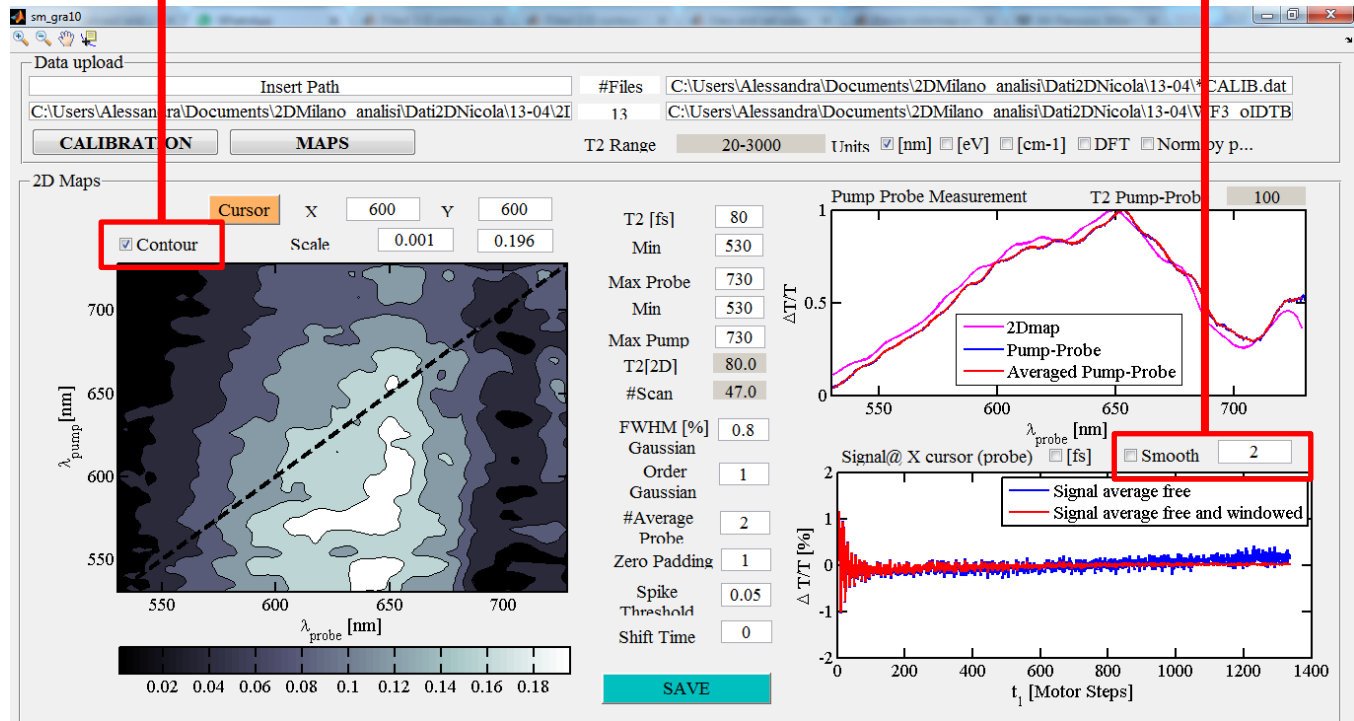


7) Insert the T2 corresponding to the map you're interested in. In the Gui, it is plotted: a) 2D map b) comparison between Pump probe measurements and integration of 2D Map over pump axis c) Signal as a function of t1 at the probe wavelength specified by the X position of the cursor.



Possibility to change the colour palette in colormap

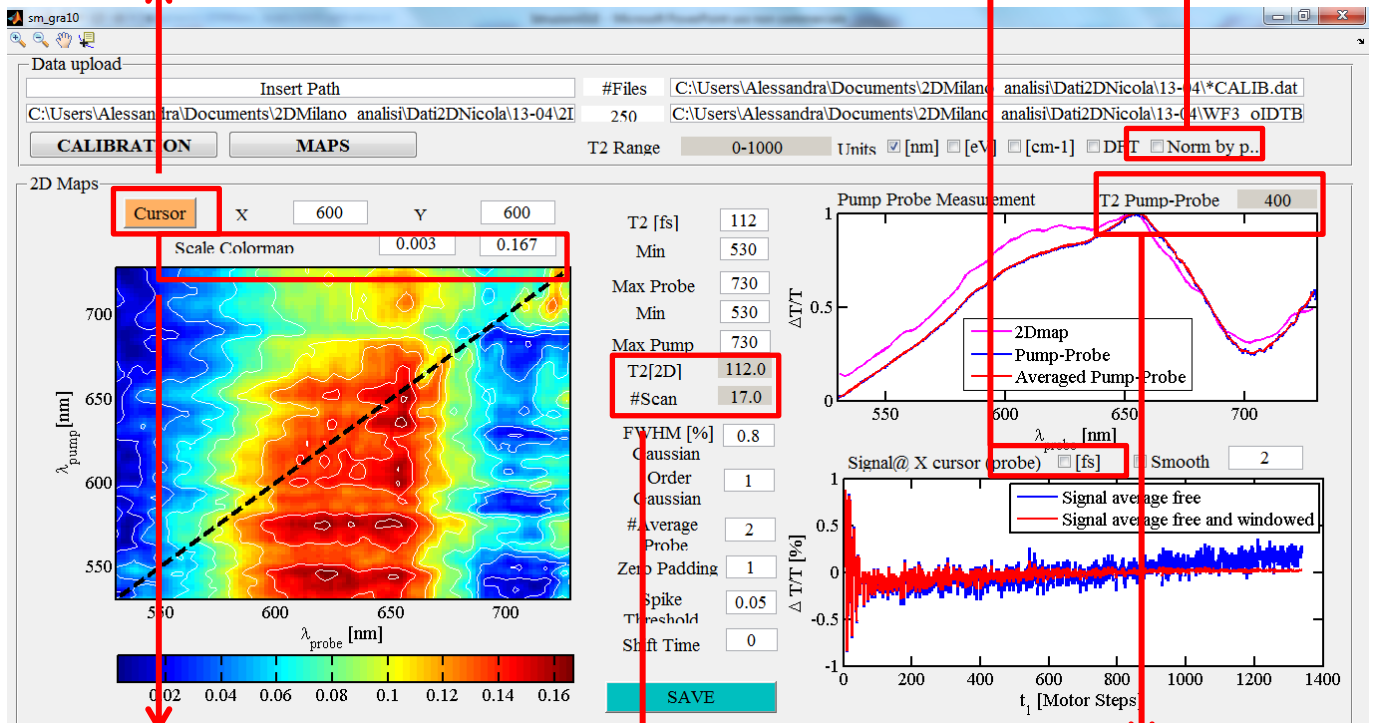
Possibility to smooth data by a median filter (better to choose an odd number of points)



Press on cursor to change from the map the t1 trace to plot

Convert the x-axis from motor steps into fs

Possibility to normalise for the pump Intensity



Possibility to change the range /saturation of the colormap

Closer T2 for 2DMeasurements and corresponding number of Scans

Closer T2 for Pump Probe

Parameters for the Unilateral Gaussian filter used for the t1 trace. It is possible to choose the order of the Gaussian and its FWHM in % (the real FWHM is  $0.8 \times \text{Number of Motor Steps}$ )

#Average Probe=#of probe wavelengths that we average over  
Zero Padding variable for the FFT  
Spike threshold=parameter to clean spikes in the t1 trace  
Shift time= possibility to introduce an offset, to take into account a shift in t2 between 2D and Pump-probe

Press button SAVE to save a file.mat with all the 2D Map analysed considering the analysis parameters inserted in the GUI.

