

## USING FREDALAX

Getting Started (2 - 5)

Plot 1 (7- 8)

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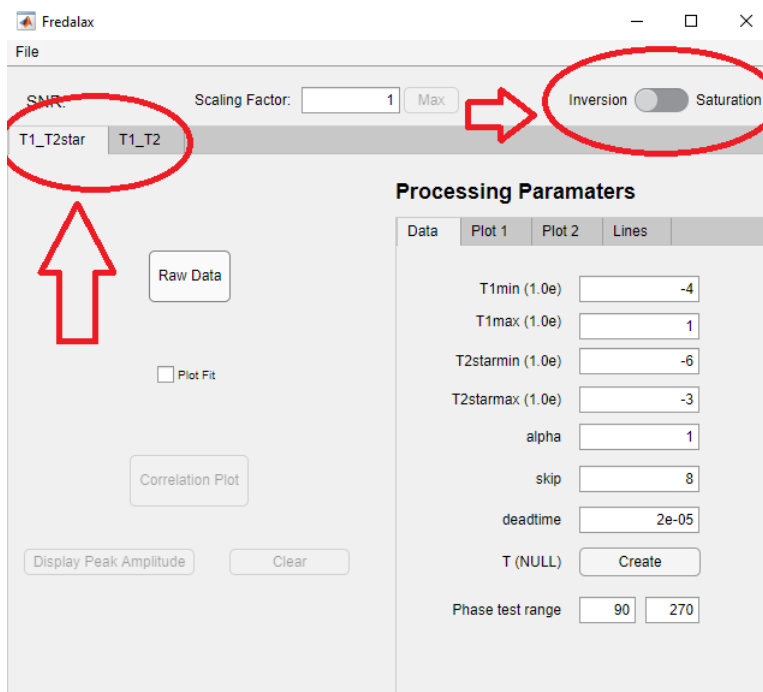
Printing(15)

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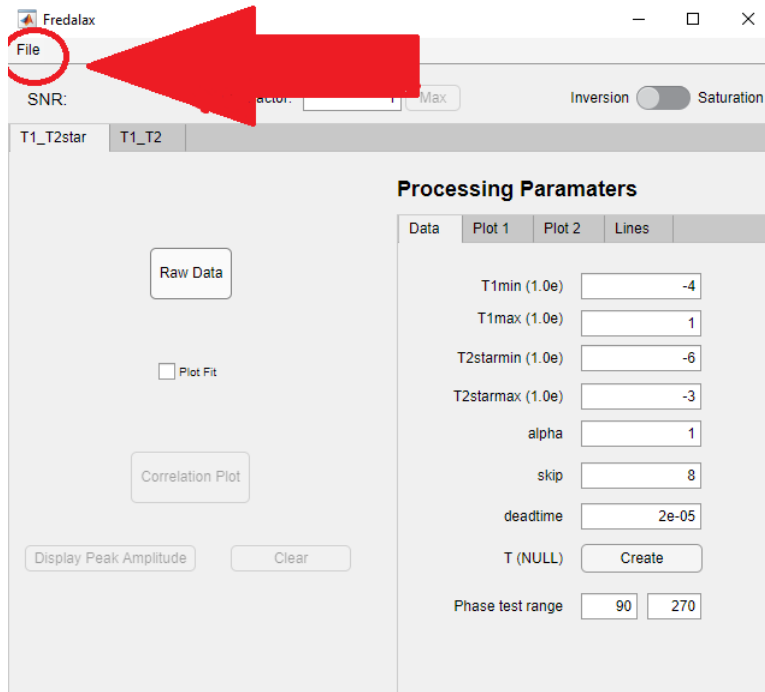
New features in Fredalax 1.9(17-21)

## Getting Started:





















Select T1,T2star or T1,T2 tab and use Saturation/ Inversion switch:



Load Data File:



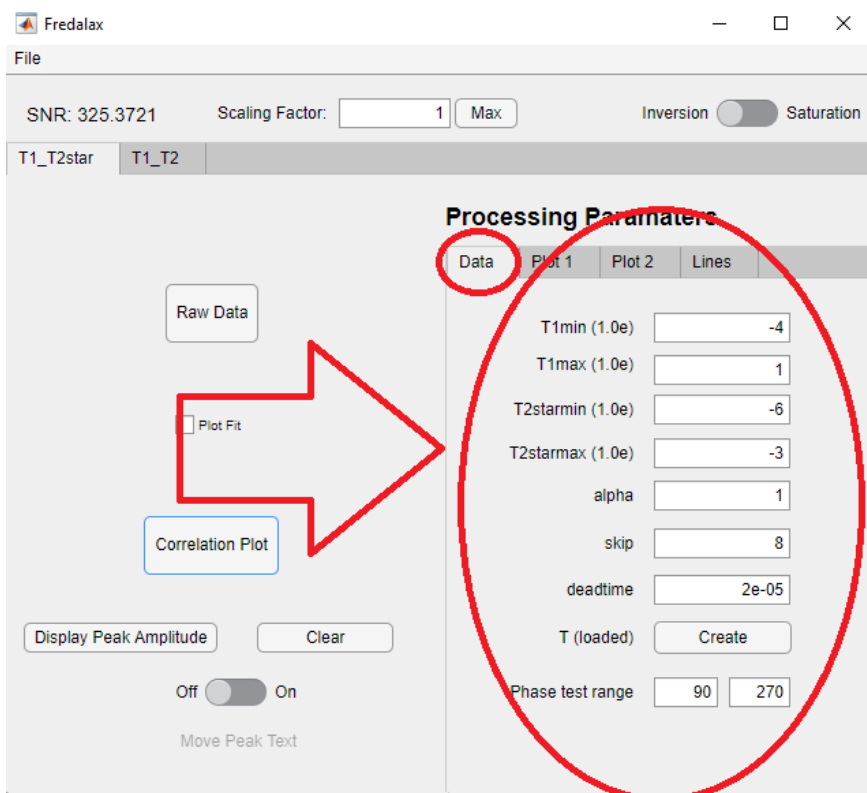
If the desired file to load is a RiDat file select the first file in the folder EX:

 T1T2_01.00001.RiDat	10/5/2020 12:13 PM	RIDAT File	16 KB
 T1T2_01.00002.RiDat	10/5/2020 12:13 PM	RIDAT File	16 KB
 T1T2_01.00003.RiDat	10/5/2020 12:13 PM	RIDAT File	16 KB
 T1T2_01.00004.RiDat	10/5/2020 12:13 PM	RIDAT File	16 KB
 T1T2_01.00005.RiDat	10/5/2020 12:13 PM	RIDAT File	16 KB
 T1T2_01.00006.RiDat	10/5/2020 12:13 PM	RIDAT File	16 KB
 T1T2_01.00007.RiDat	10/5/2020 12:13 PM	RIDAT File	16 KB
 T1T2_01.00008.RiDat	10/5/2020 12:13 PM	RIDAT File	16 KB
 T1T2_01.00009.RiDat	10/5/2020 12:13 PM	RIDAT File	16 KB
 T1T2_01.00010.RiDat	10/5/2020 12:13 PM	RIDAT File	16 KB
 T1T2_01.00011.RiDat	10/5/2020 12:13 PM	RIDAT File	16 KB
 T1T2_01.00012.RiDat	10/5/2020 12:13 PM	RIDAT File	16 KB
 T1T2_01.00013.RiDat	10/5/2020 12:13 PM	RIDAT File	16 KB
 T1T2_01.00014.RiDat	10/5/2020 12:13 PM	RIDAT File	16 KB
 T1T2_01.00015.RiDat	10/5/2020 12:13 PM	RIDAT File	16 KB
 T1T2_01.00016.RiDat	10/5/2020 12:13 PM	RIDAT File	16 KB
 T1T2_01.00017.RiDat	10/5/2020 12:13 PM	RIDAT File	16 KB
 T1T2_01.00018.RiDat	10/5/2020 12:13 PM	RIDAT File	16 KB
 T1T2_01.00019.RiDat	10/5/2020 12:13 PM	RIDAT File	16 KB
 T1T2_01.00020.RiDat	10/5/2020 12:13 PM	RIDAT File	16 KB

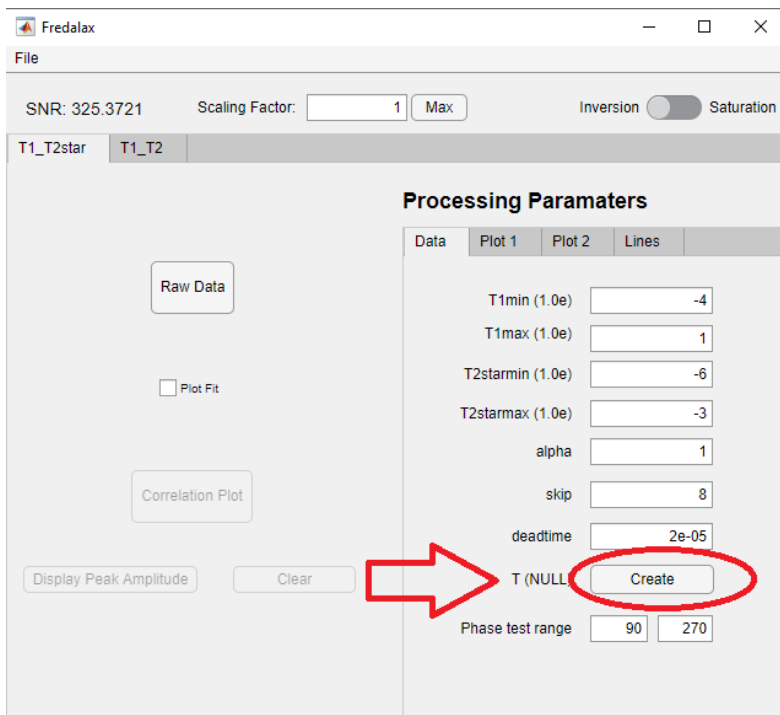


The RiDat file will take some time to load in and will set acquisition parameters according to the dataset.

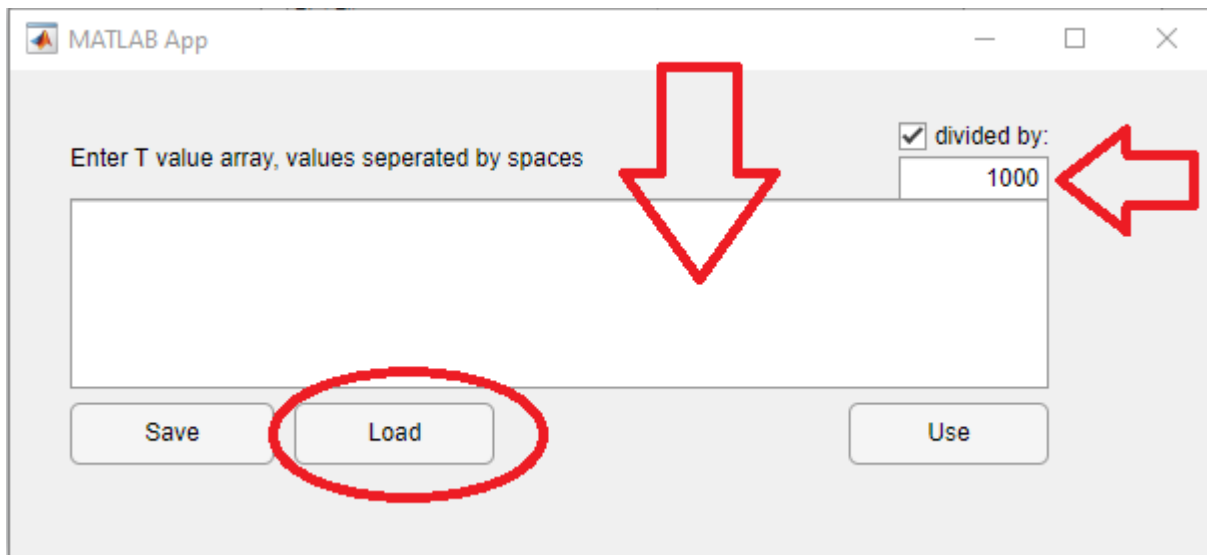
Under the Data tab adjust parameters accordingly:



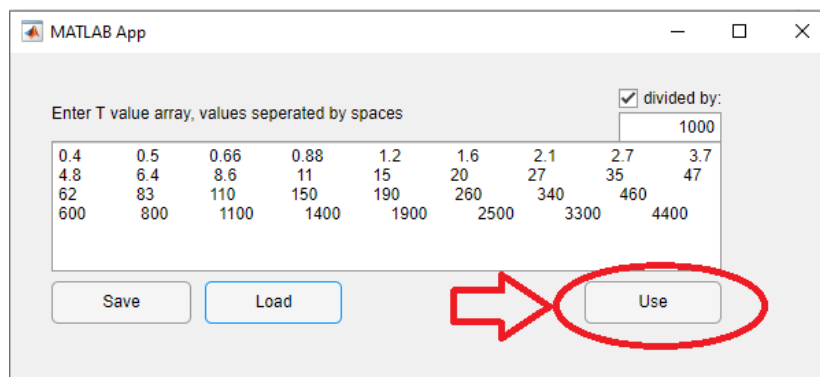
Load or create T array



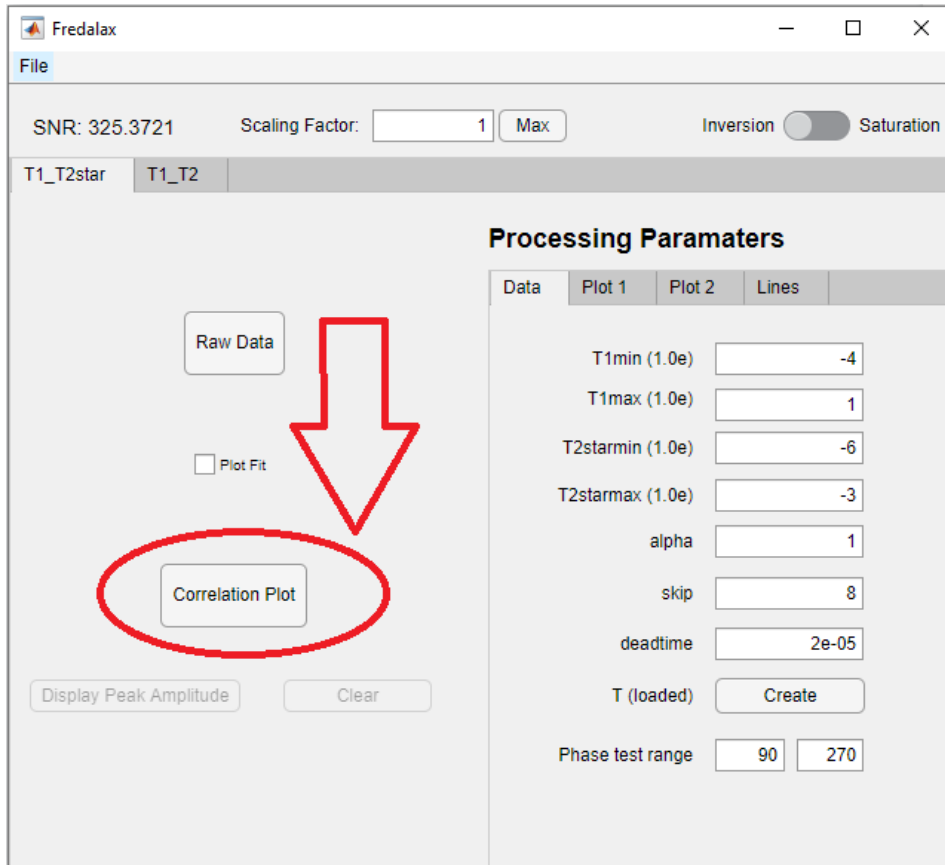
Enter T array with values separated with spaces by either pasting in the text box or by loading a file and adjust the divisor accordingly. Refer to the acquiring Tarray PDF for detailed instructions :



Click-use:



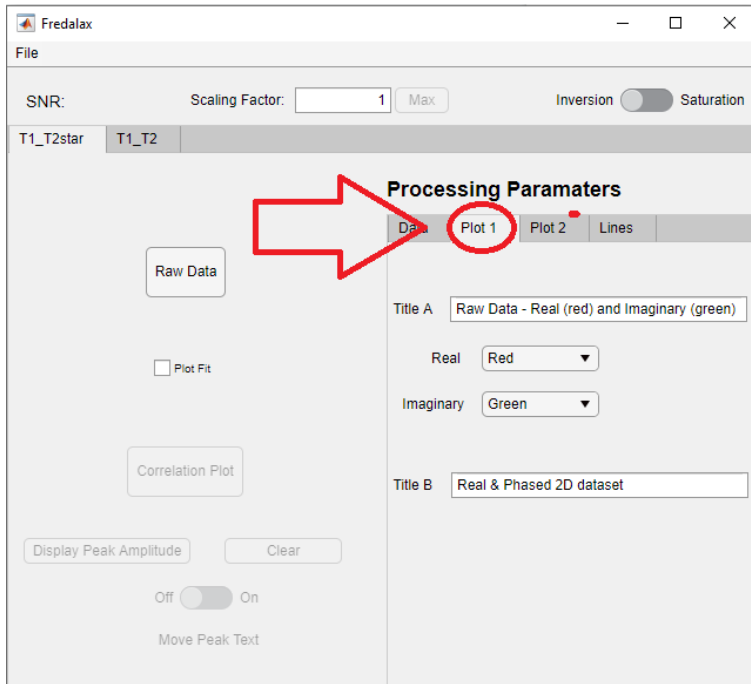
Notice the Correlation Plot button is now enabled and a correlation plot can now be generated:



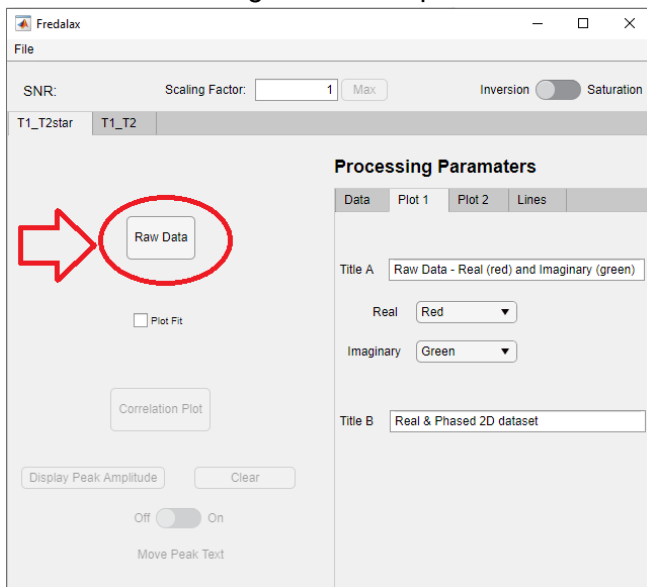
Plot 1:

This plots the raw data from the file and does not require a loaded Tarray.

Select the Plot 1 tab for additional options:

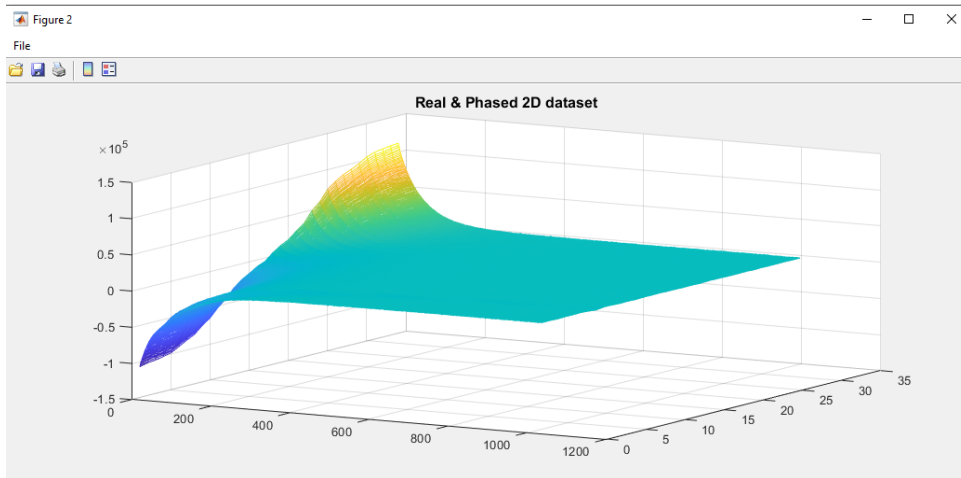
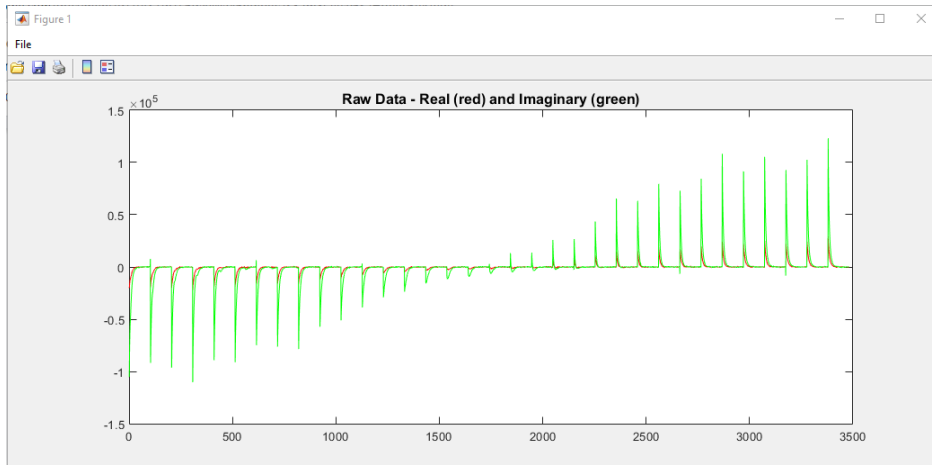


Click Raw Data to generate the plot:



Example output:

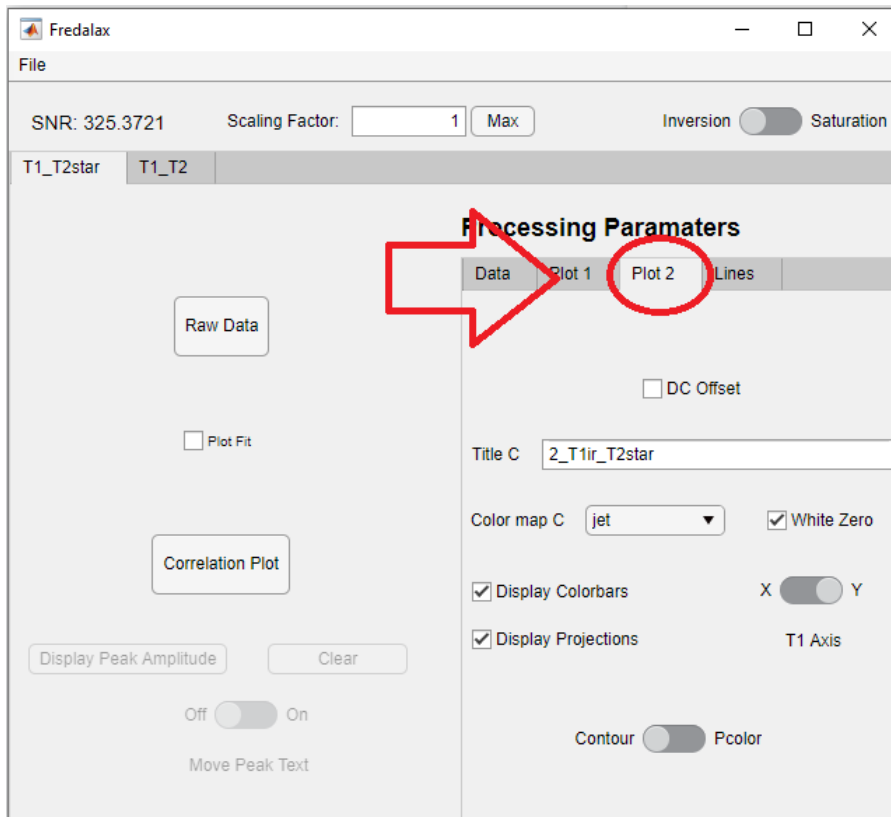




## Plot 2:

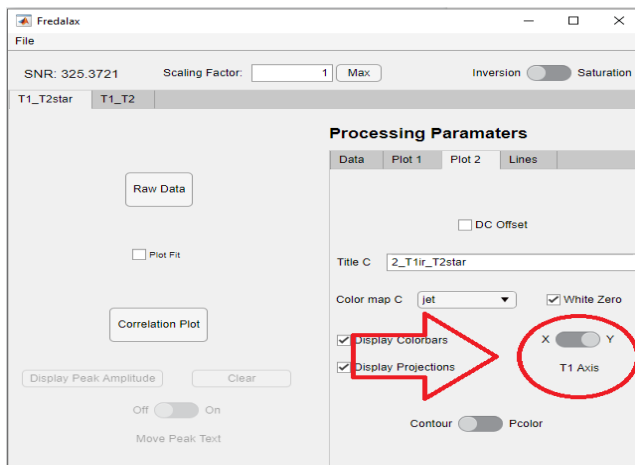
This is the correlation plot:

Select the Plot 2 tab for additional options:

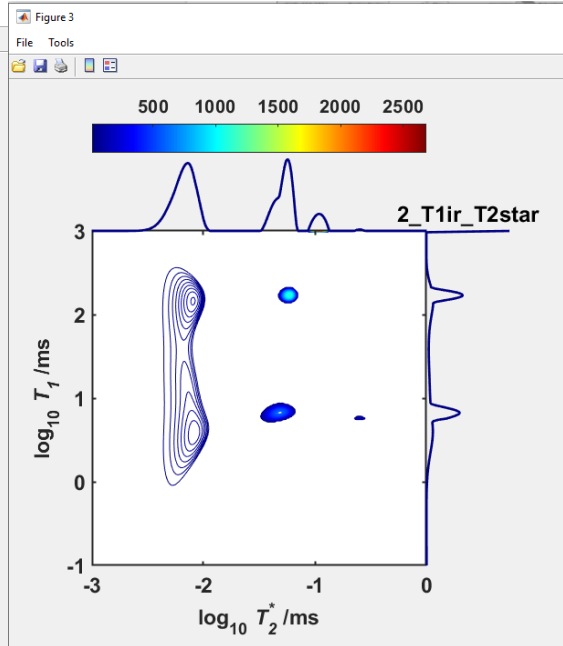
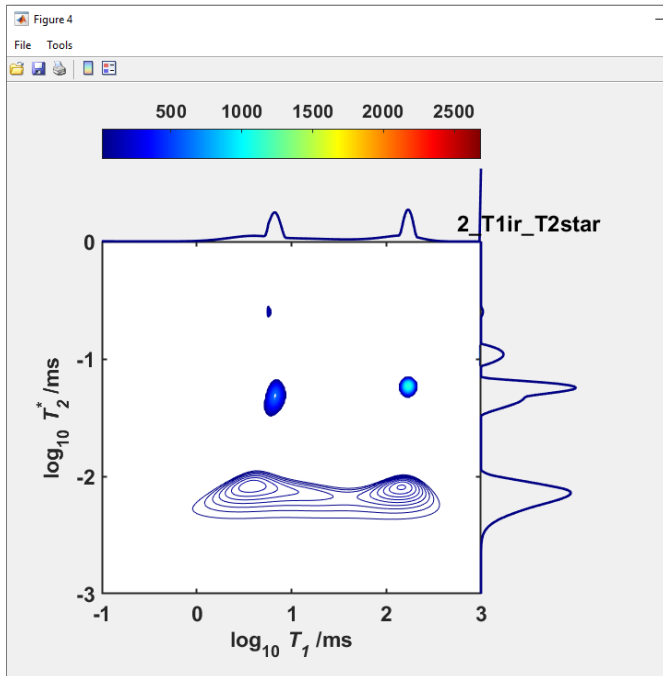


Choose between T1 on the x and y axis

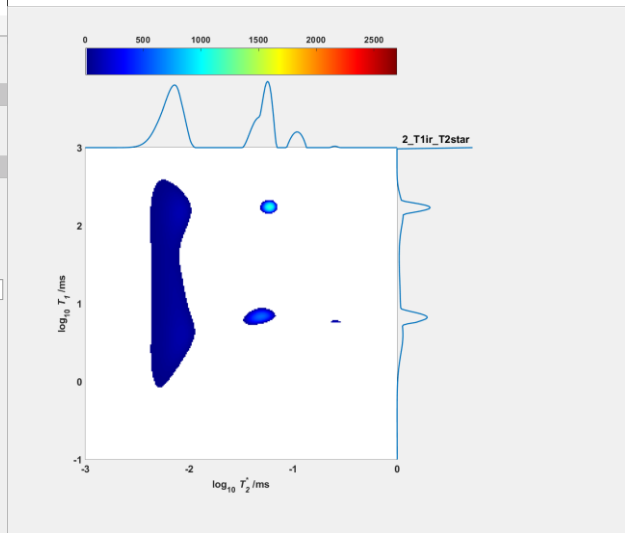
:



Example:

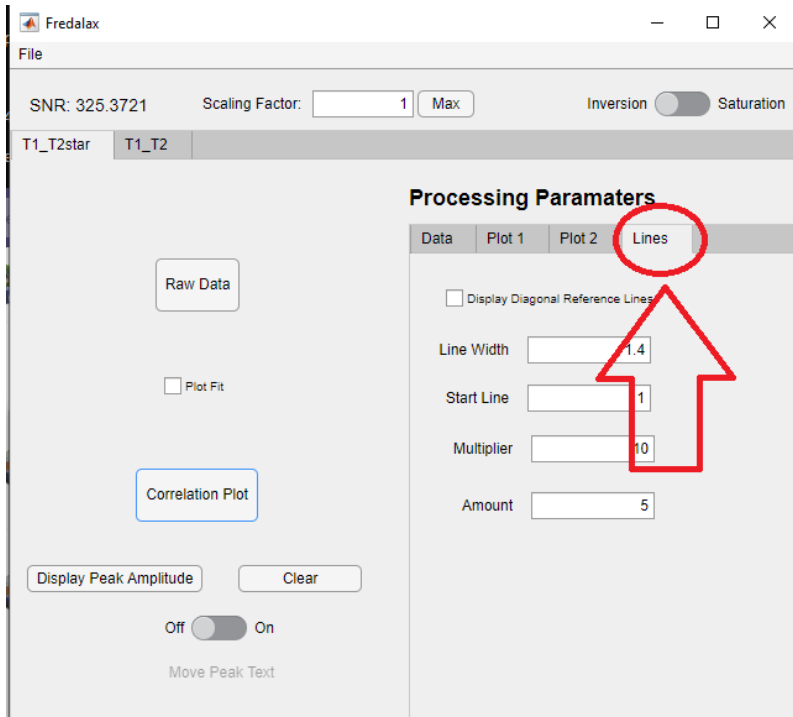


Choose between contour and Pcolor plots:

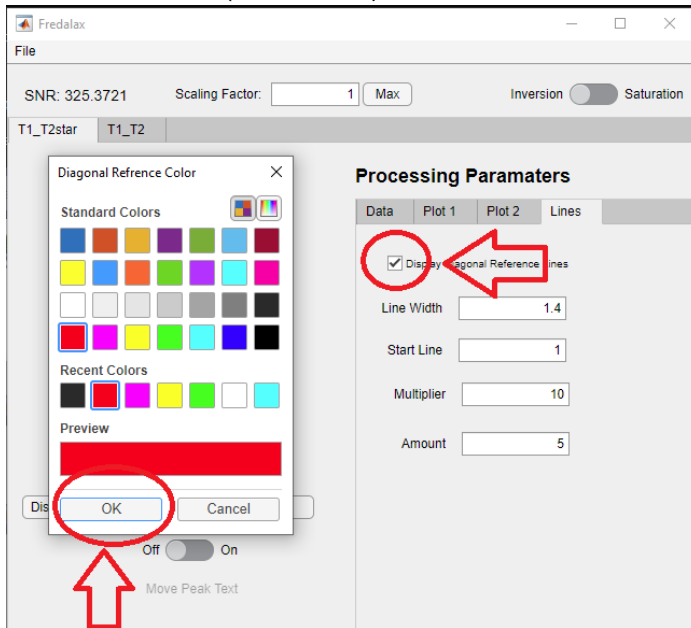


Diagonal Reference Lines:

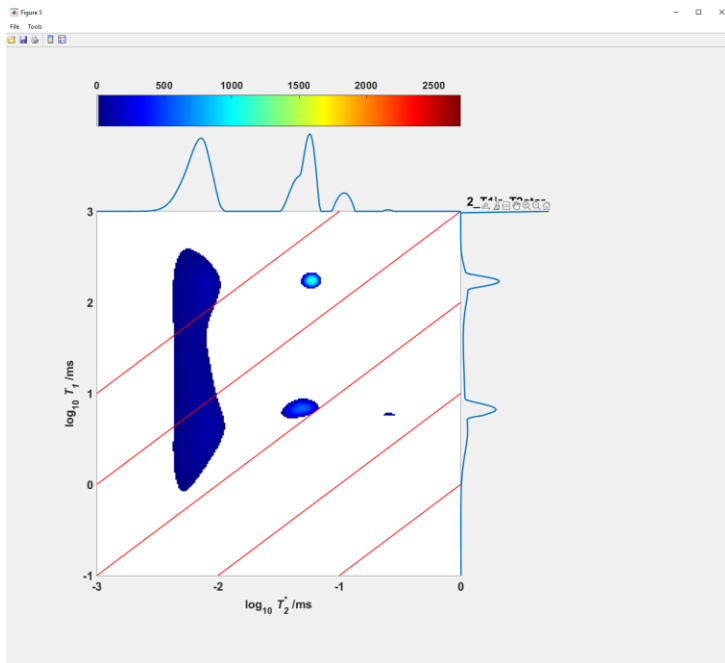
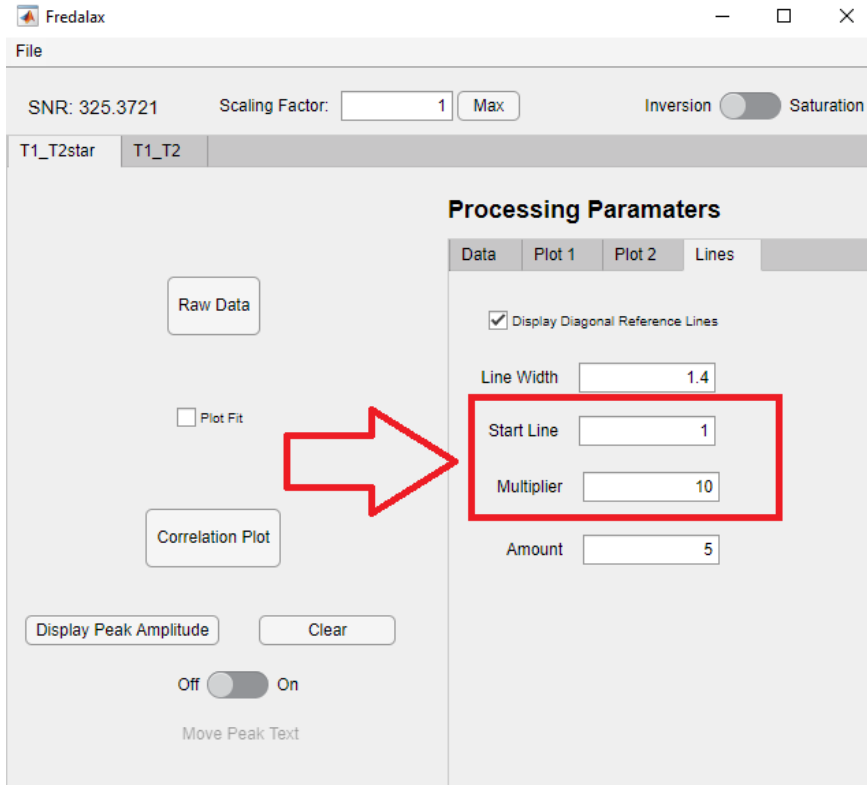
Select the Lines tab:



Check the Display Reference lines checkbox, This will bring up a color selection menu, select the desired color(default red) and click OK:



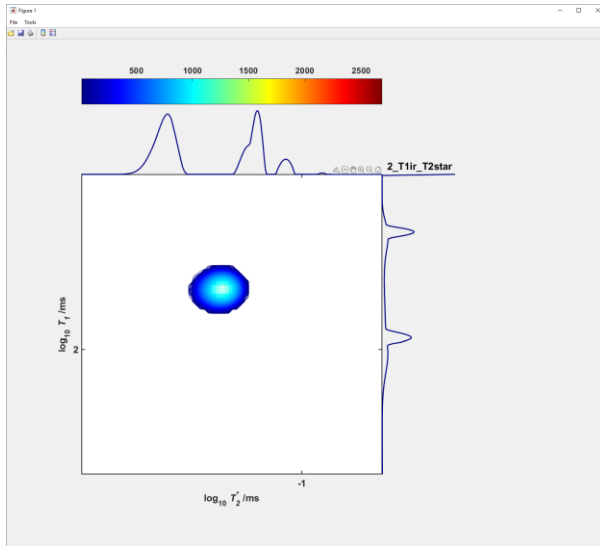
Multiply startline value by powers of ten to increase where the first line is drawn and multiply Multiplier by powers of ten to increase the spacing between lines. The amount is the number of lines drawn. Lines will appear on the next generated plot.



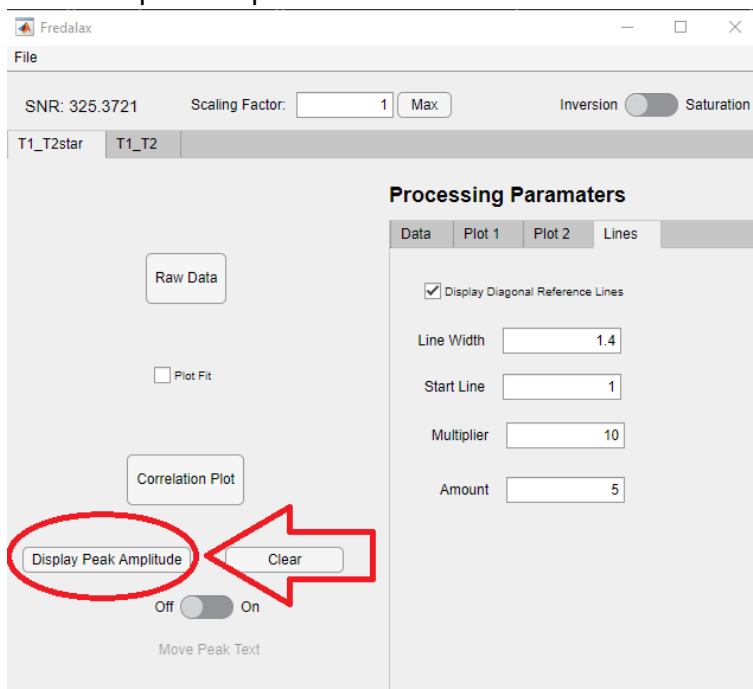
# Peak Amplitude:

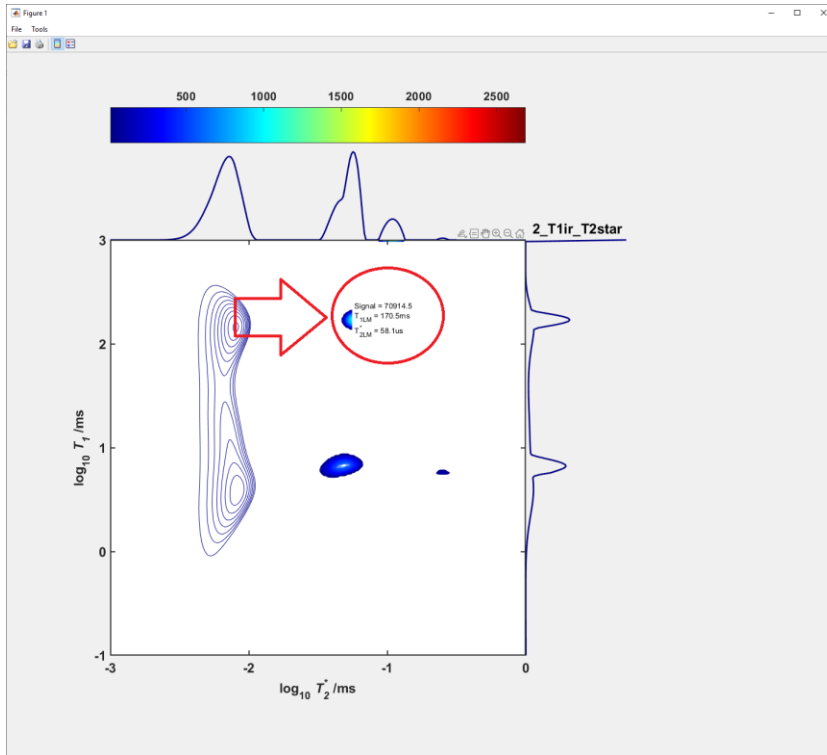
When a correlation plot has been generated, the peak amplitude button can be pressed to display the signal over the location that is zoomed into on the plot:

Zoom into a peak:

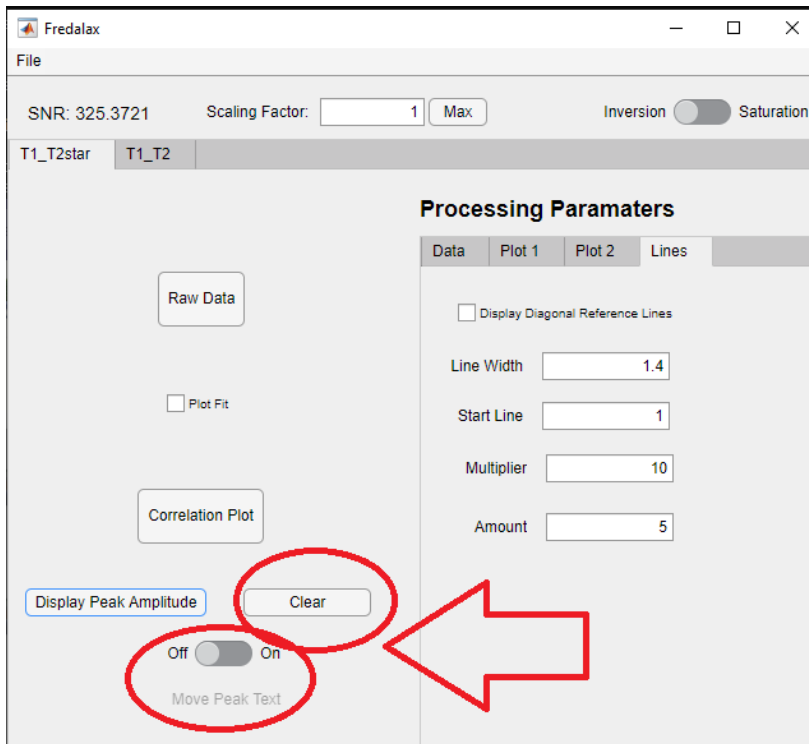


Press the peak amplitude button:

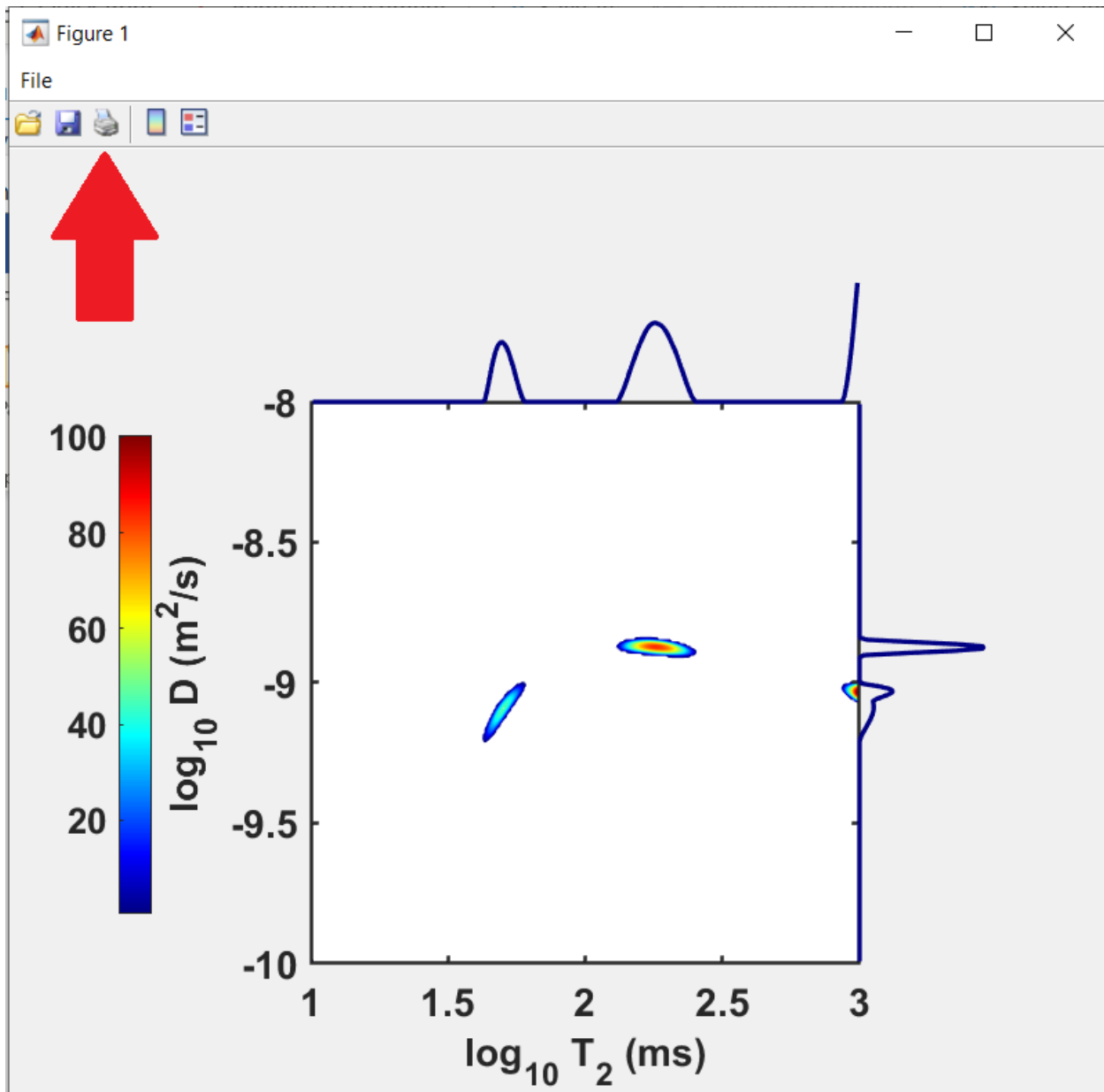




Peak amplitude text boxes can be moved with the move switch and cleared with the clear button (Remember to turn move peak text switch off after):



# Printing

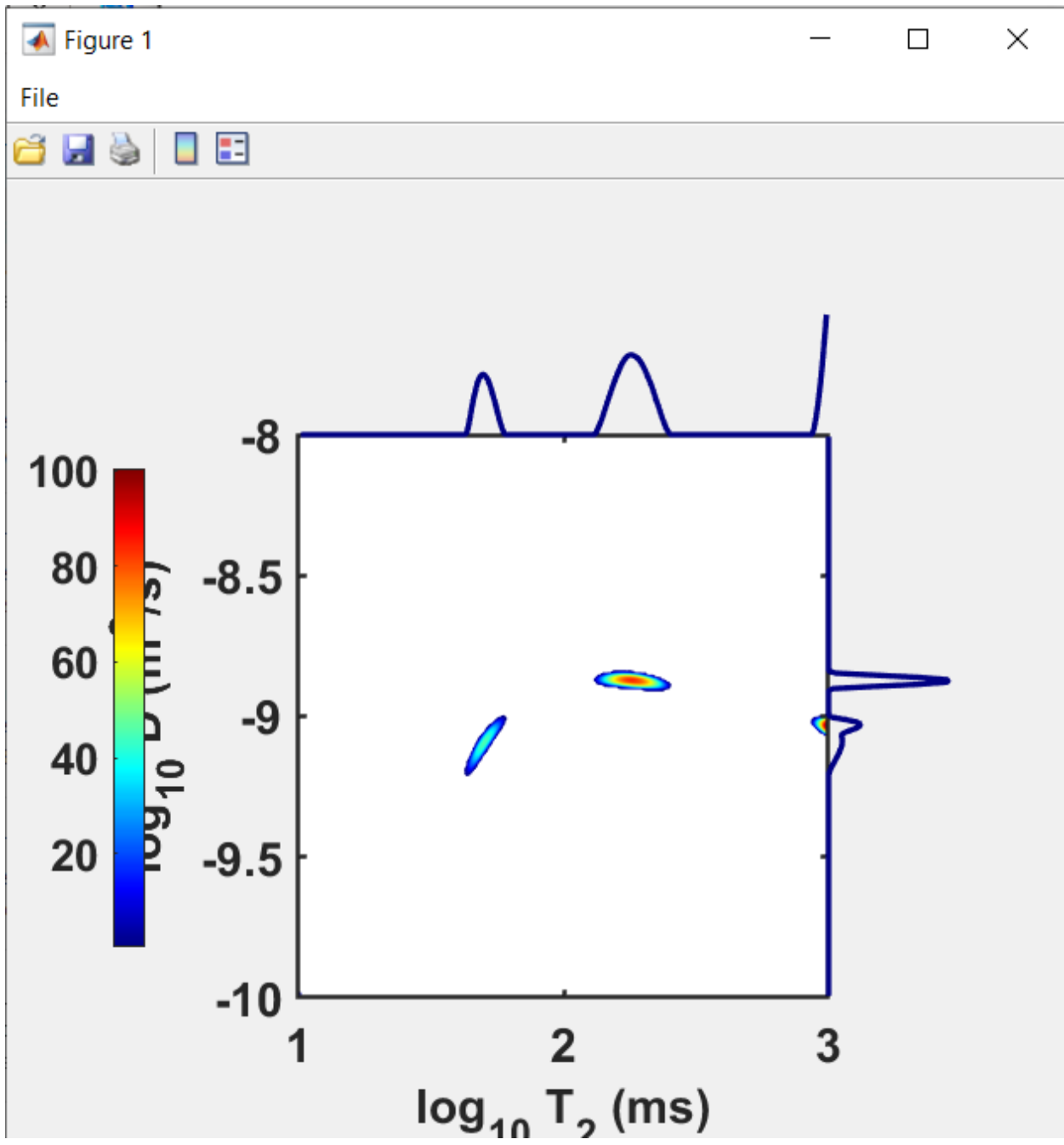


There is a print and save tab on each figure that can be used to export the plot.

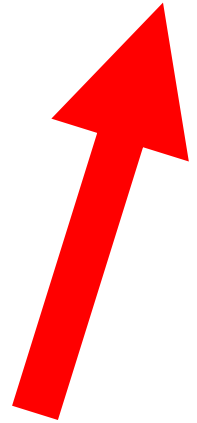
## Scaling and Spacing

Since there are numerous aspect ratios for monitors fredalax doesn't always size and space features in the app correctly for every monitor which can cause overlap of elements in the figure:





This can be fixed by expanding the figure window from one of its corners to maintain congruence and then export and resize the figure image as desired.



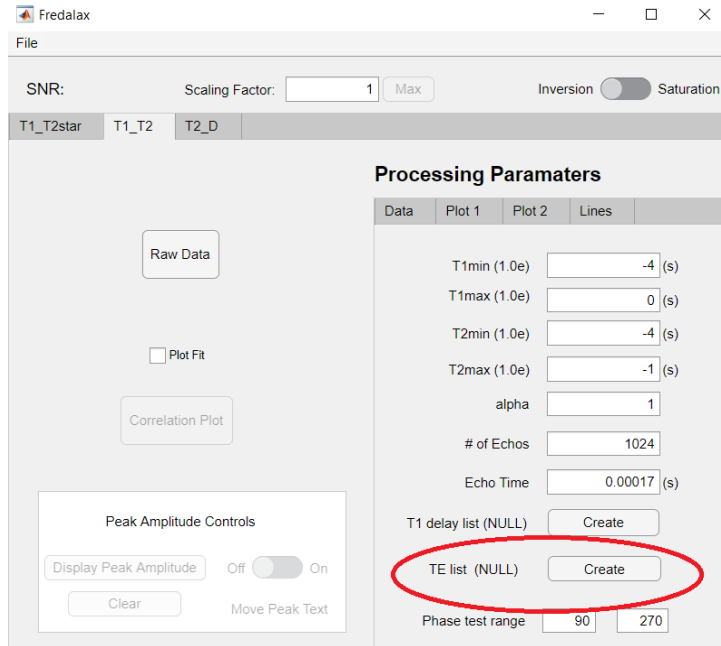
## New features in Fredalax 2

### 1. T2\_D calculation type

The screenshot shows the Fredalax software interface. At the top, the window title is "Fredalax" with standard window controls. Below the title bar, there is a "File" menu and a status bar showing "SNR: 23.3452" and "Scaling Factor: 1" with a "Max" button. The main interface has three tabs: "T1\_T2star", "T1\_T2", and "T2\_D", with "T2\_D" currently selected. The "Processing Parameters" panel is open, showing various input fields and controls. On the left side of the panel, there are buttons for "Raw Data", "Correlation Plot", and a "Peak Amplitude Controls" section with a "Display Peak Amplitude" button and a toggle switch set to "On". The "Processing Parameters" section includes fields for "Dmin(1.0e)", "Dmax(1.0e)", "T2min(1.0e)", "T2max(1.0e)", "alpha", "Focus", "Echo Time", "Gradient(T/m)", and "Gamma (MHz/T)". At the bottom, there is a "T1 delay list (load...)" button and a "Create" button.

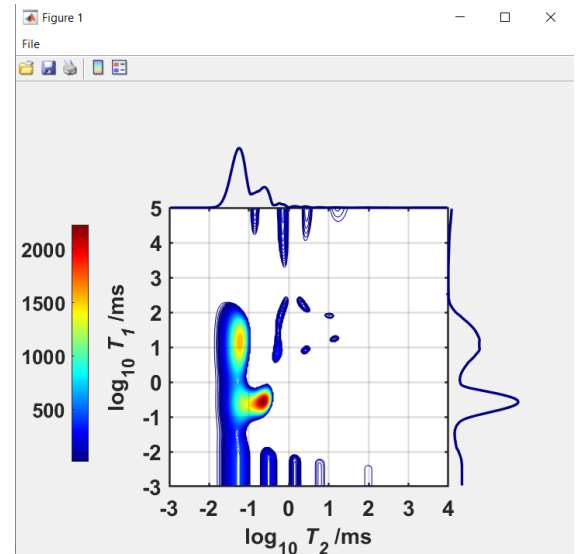
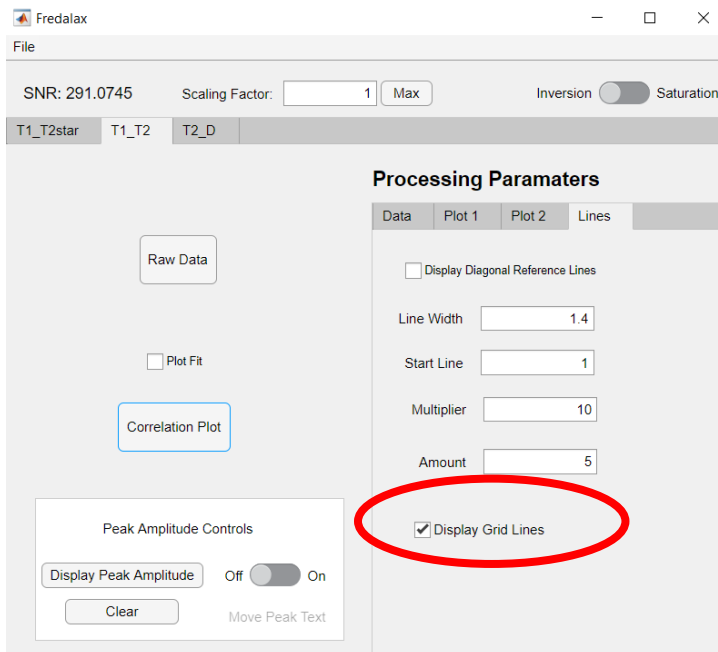
Parameter	Value	Unit
Dmin(1.0e)	-13	(s)
Dmax(1.0e)	-11	(s)
T2min(1.0e)	-2	(s)
T2max(1.0e)	0	(s)
alpha	0.1	
Focus	0	
Echo Time	0.0003	(s)
Gradient(T/m)	1.305	
Gamma (MHz/T)	2.675e+08	

## 2. Ability to load a T1\_T2 file a non-linear echo sequence

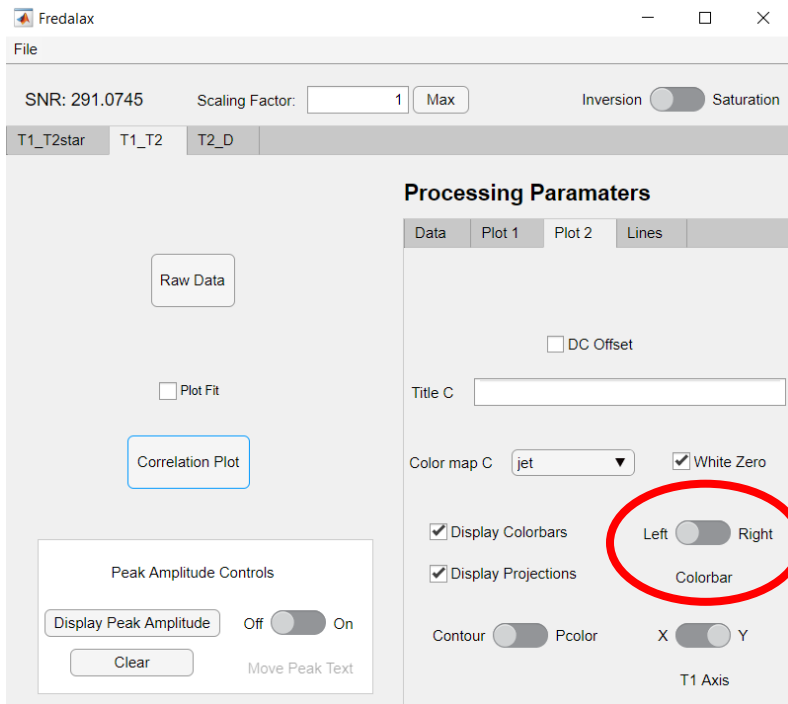


Click the create TE list button to load a non-linear echo sequence .csv or .txt file or leave as null for the TE to be calculated as linear.

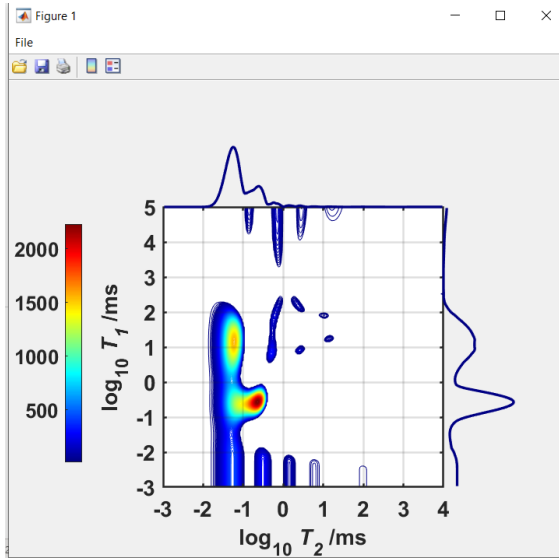
## Grid Lines



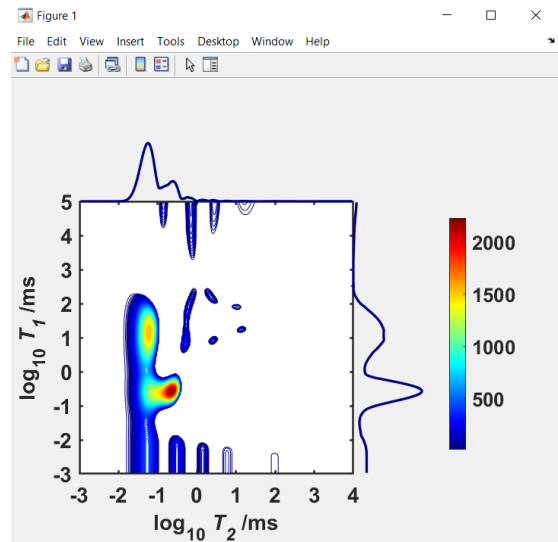
## Color bar location switch:



Color bar can be placed on either side of the plot



VS



The T2\_D tab now has the option for inputting values for all points in the specified range. This can be left blank and all acquired points in the echos will be averaged by default.

SNR:                      Scaling Factor:  Max

T1\_T2star    T1\_T2    T2\_D

**Processing Parameters**

Data	Plot 1	Plot 2	Lines
Dmin(1.0e)	<input type="text" value="-13"/>	(m <sup>2</sup> /s)	
Dmax(1.0e)	<input type="text" value="-11"/>	(m <sup>2</sup> /s)	
T2min(1.0e)	<input type="text" value="-2"/>	(s)	
T2max(1.0e)	<input type="text" value="0"/>	(s)	
alpha	<input type="text" value="0.1"/>		
Focus	<input type="text" value="0"/>		
Echo Time	<input type="text" value="0.0003"/>	(s)	
Gradient(T/m)	<input type="text" value="1.305"/>		
Gamma (MHz/T)	<input type="text" value="2.675e+08"/>		
skip	<input type="text" value="8"/>		
Points from	<input type="text"/>	to	<input type="text"/>
D delay list (NULL)	<input type="button" value="Create"/>		

Raw Data

Plot Fit

Correlation Plot

Peak Amplitude Controls

Display Peak Amplitude    Off  On

Clear                      Move Peak Text