



Scientific Graphing and Analysis Software

Origin is on all Physics 403 computers.

What it can do:

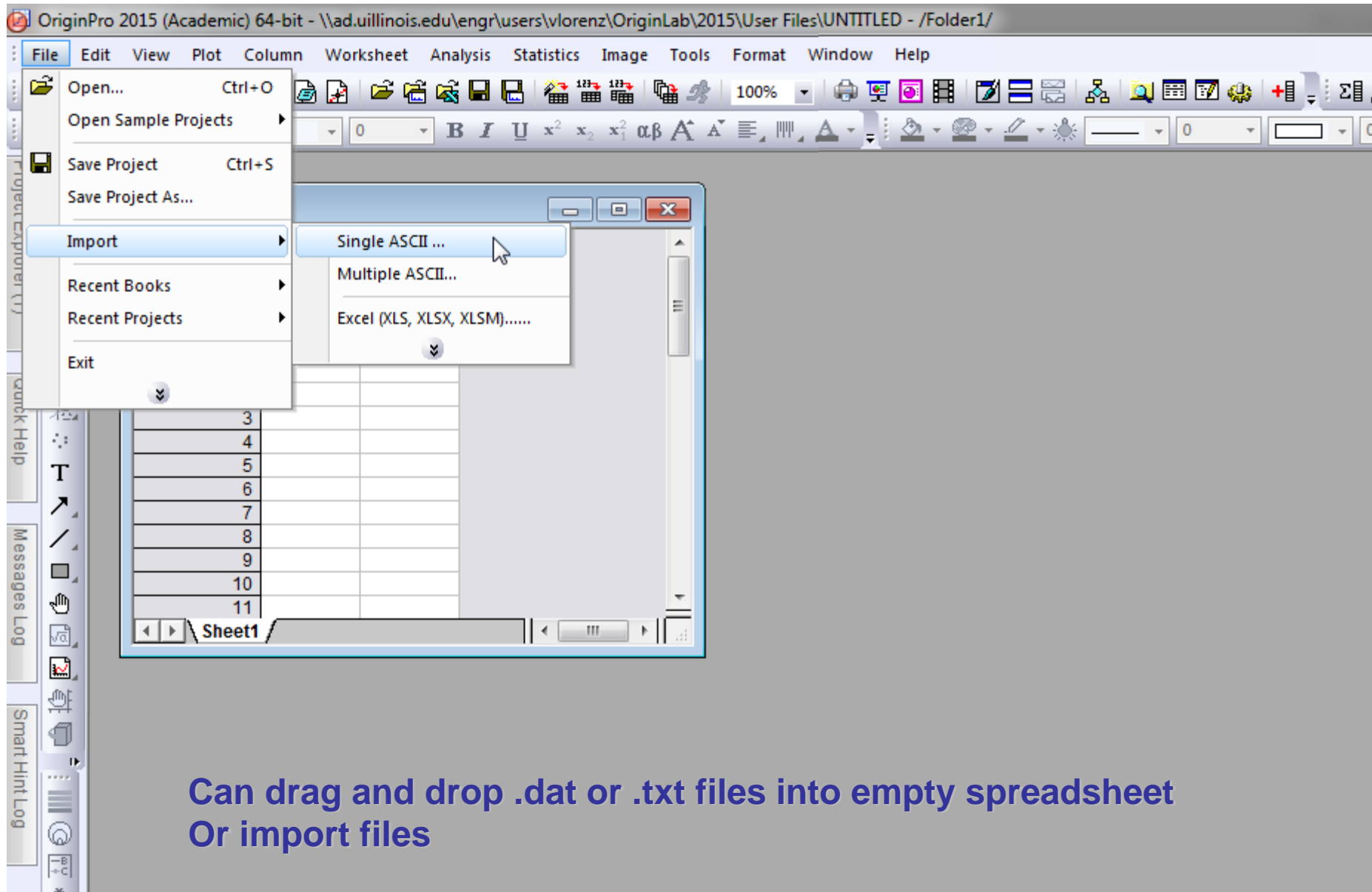
1. Graphical presentation of data

2. Data analysis

3. Preparation of publication-quality figures

- Specially designed for scientific graphics
- “Standard” Windows application, does not require knowledge of C++ or any other high level computer language
- Can write special functions or procedures using Origin programming tools

Importing data



Can drag and drop .dat or .txt files into empty spreadsheet
Or import files

Graphical presentation of data: Basic Plot

The screenshot displays the OriginPro 2015 (Academic) 64-bit interface. The main window shows a data table with columns A(X) and B(Y). A plot menu is open, showing options for creating a line plot. The data table is as follows:

	A(X)	B(Y)
Long Name	Freq	Vrea
Units		
Comments		
F(x)=		
Sparklines		
1	20	0.00
2	21	-0.00
3	22	2.07
4	23	0.00
5	24	0.00
6	25	0.00
7	26	-2.88
8	27	0.01
9	28	0.00

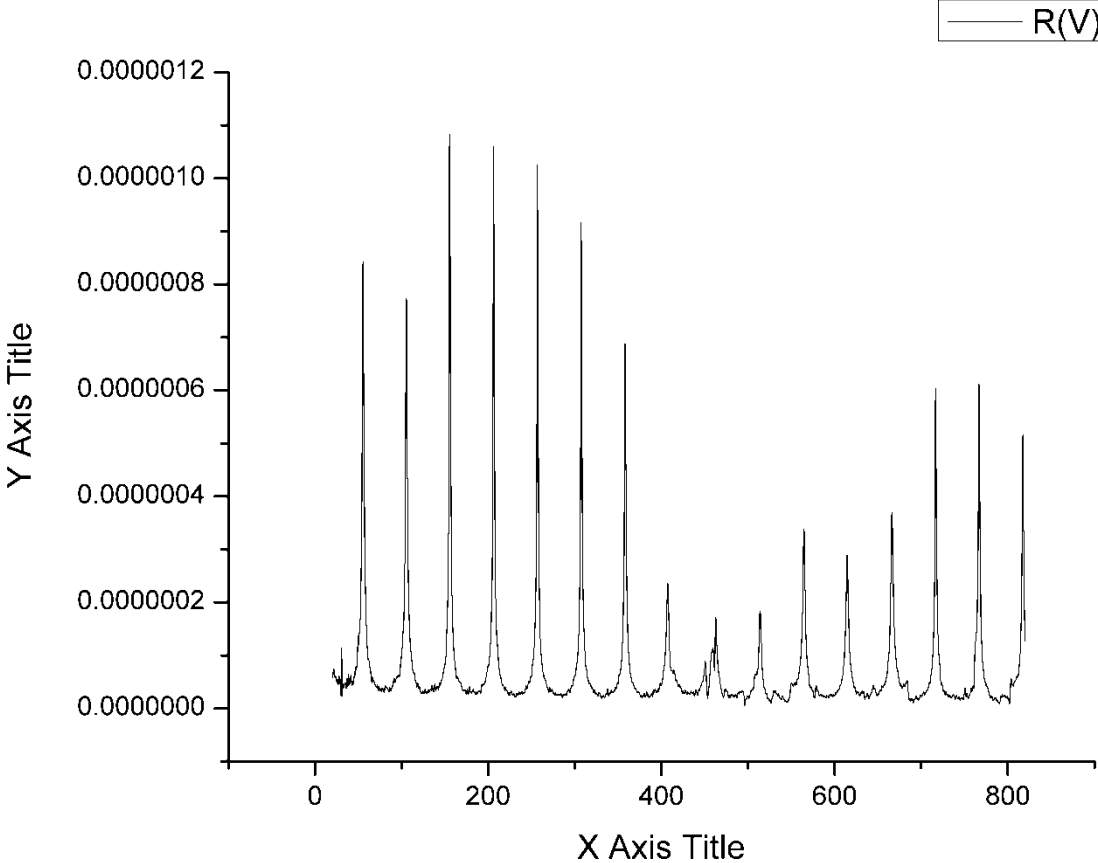
The plot menu is open, showing the following options:

- Plot
- Copy
- Copy Columns to...
- Set As
- Set As Categorical
- Set Column Values... Ctrl+Q
- Sort Worksheet
- Hide/Unhide Columns
- Properties...

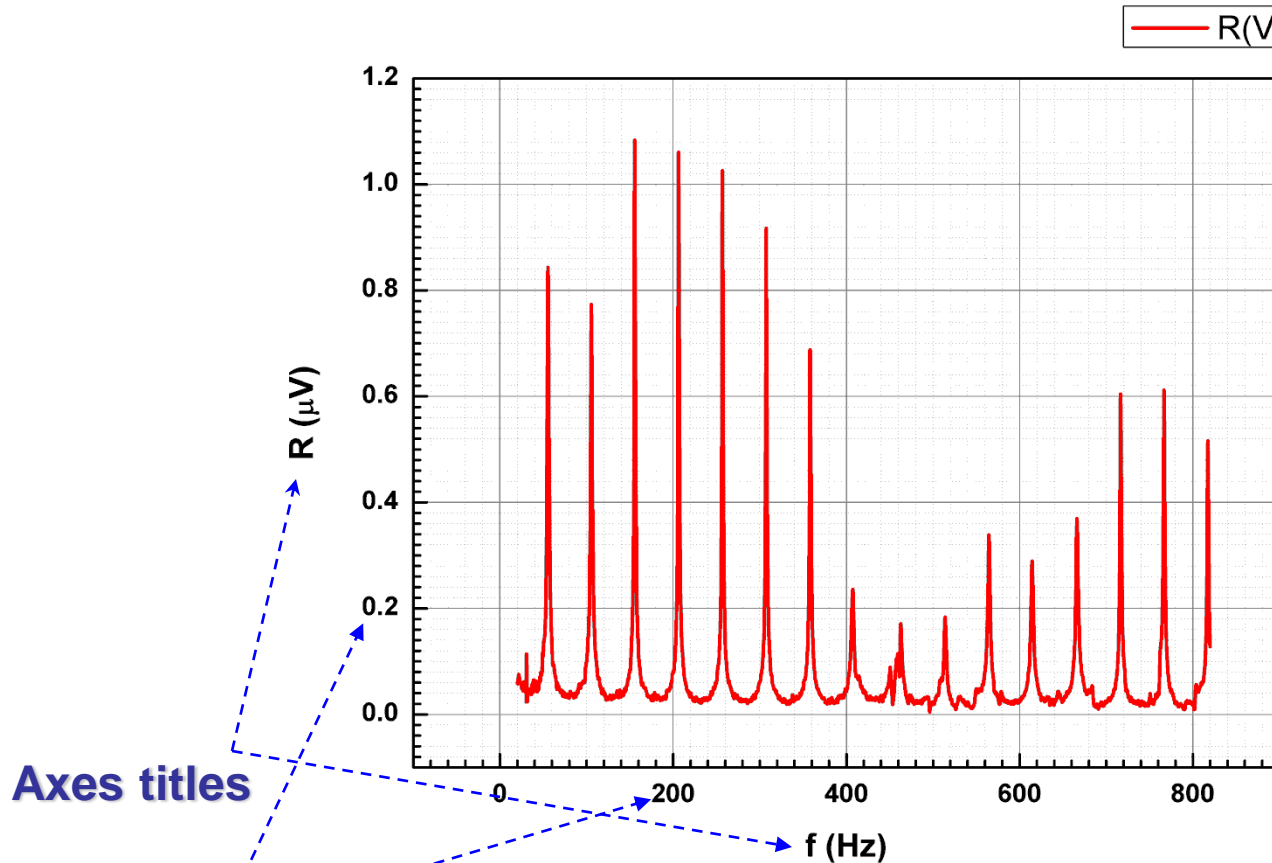
The 'Line' option is selected, and a sub-menu is open showing the following options:

- Line
- Symbol
- Line + Symbol
- Column/Bar/Pie
- Multi-Y
- Y-offset/Waterfall
- Multi-Panel
- Statistics
- Contour/Heat Map
- Profile
- Specialized
- 1 Line

Graphical presentation of data: Basic Plot



Graphical presentation of data: Basic Plot



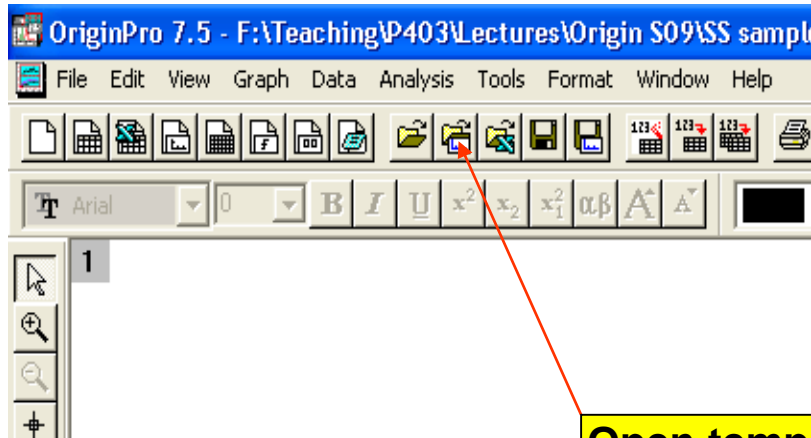
Top and Right axes,
grid lines

Axes titles

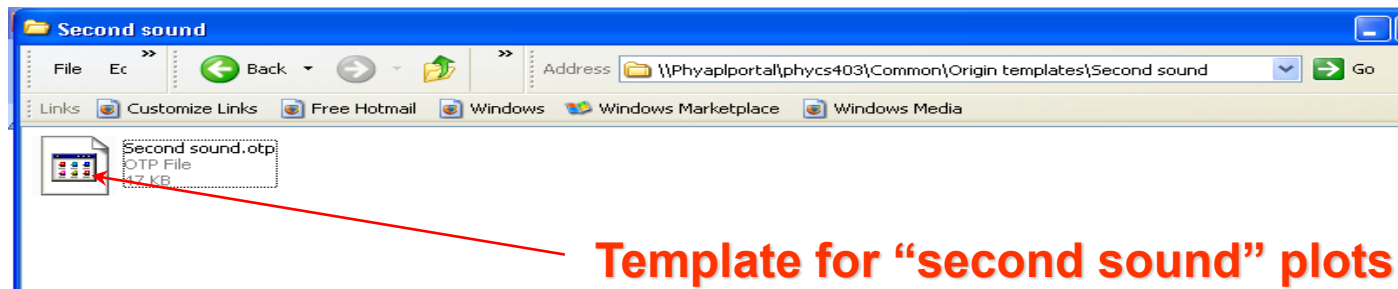
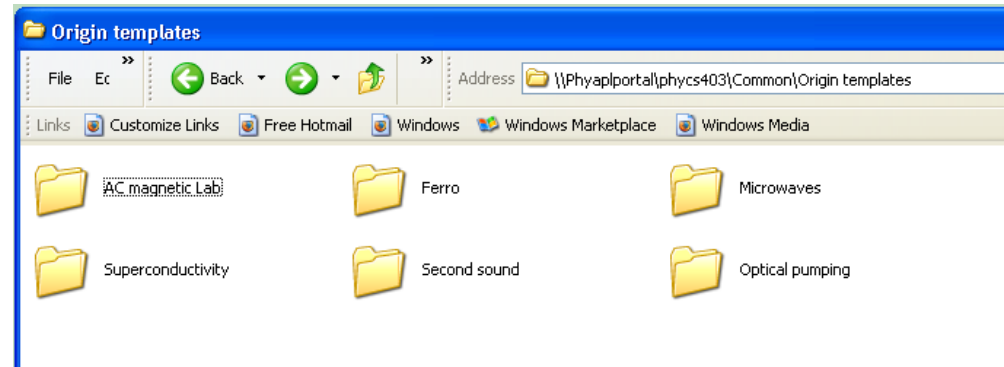
Bold tick labels.

For a better-looking graph, volts were converted to μV

Graphical presentation of data: Templates



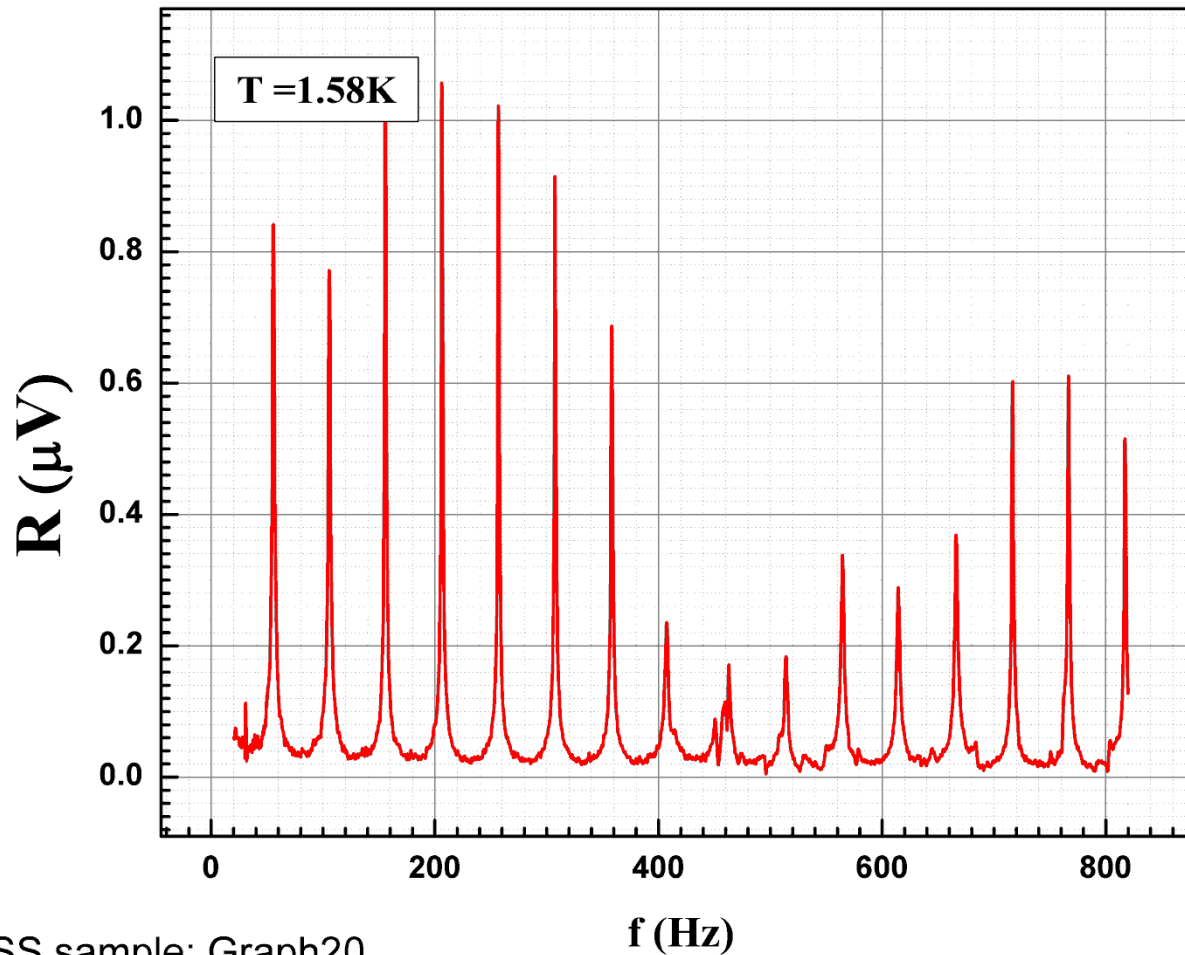
Open template



Template for "second sound" plots

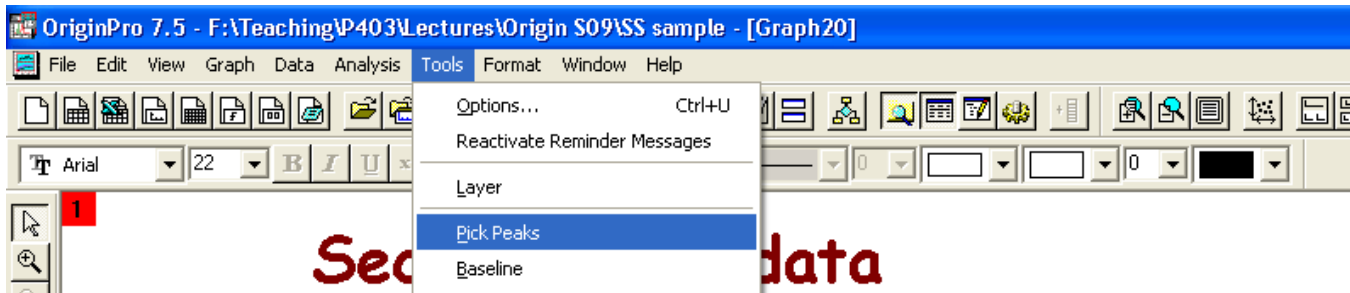
Graphical presentation of data: Templates

Second sound data

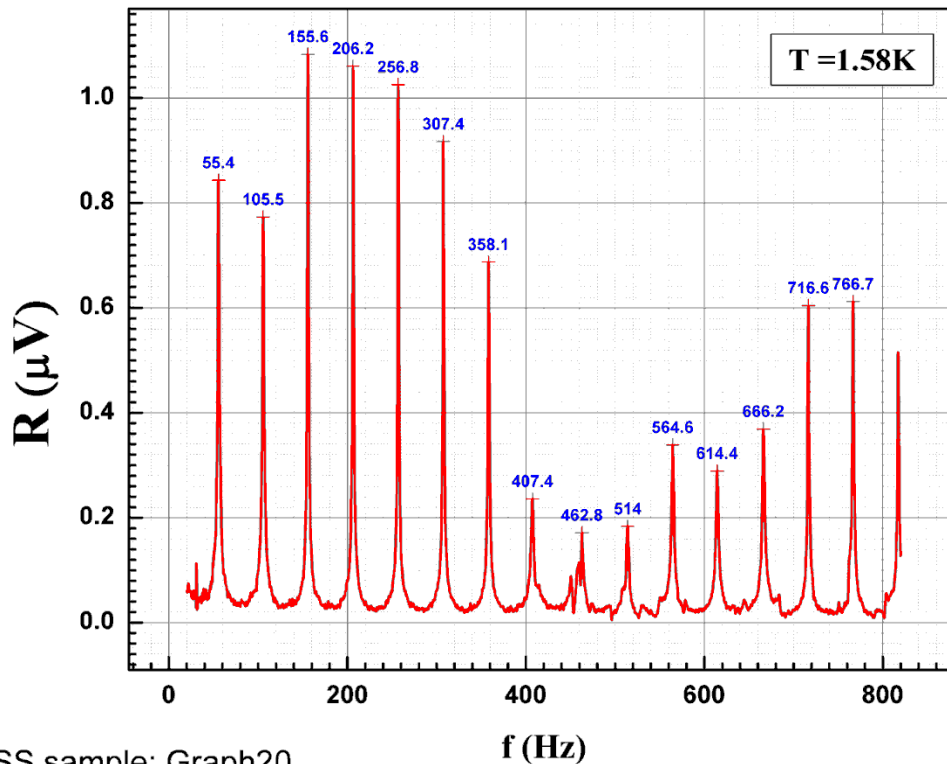


SS sample: Graph20

Graphical presentation of data: Fitting, etc.

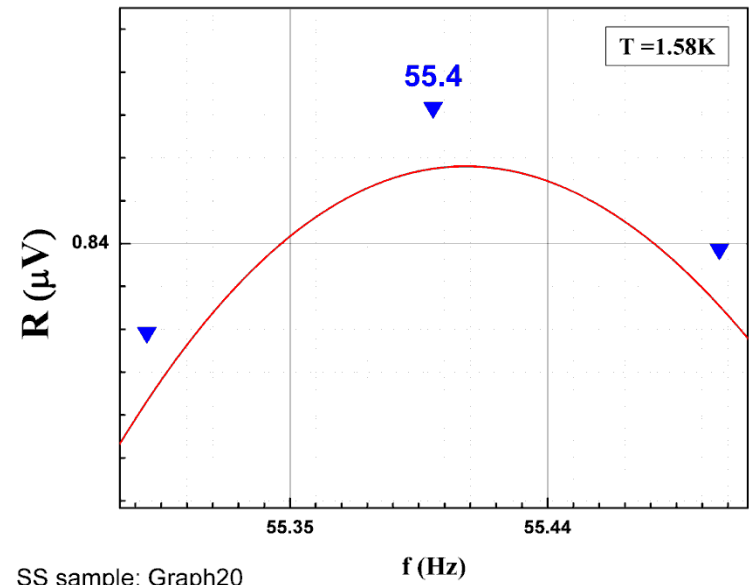


Second sound data



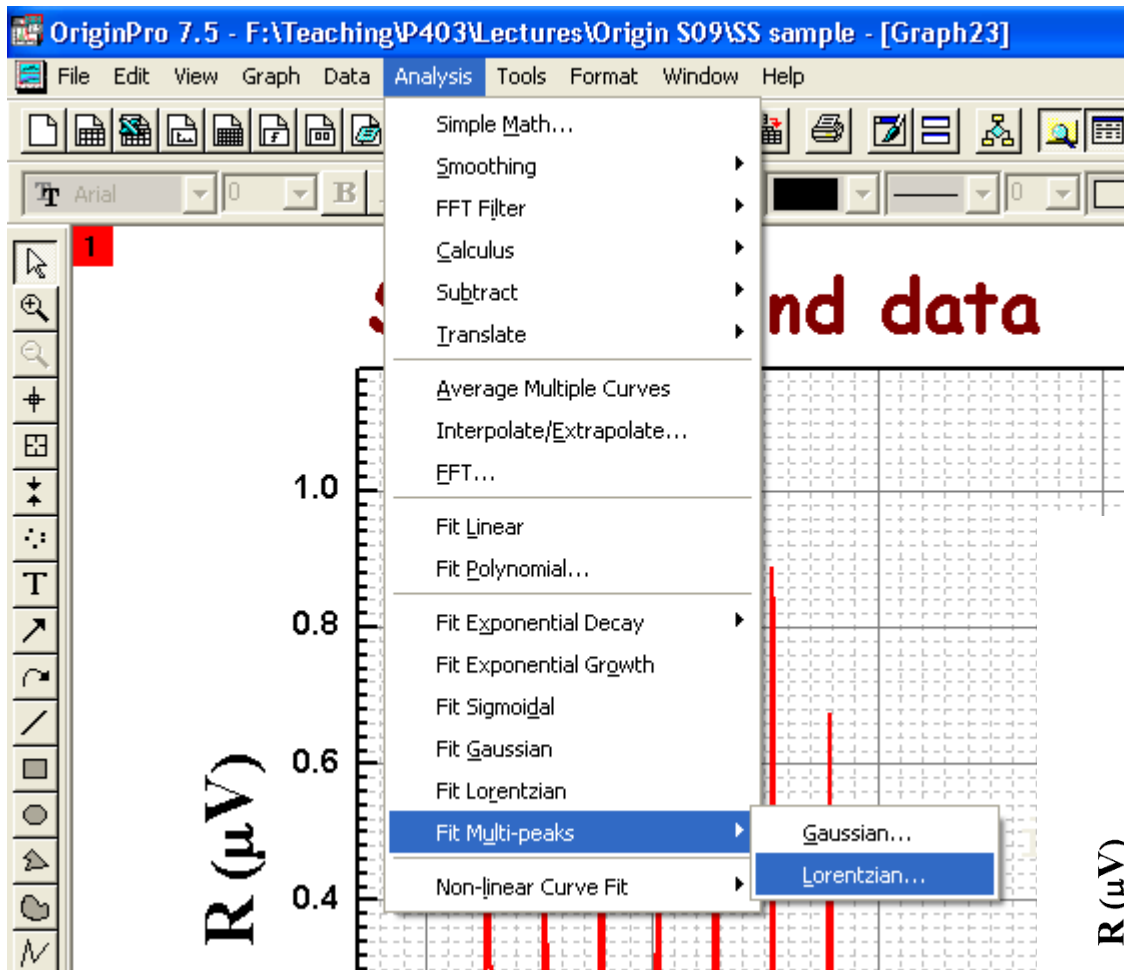
SS sample: Graph20

Second sound data

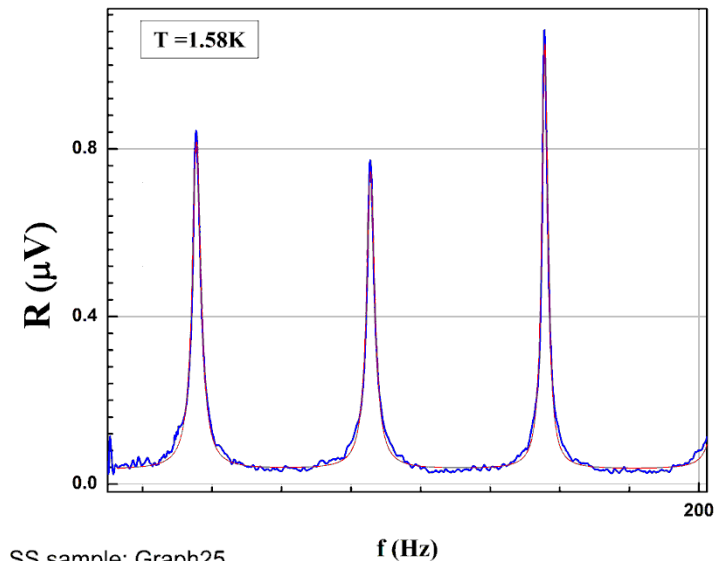


SS sample: Graph20

Graphical presentation of data: Fitting, etc.

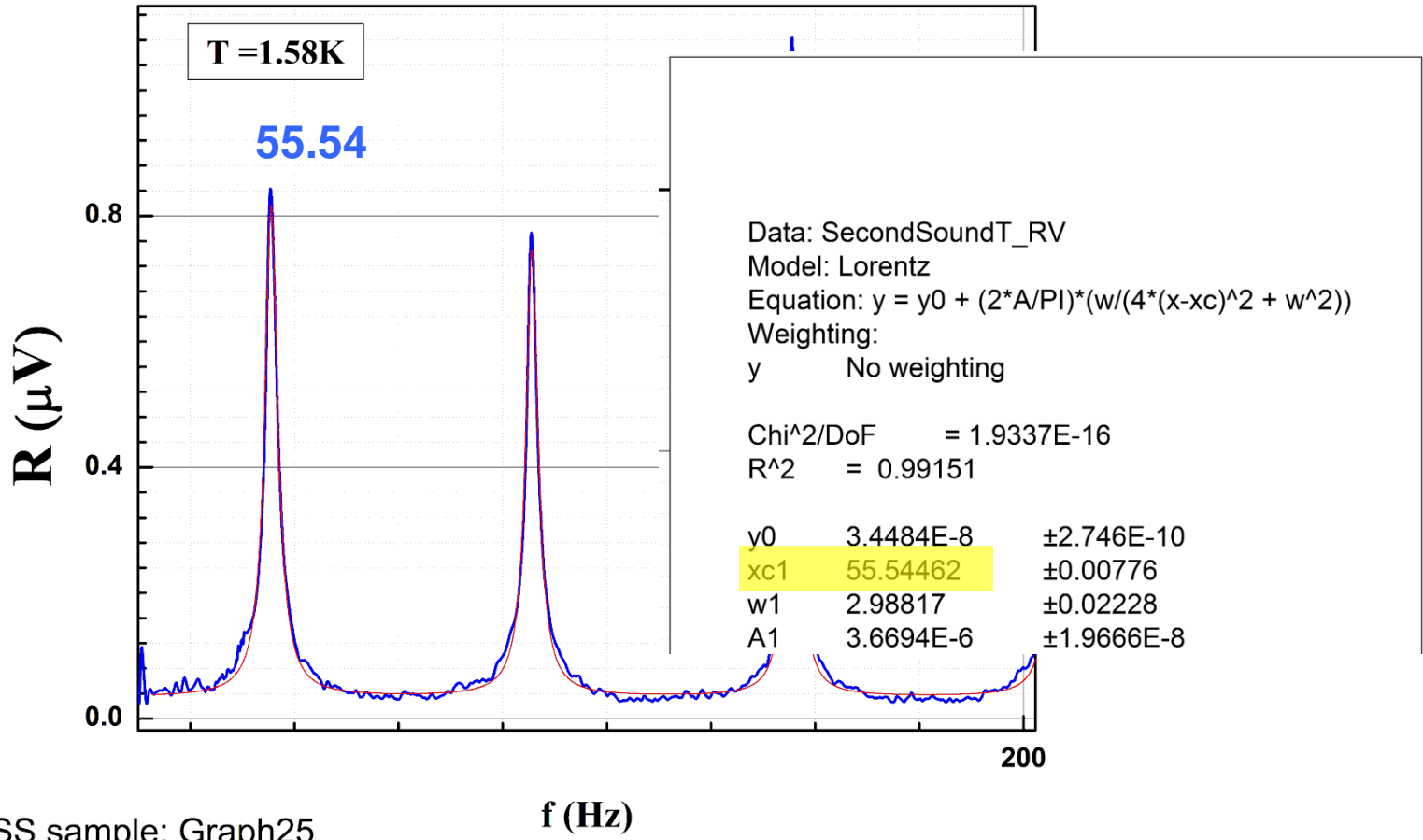


Second sound data



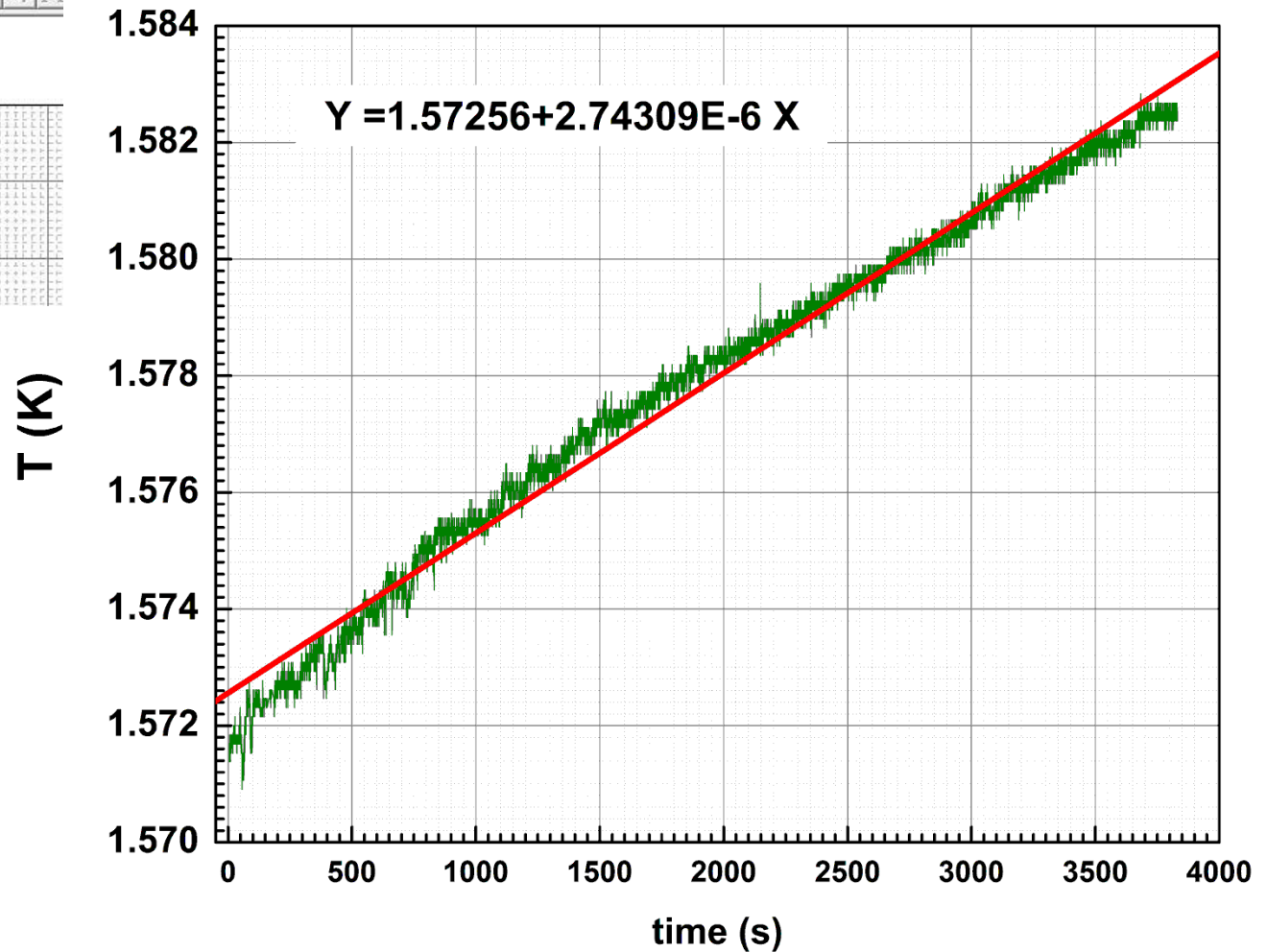
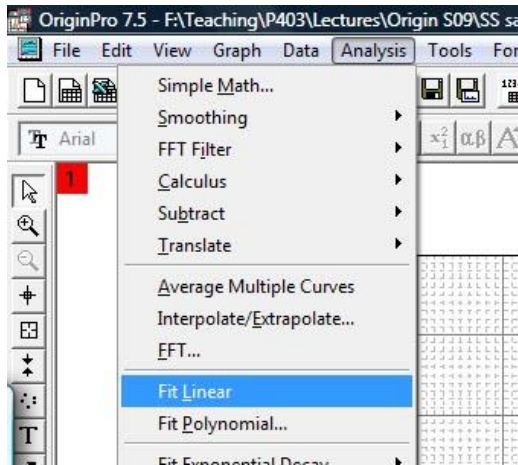
Graphical presentation of data: Fitting, etc.

Second sound data

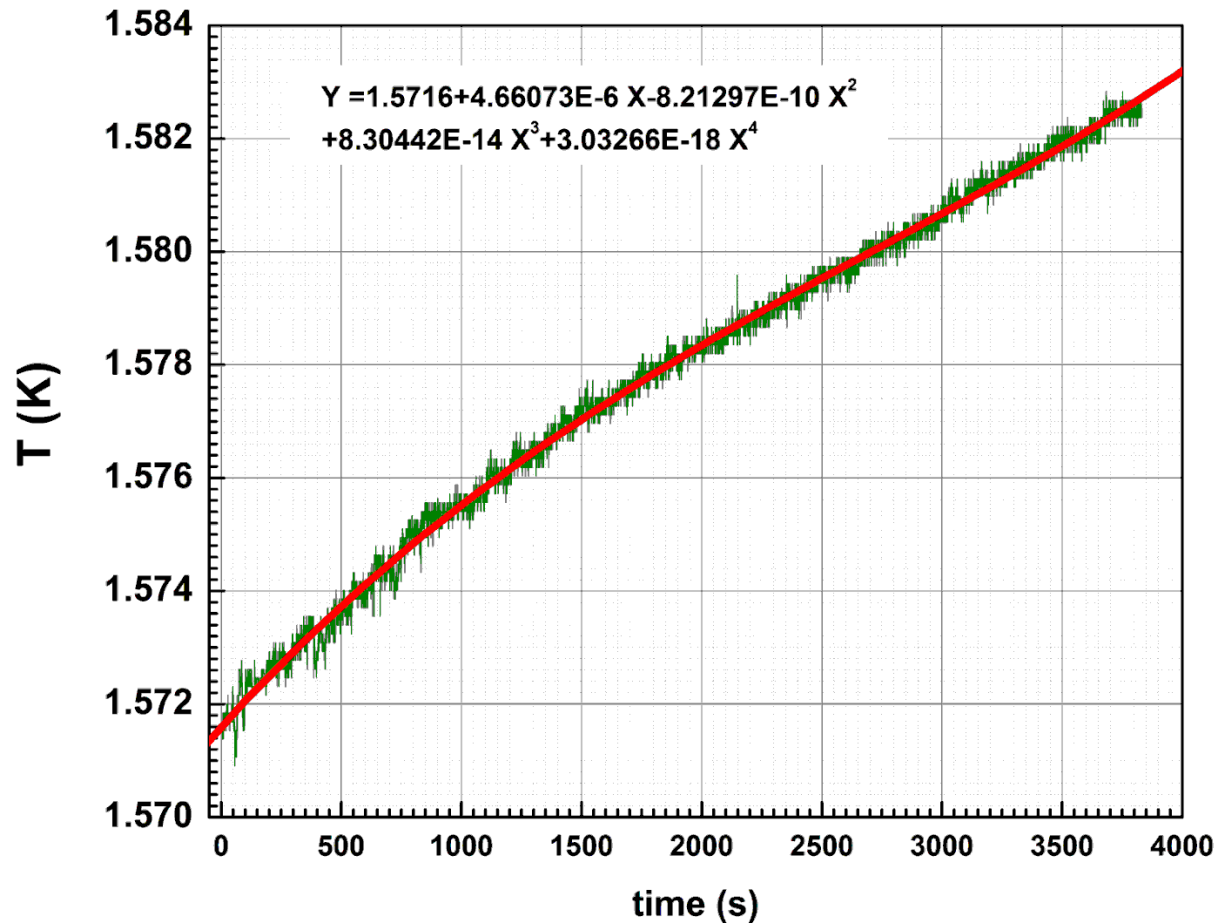
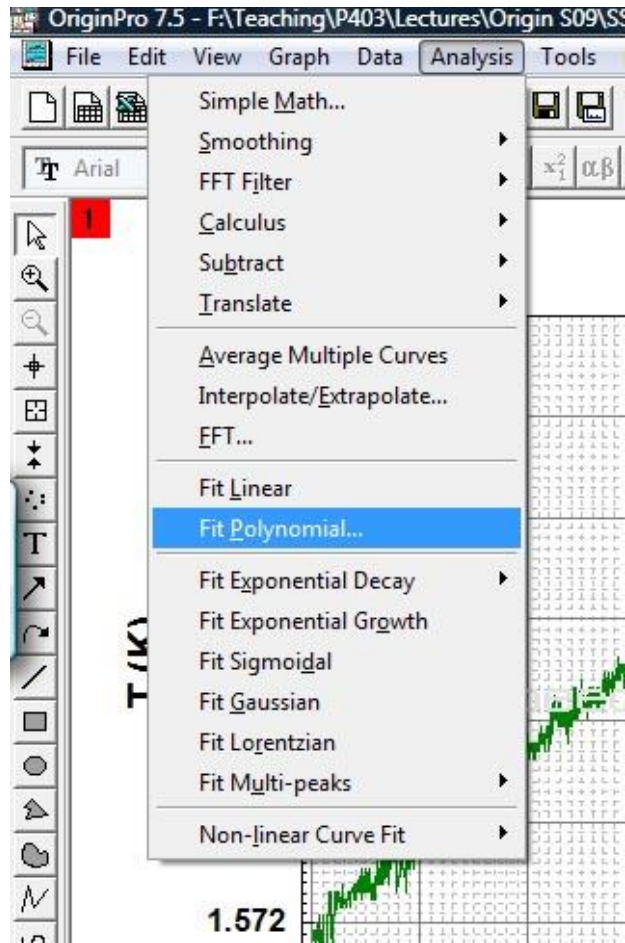


SS sample: Graph25

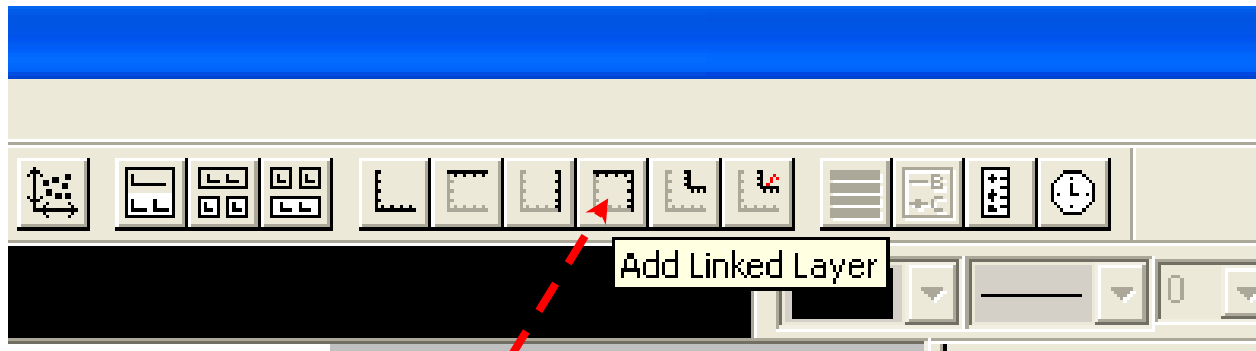
Graphical presentation of data: Fit Linear



Graphical presentation of data: Fit Polynomial

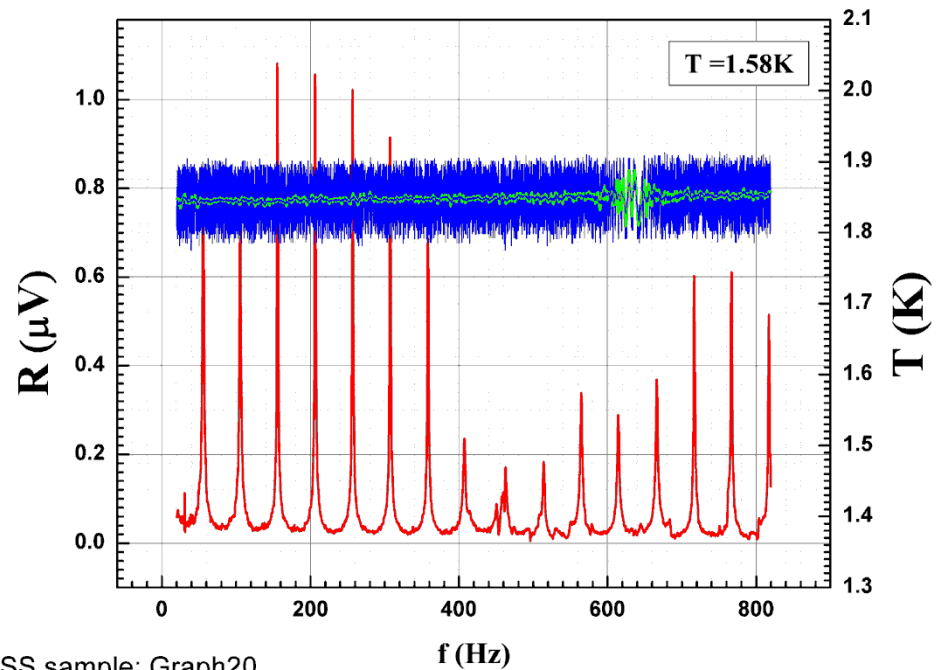


Graphical presentation of data: 2-layer graph



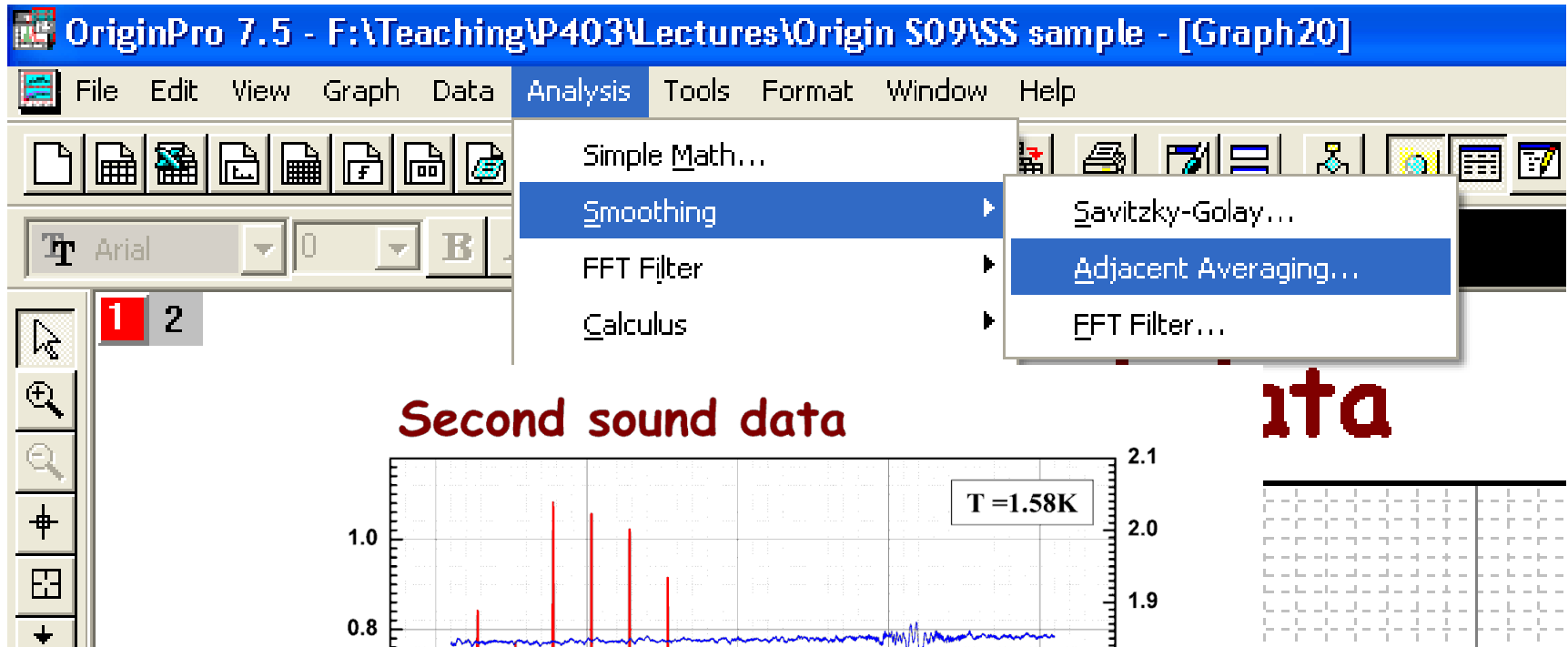
Add Layer

Second sound data

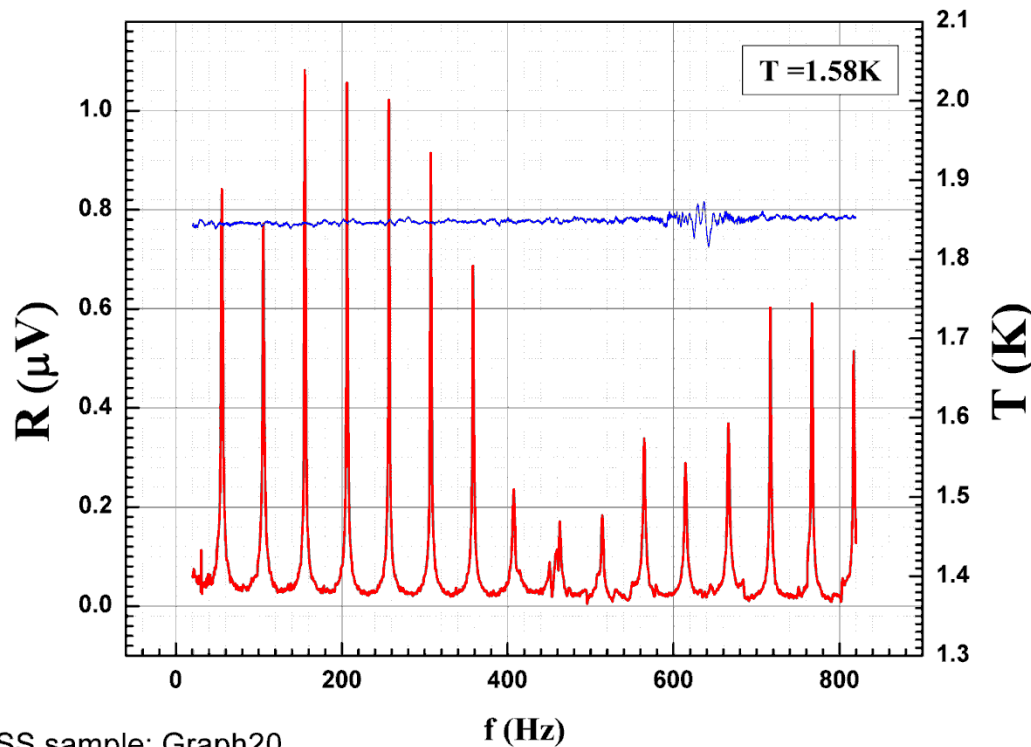


SS sample: Graph20

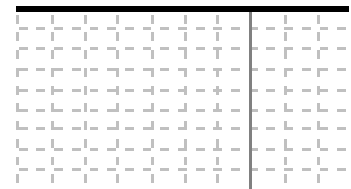
Graphical presentation of data: Smoothing



Second sound data



ita



Working with data: Worksheets

The screenshot displays the OriginPro 2015 interface. The main window shows a worksheet with two columns: A(X) and B(Y). Column A contains time values in seconds, and column B contains temperature values in Kelvin (T(K)). A context menu is open over column B, with 'Statistics on Column...' selected. A secondary window titled 'SecondSound2 - SecondSound_T2_16K VERY_BIG' is open, showing a tree view with 'Descriptive Statistics' expanded. Below this, a table provides summary statistics for the selected column.

	N total	Mean	Standard Deviation	Sum	Minimum	Median	Maximum
T(K)	49801	1.60112	0.0161	79737.52969	1.57091	1.60099	1.63058

Calculate statistics on the selected column(s) Average=1.60112 Sum=79737.52969 C

Working with data: Worksheets

The image shows a screenshot of the LabTalk software interface. The main window displays a spreadsheet with columns labeled A(X) through I(Y). A context menu is open over column B(Y), with the 'Set Column Values...' option selected. A 'Set Values' dialog box is open in the foreground, showing the formula 'col(B) - 273' entered in the 'Col(B)=' field. The dialog has 'Recalculate' set to 'Auto' and 'Before Formula Scripts' checked. A large blue arrow points from the 'Set Values' dialog to the 'Set Column Values' dialog in the background.

	A(X)	B(Y)	C(Y)	D(Y)	E(Y)	F(Y)	G(Y)	H(Y)	I(Y)
Long Name	time (s)	T(K)				f (Hz)	X (V)	Y(V)	R(V)
Units									
Comments									
F(x)=									
Sparklines									
1	5.35899	1.571							
2	5.84299	1.571							
3	6.281	1.571							
4	6.71799	1.571							
5	7.172	1.571							
6	7.60899	1.571							
7	8.437	1.571							
8	8.906	1.571							
9	9.39	1.571							
10	9.85899	1.571							
11	10.297	1.571							
12	10.71799	1.571							
13	11.156	1.571							
14	11.59299	1.571							
15	12.031	1.571							
16	12.46799	1.571							
17	12.89	1.571							
18	13.312	1.571							
19	13.73399	1.571							

Set Column Values... Ctrl+Q

Set Values - [SecondSound2]SecondSound_T2_16K VE...

Formula wcol(1) Col(A) Function Variables Options

Row (i): From <auto> To <auto>

Col(B) =

col(B) - 273

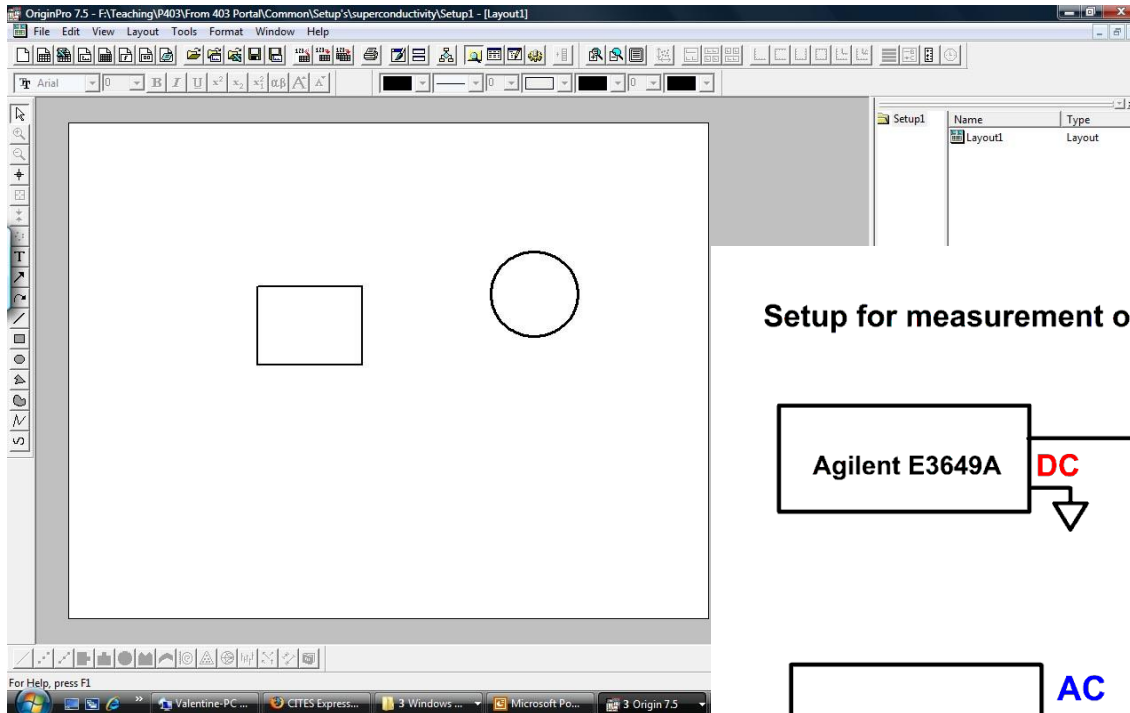
Recalculate Auto

OK Cancel Apply

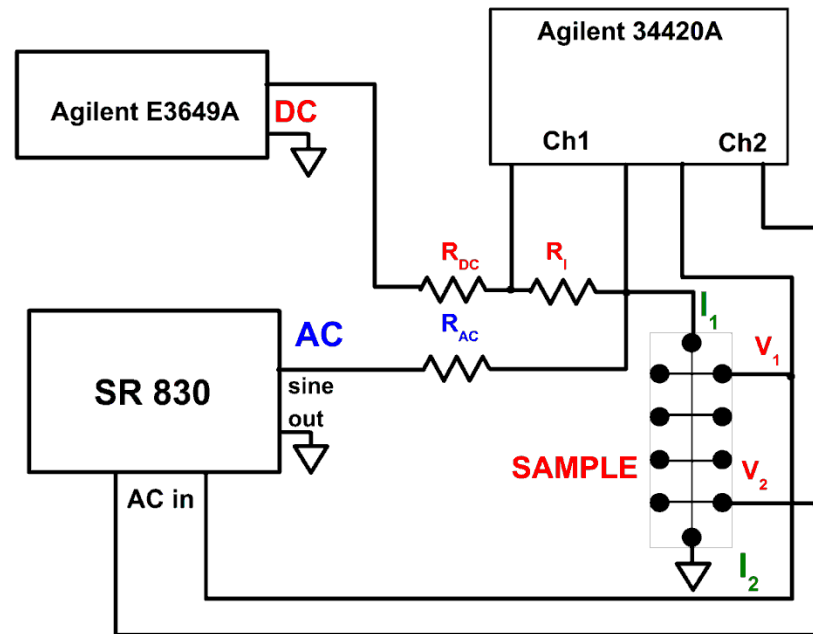
Before Formula Scripts

Enter LabTalk script to define variables or execute calculation before formula.

Layouts



Setup for measurement of s/c properties



Custom tools

The screenshot displays the OriginPro 2015 (Academic) 64-bit interface. The main window shows a spreadsheet titled 'Book1' with columns 'A(X)' and 'B(Y)'. The spreadsheet contains the following data:

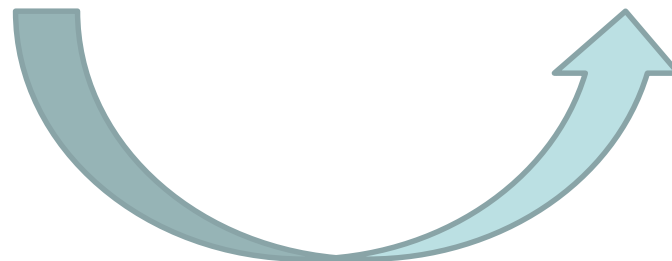
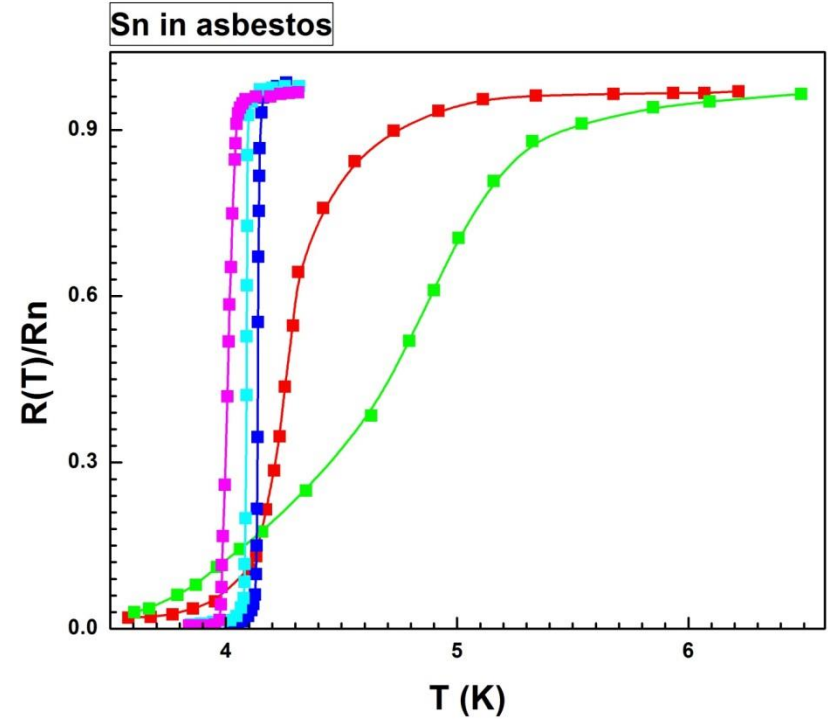
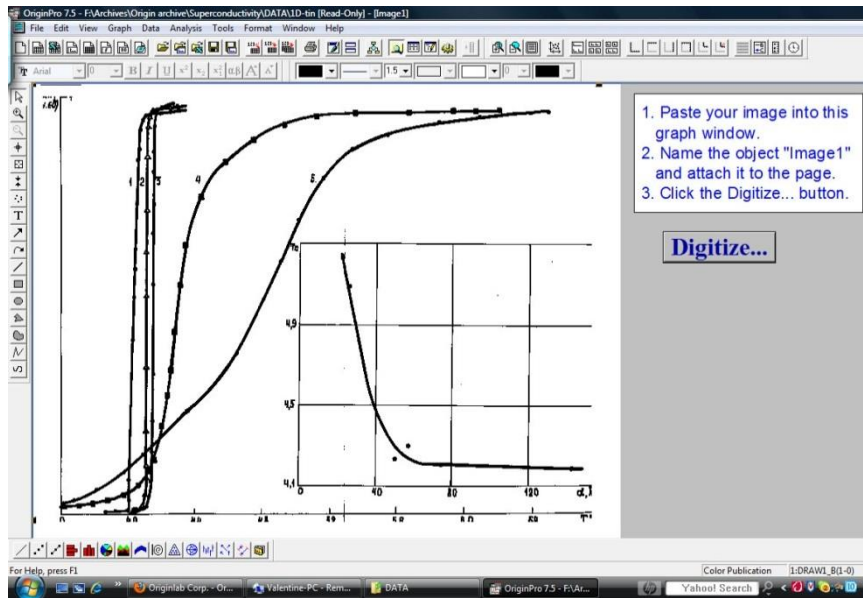
	A(X)	B(Y)
Long Name		
Units		
Comments		
F(x)=		
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		

The 'Tools' menu is open, showing the following options:

- Options... (Ctrl+U)
- Fitting Function Builder... (F8)
- Virtual Matrix Manager...
- Transfer User Files...
- Digitizer...** (highlighted)
- Video Builder...

The interface also includes a Project Explorer (1) on the left, a Quick Help pane, a Messages Log, and a Smart Hint Log. The status bar at the bottom indicates 'Sheet1'.

Using digitizer script



Origin at UIUC Webstore and OriginLab site.

The screenshot shows the UIUC Webstore interface. At the top, there are navigation links for 'HOME', 'ABOUT US', 'EVENTS', 'NEWS', and 'SUPPORT'. Below this is a 'PRODUCT SEARCH' bar with a 'GO' button and a 'BROWSE ALL' button. The main content area displays the 'OriginPro' software listing, which includes the OriginLab logo, the product name 'OriginPro', a price of '\$0.00', and the text 'OriginLab, Inc.'. A small 'Eligibility' note is visible below the product name.

<https://webstore.illinois.edu>

www.originlab.com

The screenshot displays the Origin 2017 software interface, titled 'ORIGIN® 2017 Graphing & Analysis'. The interface features a grid of various data visualization tools, including 3D surface plots, 2D line graphs, bar charts, and maps. Below the grid is a detailed table of contents for the software's documentation.

Introduction to Origin and OriginPro	2	Handling Repetitive Tasks	28-31
What's New in Origin 2017	4-5	Custom Reports	32
2D Graphing	6-11	Publishing	33
3D Graphing	12	Working with Excel®, MATLAB® Connectivity	34
Database Access	14	LabVIEW™ Connectivity	35
Data Processing	16	Programming	36-39
Gadgets	18	User Case Studies	40
Apps in Origin	19	Comparison of Origin and OriginPro	42
Curve Fitting	20	Key Features by Version	44
Peak Analysis	22	Licensing	48
Signal Processing	24	Product Support	50
Statistics	26	About OriginLab	51

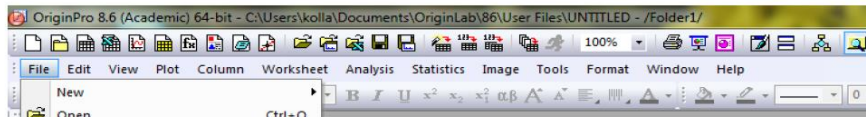


Origin manuals



Working with Origin 8.6.

Step1. Importing data



A very short and simple manual covering only the main operations with Origin, and manuals from Origin are on the server (`\\Phyap\portal\PHYCS403\Common\Origin manuals`).

Do not forget about Origin Help

Video Tutorials on the company website

OriginLab® Data Analysis and Graphing Software

Company	Products	Support	Solutions	Purchase	D
Help Center		SUPPORT : VIDEO TUTORIALS			
Video Tutorials		Video Tutorials			
User Forum					

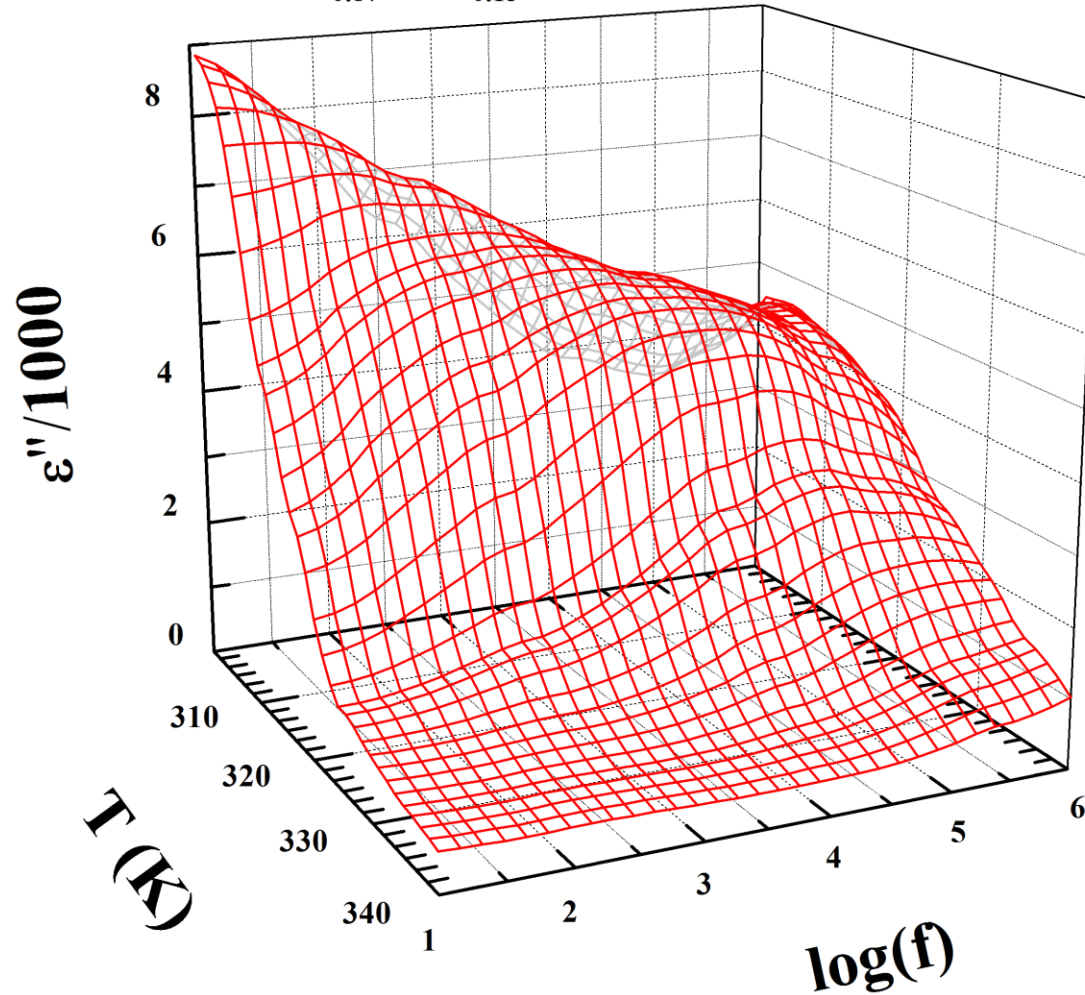
<http://www.originlab.com/index.aspx?go=SUPPORT/VideoTutorials>



Example Origin graphs

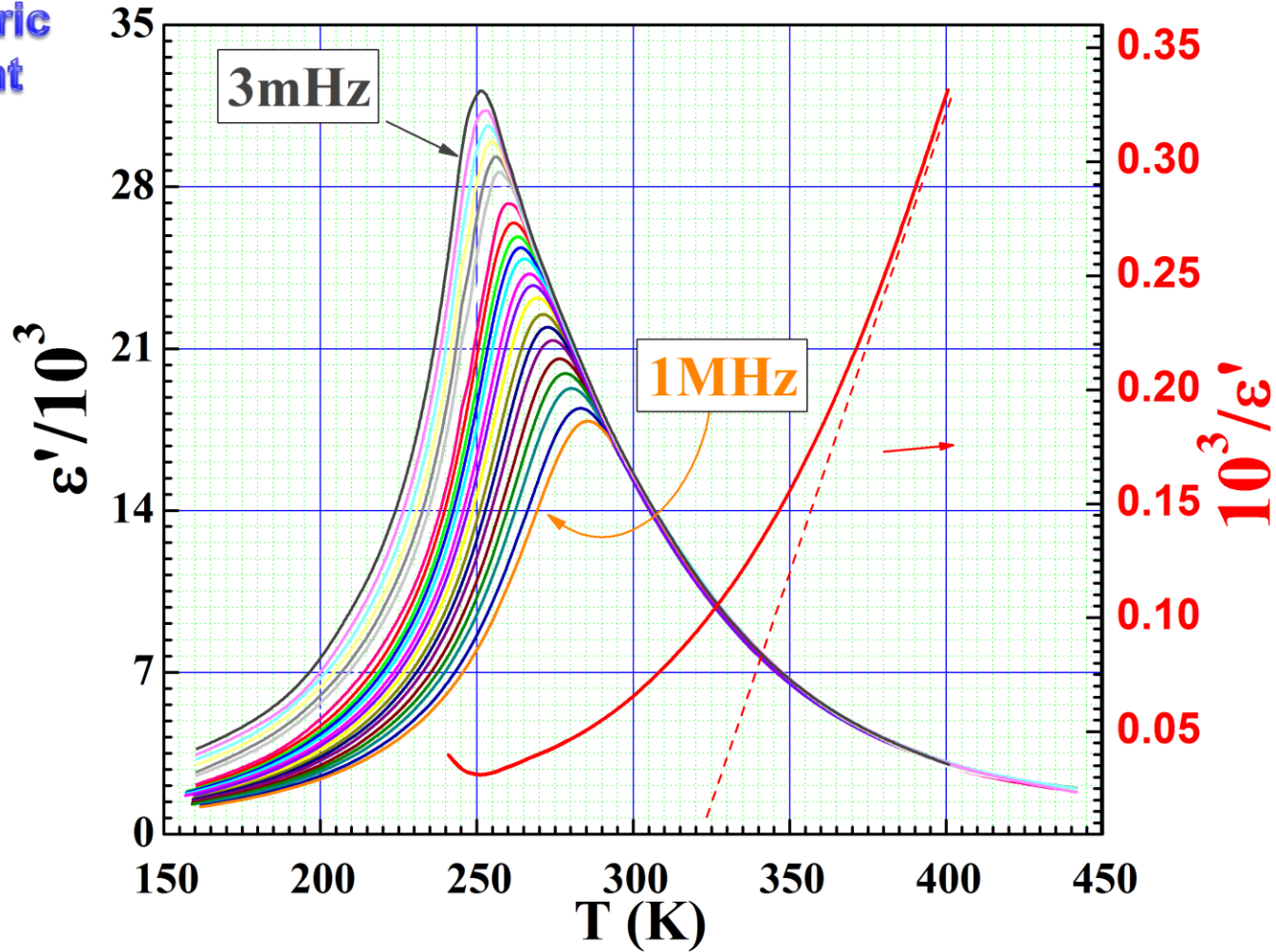
(PMN)_{0.87}(PT)_{0.13}, single crystal

Ferroelectric
Experiment



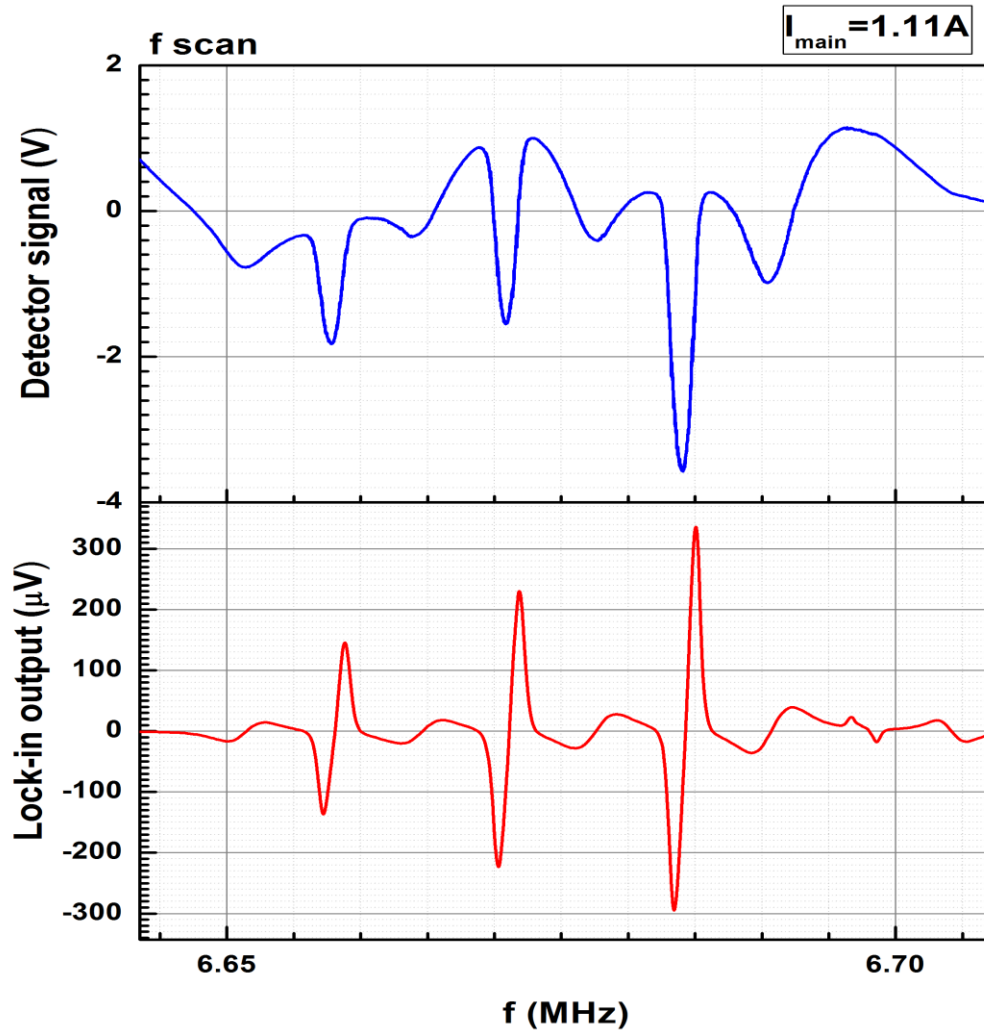
Example Origin graphs

Ferroelectric
Experiment



Example Origin graphs

Optical
pumping

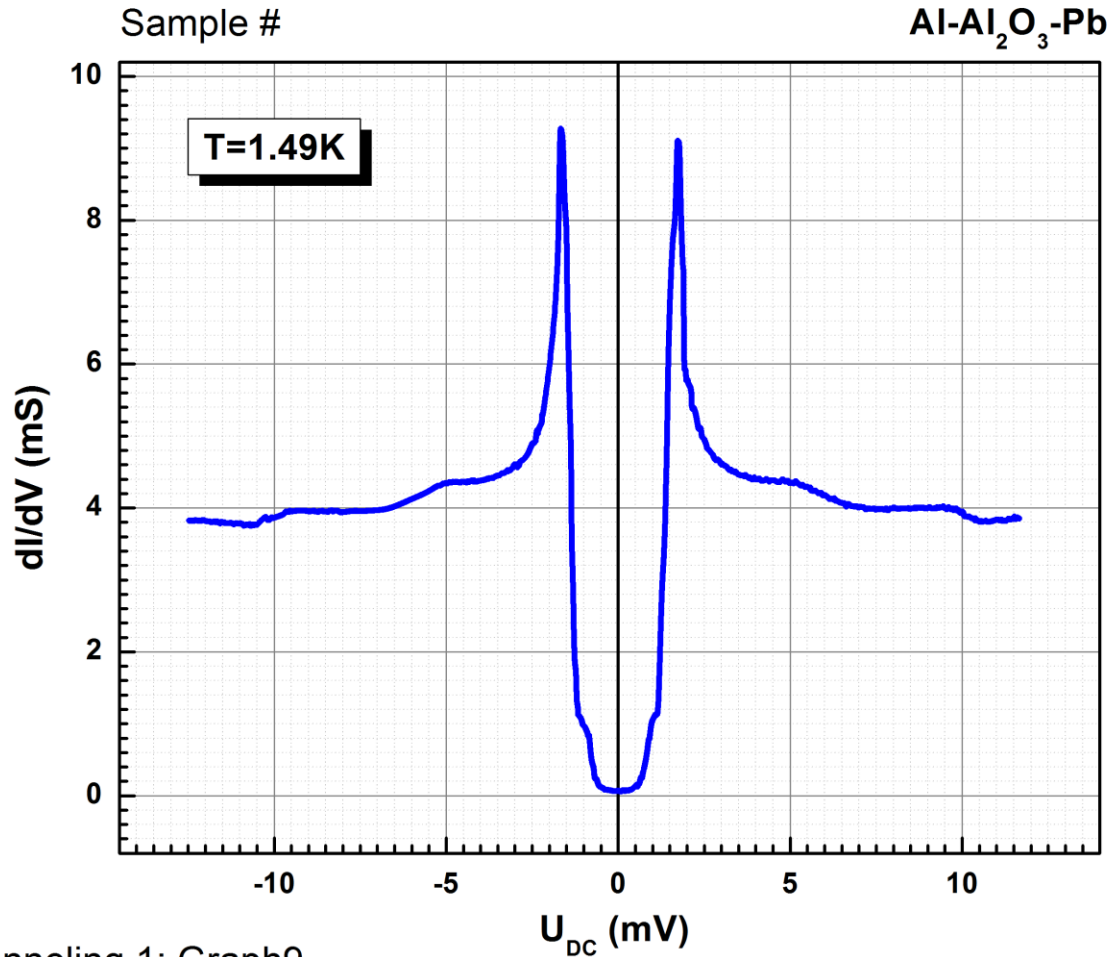


Mapping 0.5-2.5A from March 1st 2012: Graph7



Example Origin graphs

Tunneling
Experiment



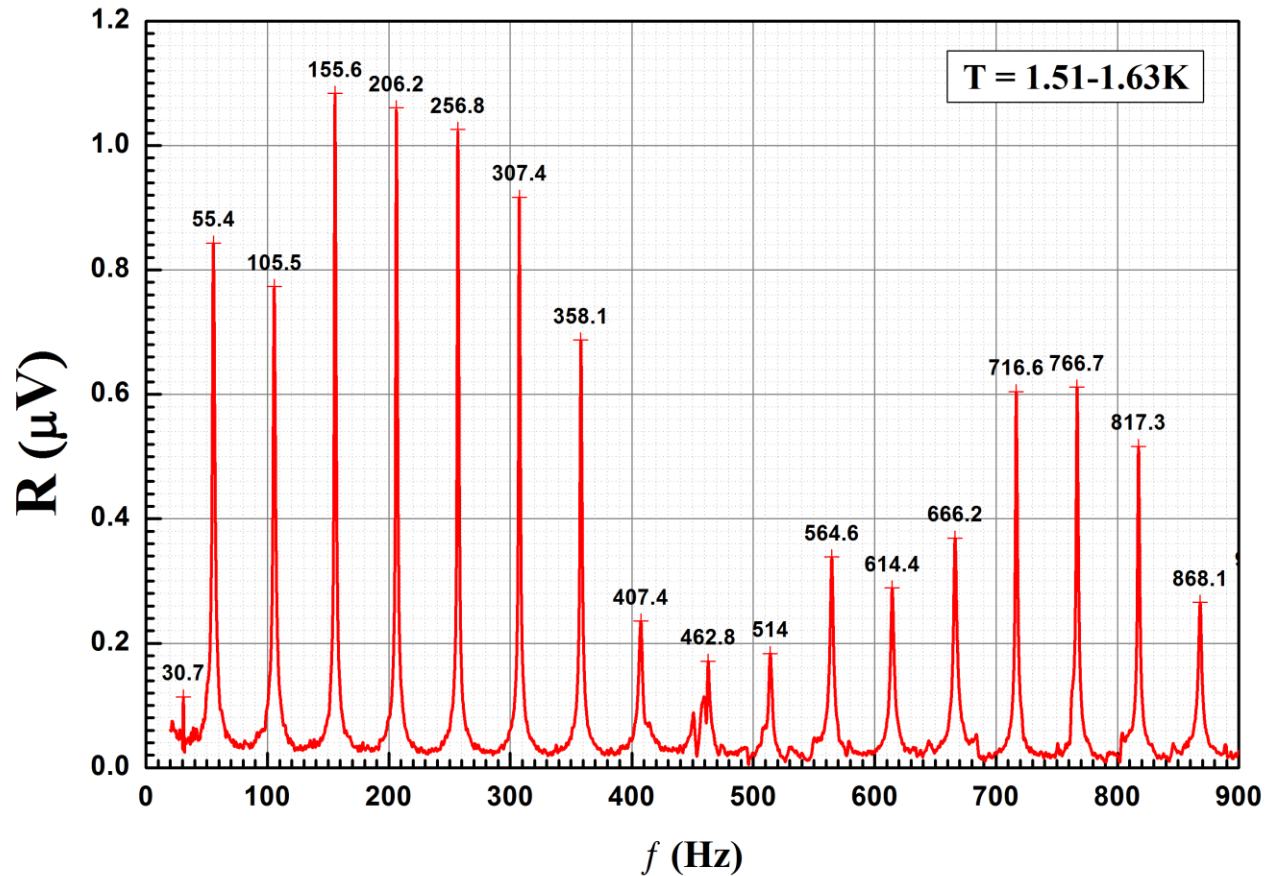
Tunneling 1: Graph9

Sample n2 run8 zoom temp 1.55K



Example Origin graphs

Second
sound



Example Origin graphs

Magnet mapping

