



Scientific Graphing and Analysis Software

Origin is on all Physics 403 computers.

What it can do:

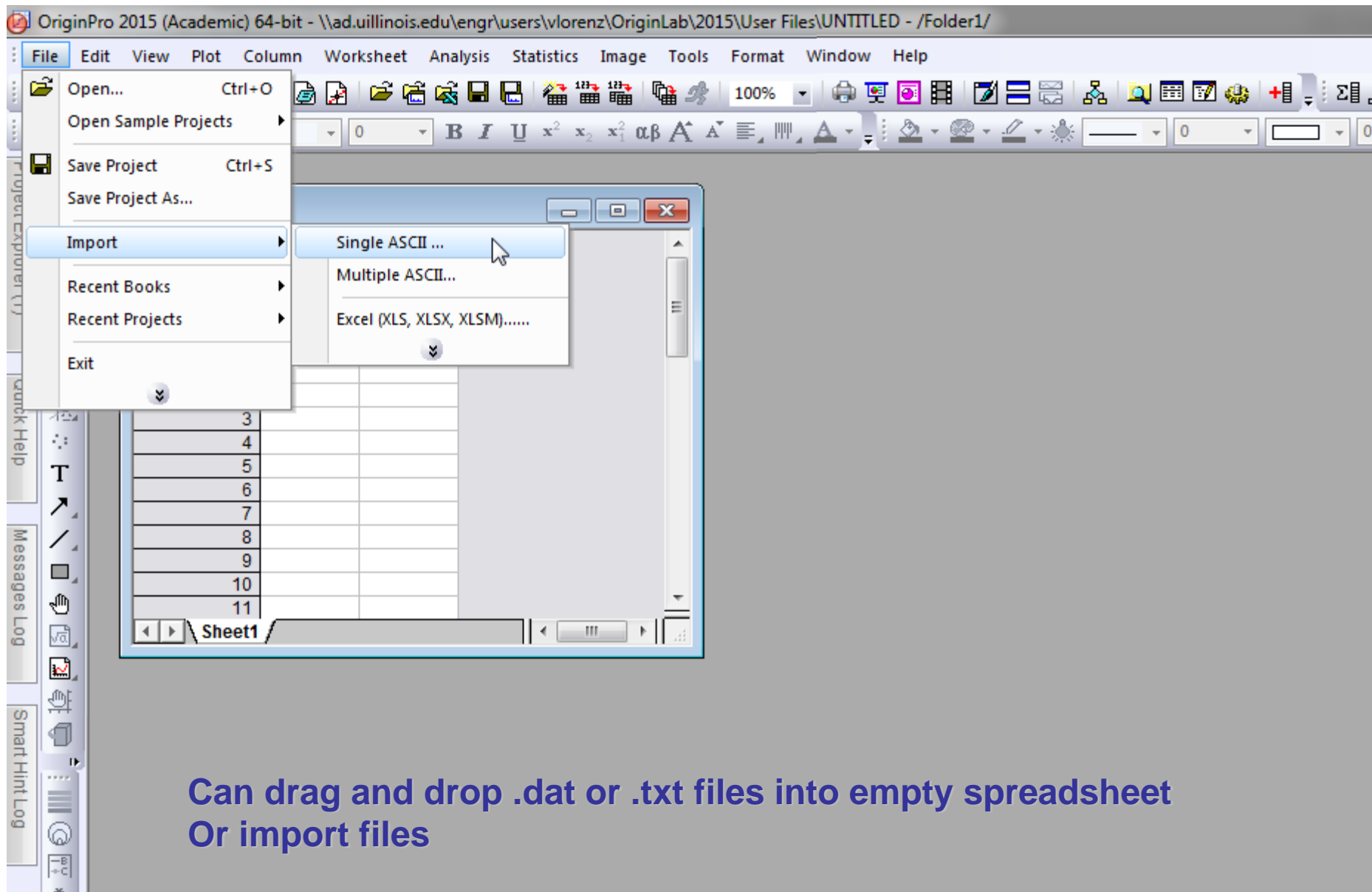
1. Graphical presentation of data

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

OriginPro 2015 (Academic) 64-bit - \\ad.uillinois.edu\engr\users\vlorenz\OriginLab\2015\User Files\UNTITLED * - /Folder1/

File Edit View Plot Column Worksheet Analysis Statistics Image Tools Format Window Help

100%

Default: Arial 9 B I U x^2 x_2 x_2^2 $\alpha\beta$ A A

0.5

Project Explorer (1) Quick Help Messages Log Smart Hint Log (1)

Book1 - s1.dat

	A(X)	B(Y)	C(X)	D(X)	E(X)	F(X)	G(X)
Long Name	Freq	Vre					
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					

Plot

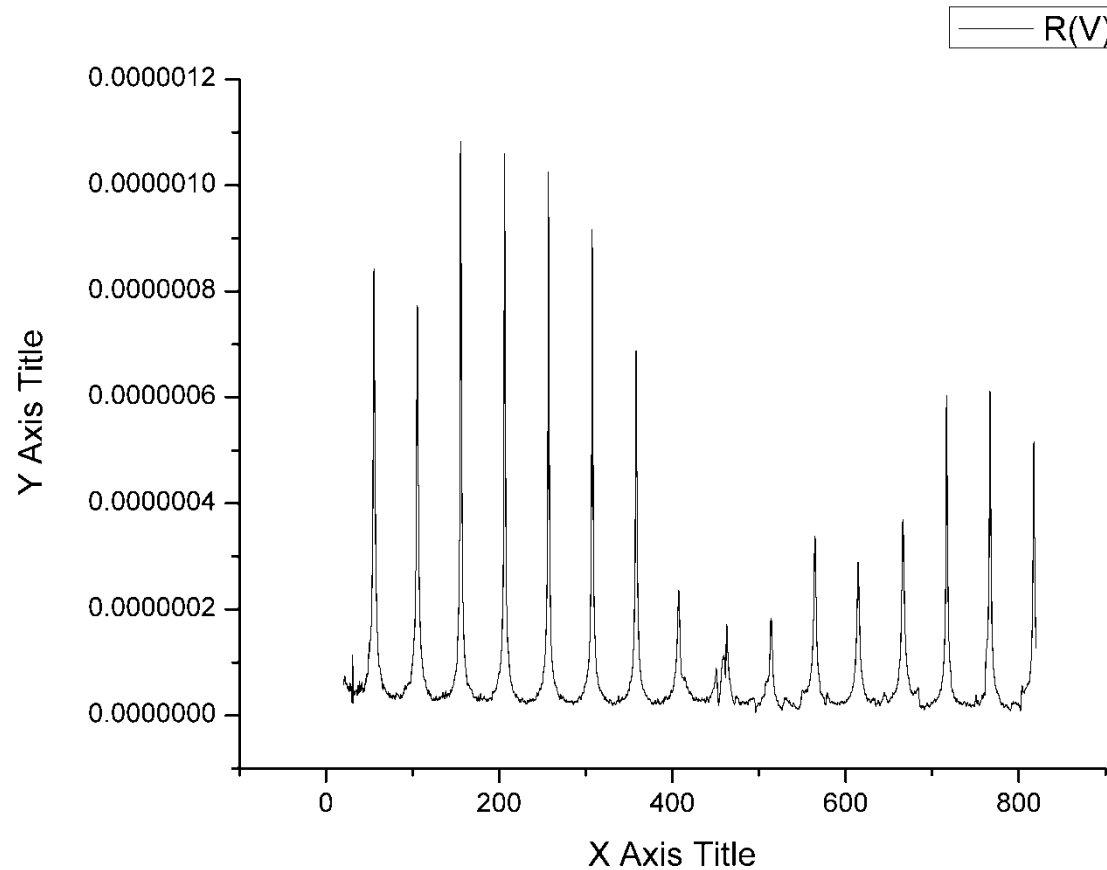
- Copy
- Copy Columns to...
- Set As
- Set As Categorical
- Set Column Values... Ctrl+Q
- Sort Worksheet
- Hide/Unhide Columns
- Properties...

Line

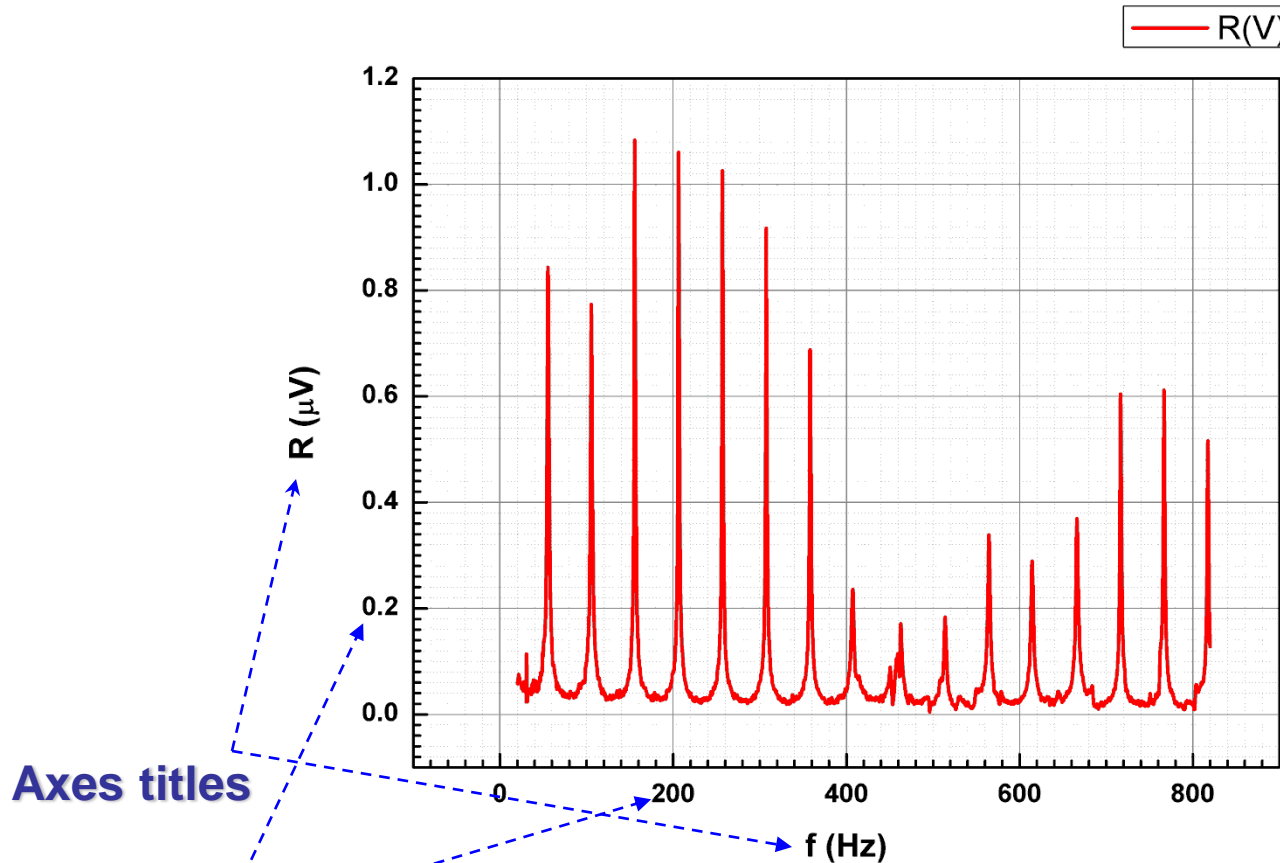
- Symbol
- Line + Symbol
- Column/Bar/Pie
- Multi-Y
- Y-offset/Waterfall
- Multi-Panel
- Statistics
- Contour/Heat Map
- Profile
- Specialized
- 1 Line

Line

Graphical presentation of data: Basic Plot



Graphical presentation of data: Basic Plot



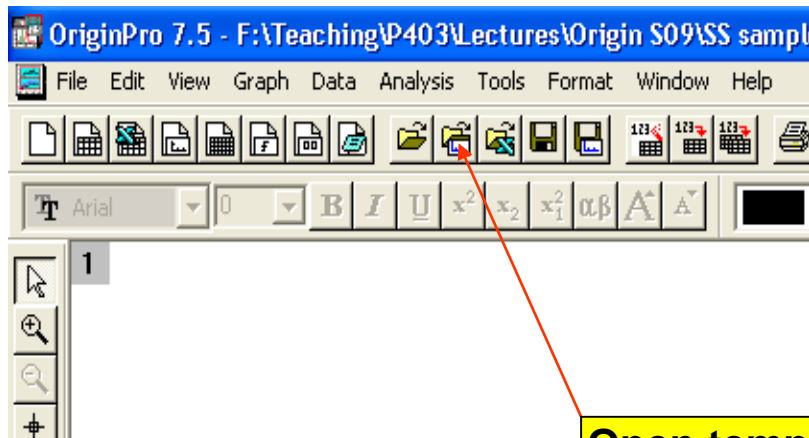
Top and Right axes,
grid lines

Axes titles

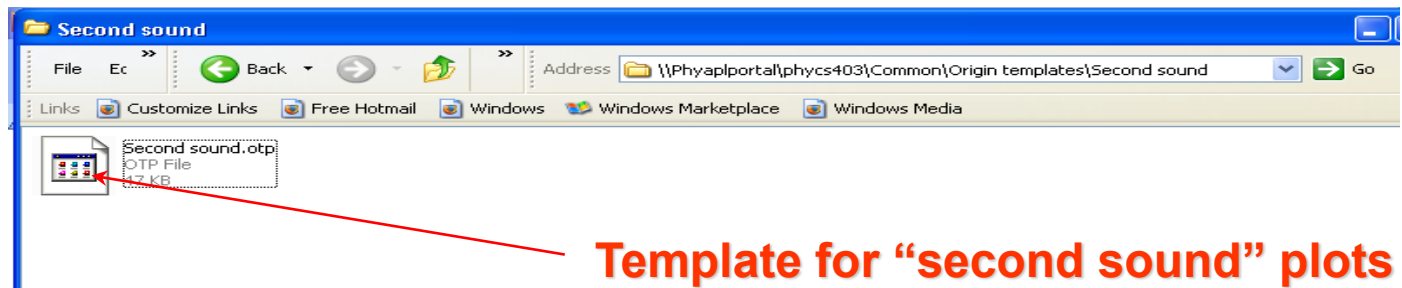
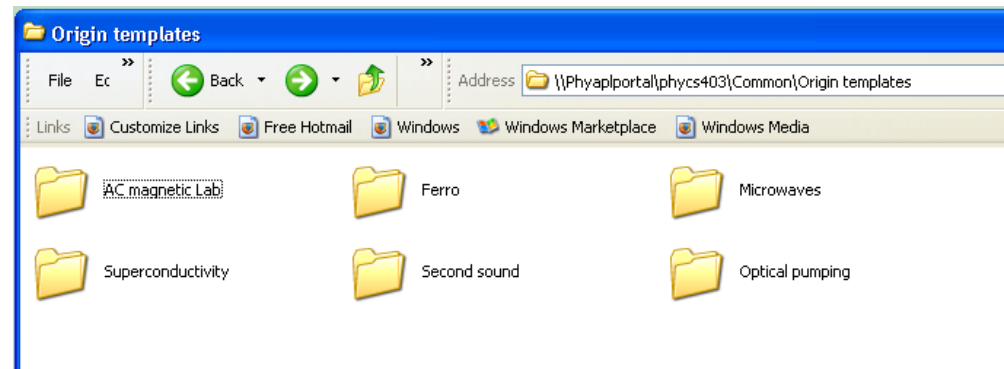
Bold tick labels.

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

Graphical presentation of data: Templates



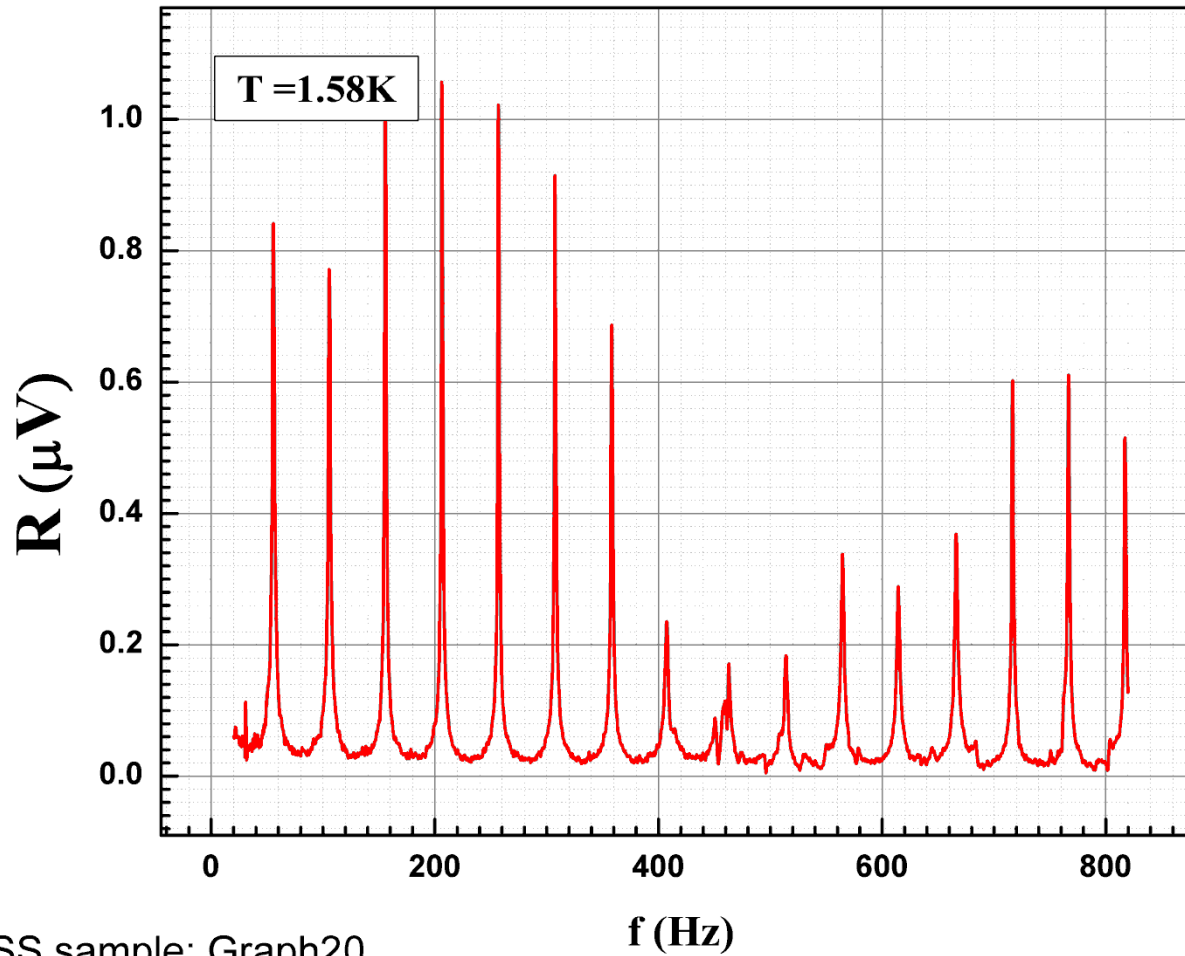
Open template



Template for “second sound” plots

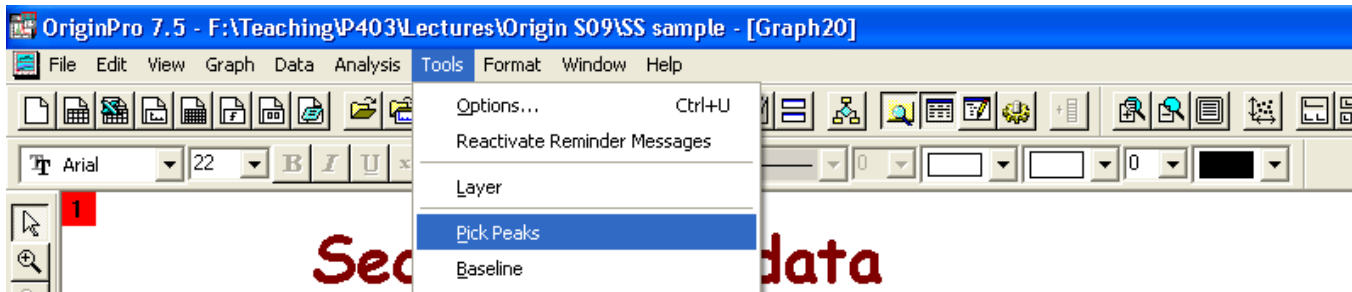
Graphical presentation of data: Templates

Second sound data

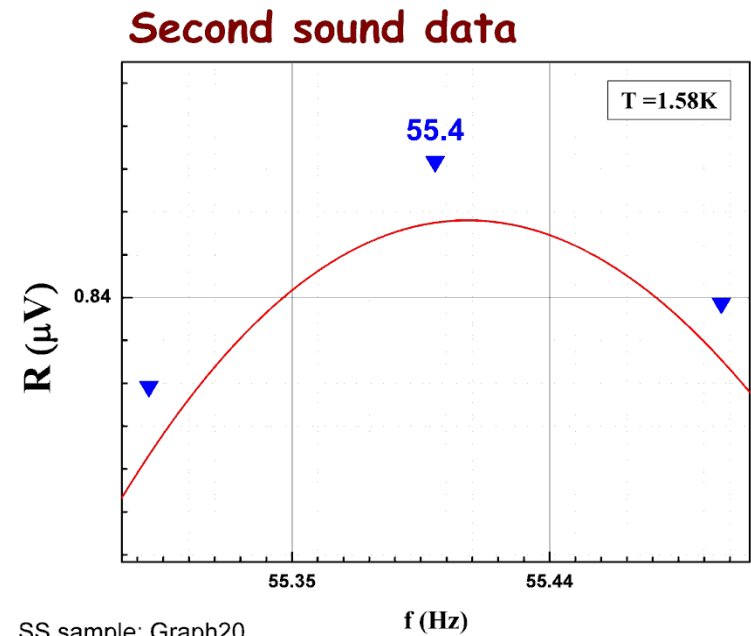
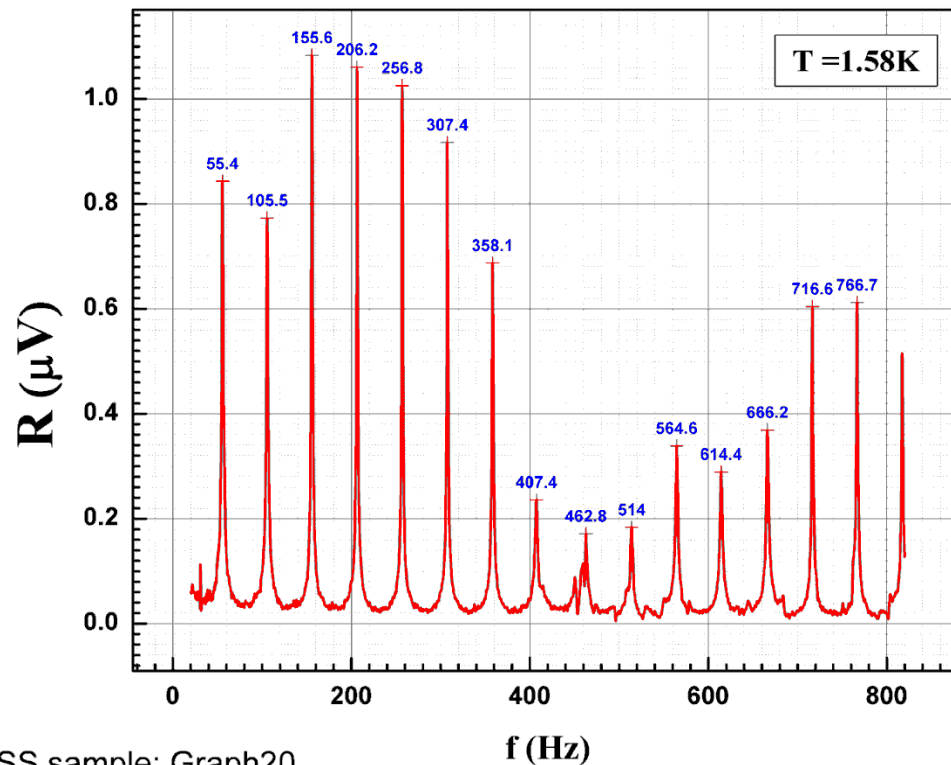


SS sample: Graph20

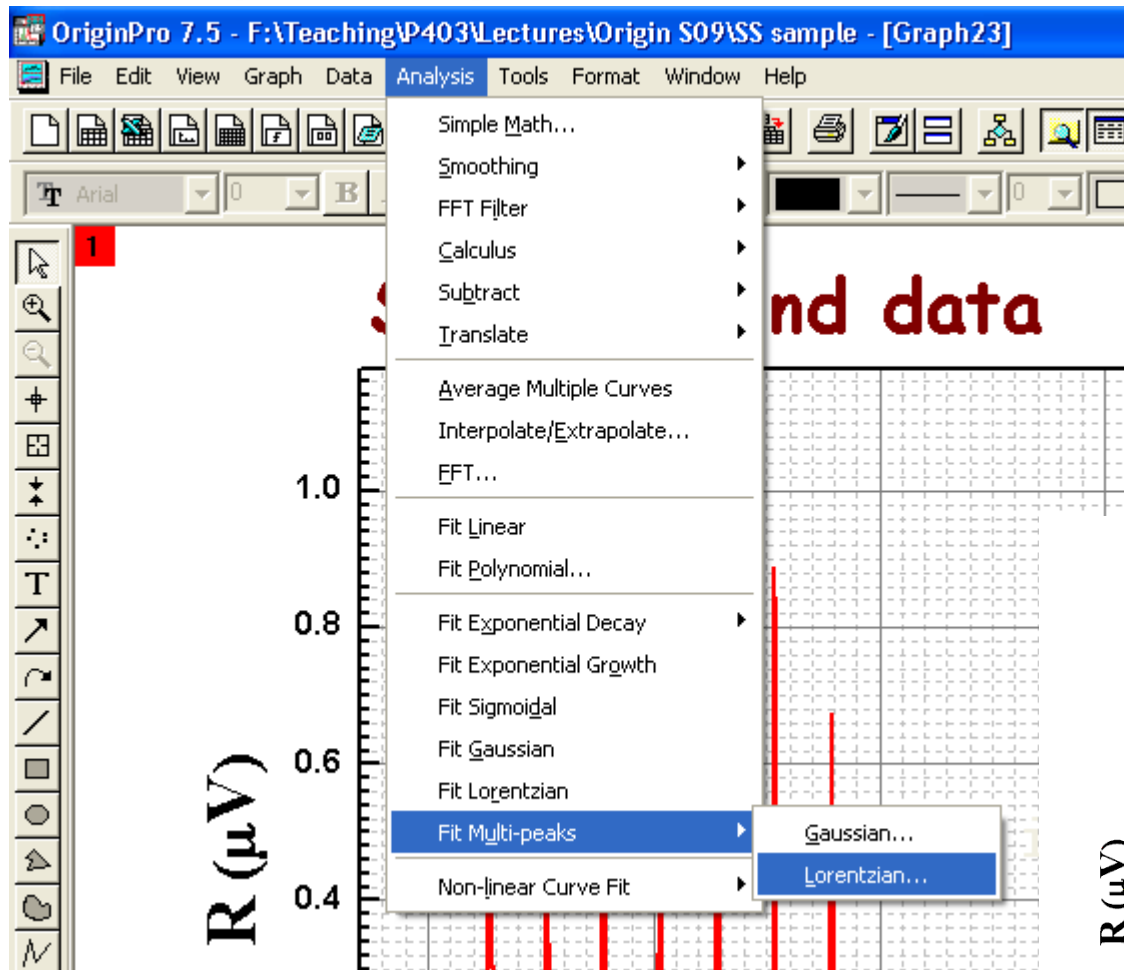
Graphical presentation of data: Fitting, etc.



Second sound data

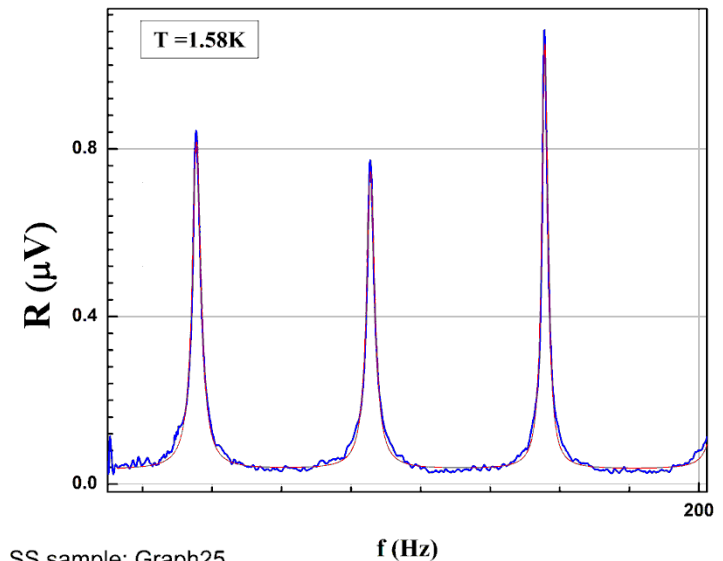


Graphical presentation of data: Fitting, etc.



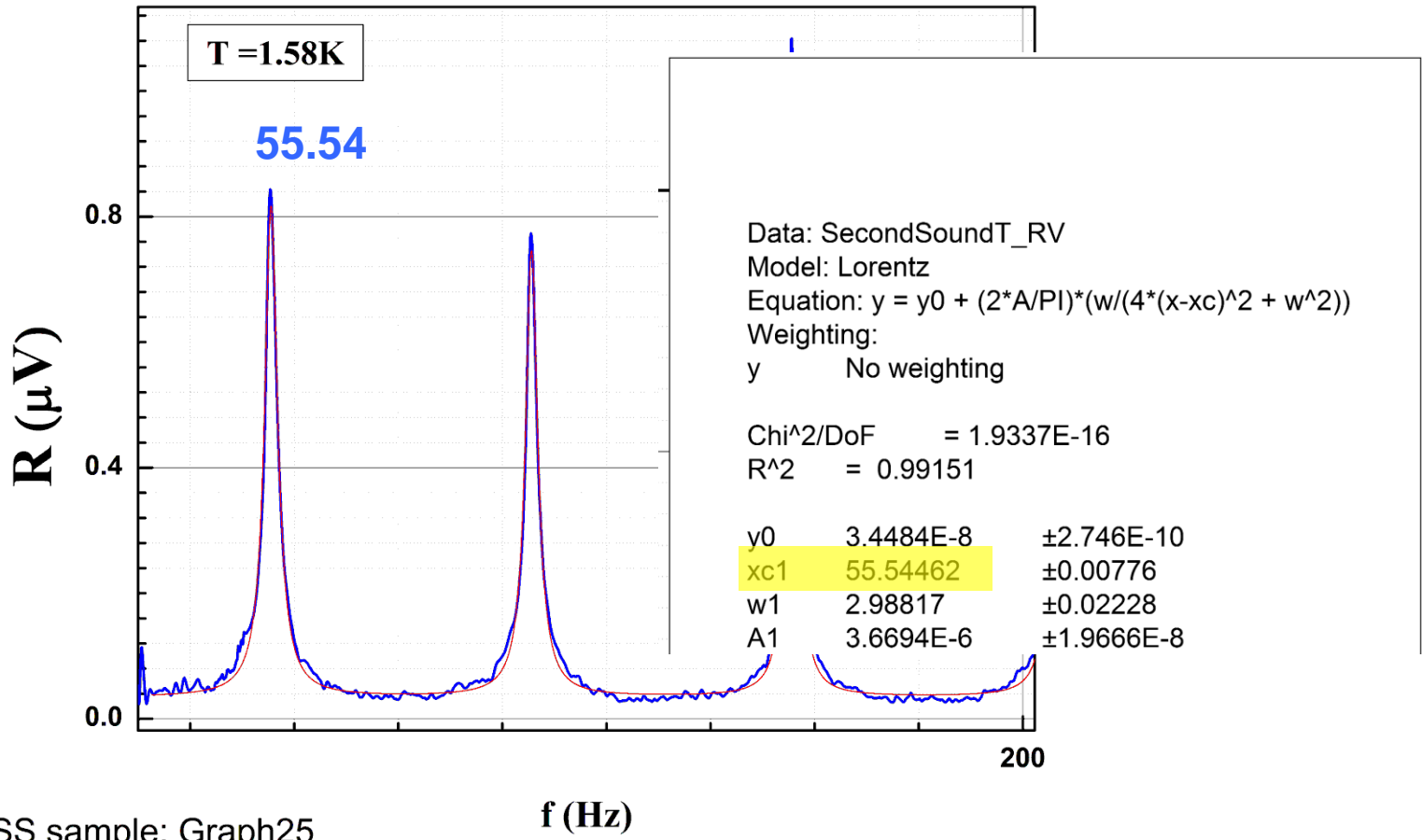
nd data

Second sound data

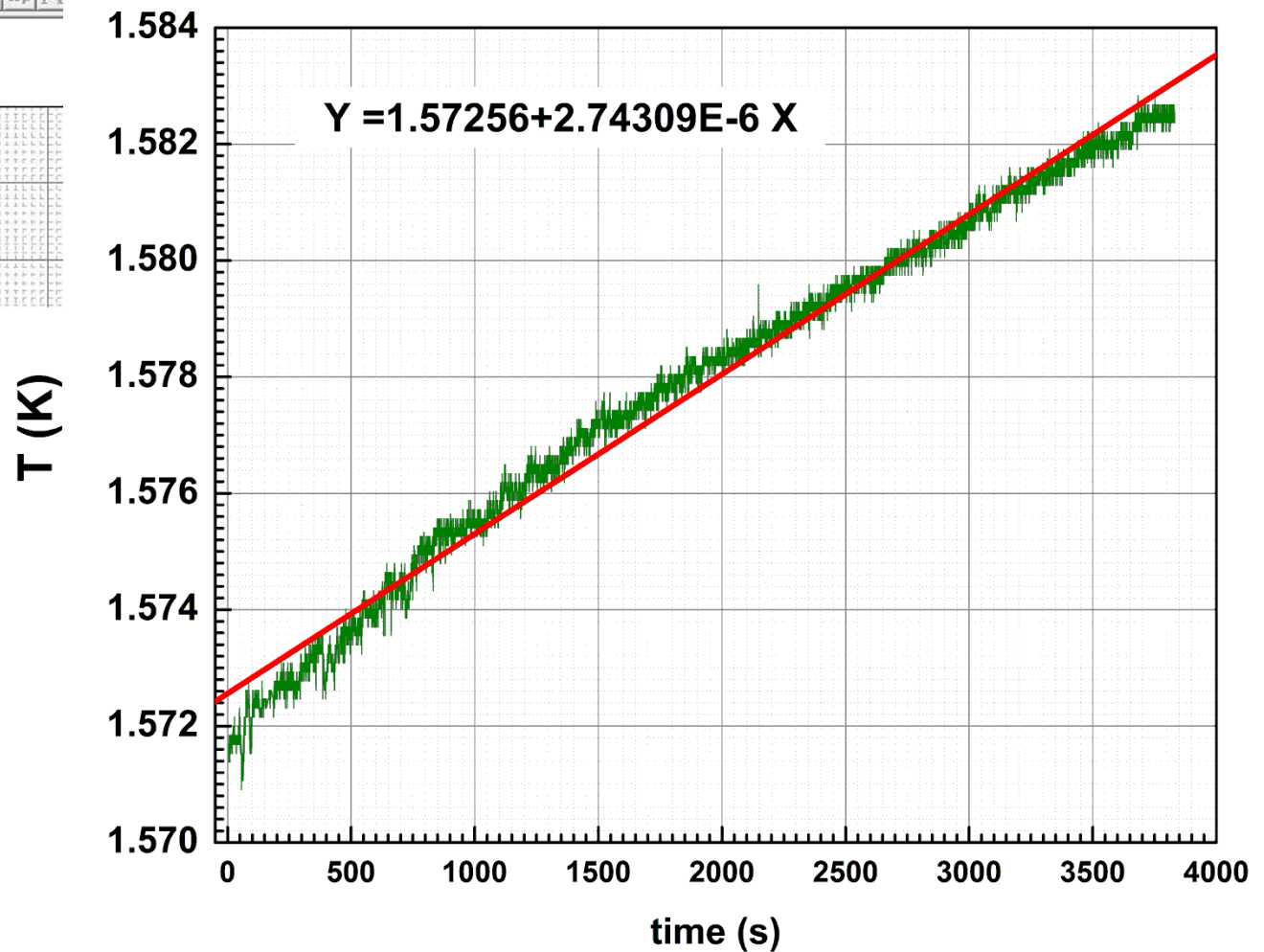
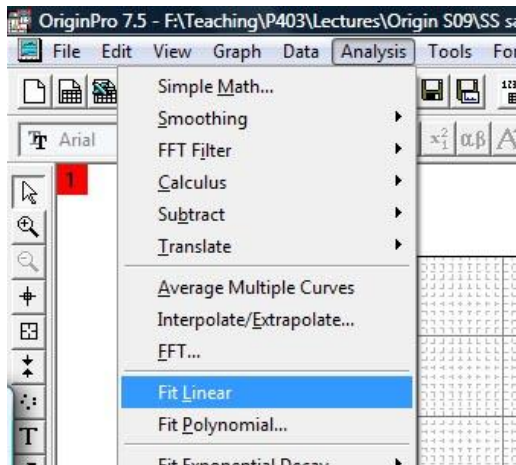


Graphical presentation of data: Fitting, etc.

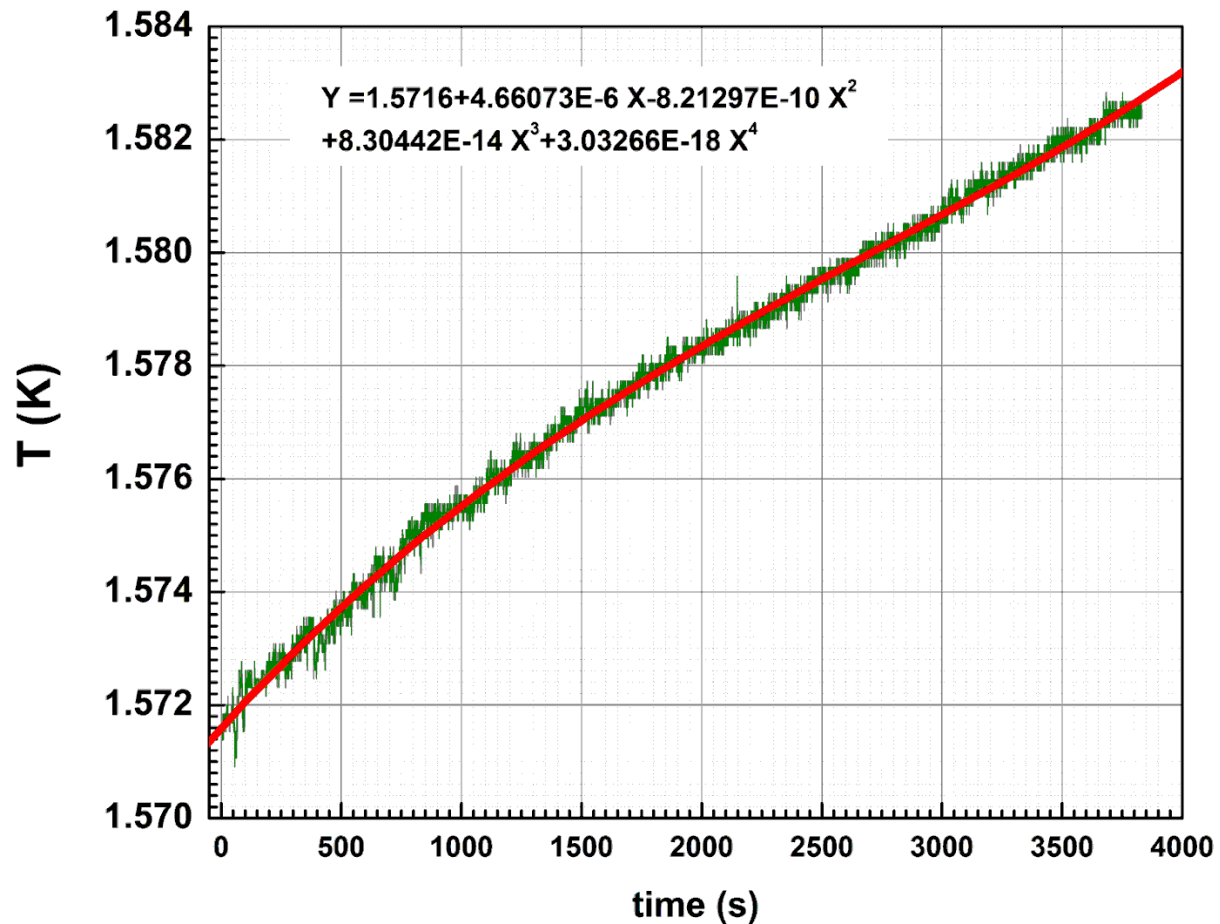
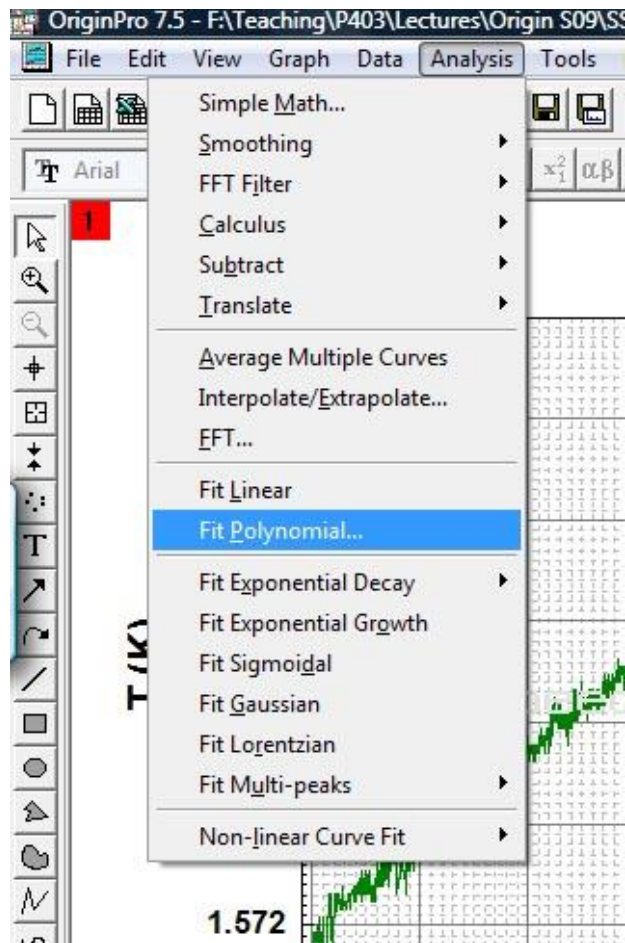
Second sound data



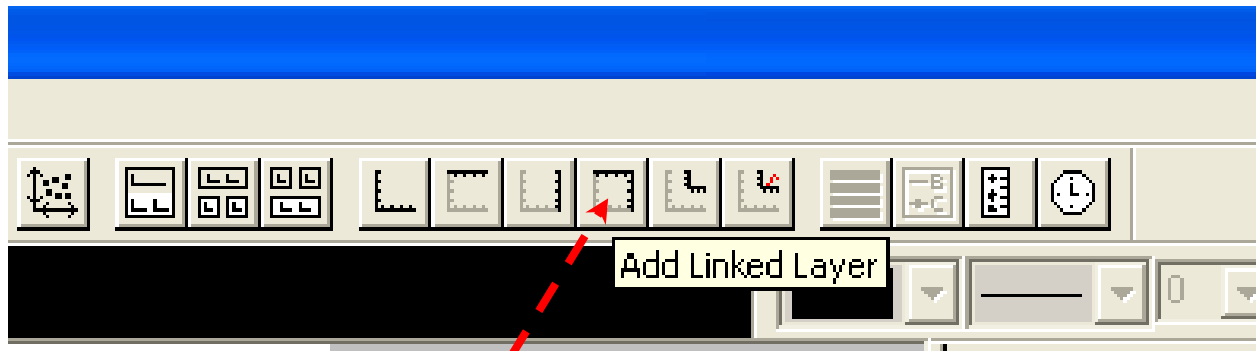
Graphical presentation of data: Fit Linear



Graphical presentation of data: Fit Polynomial

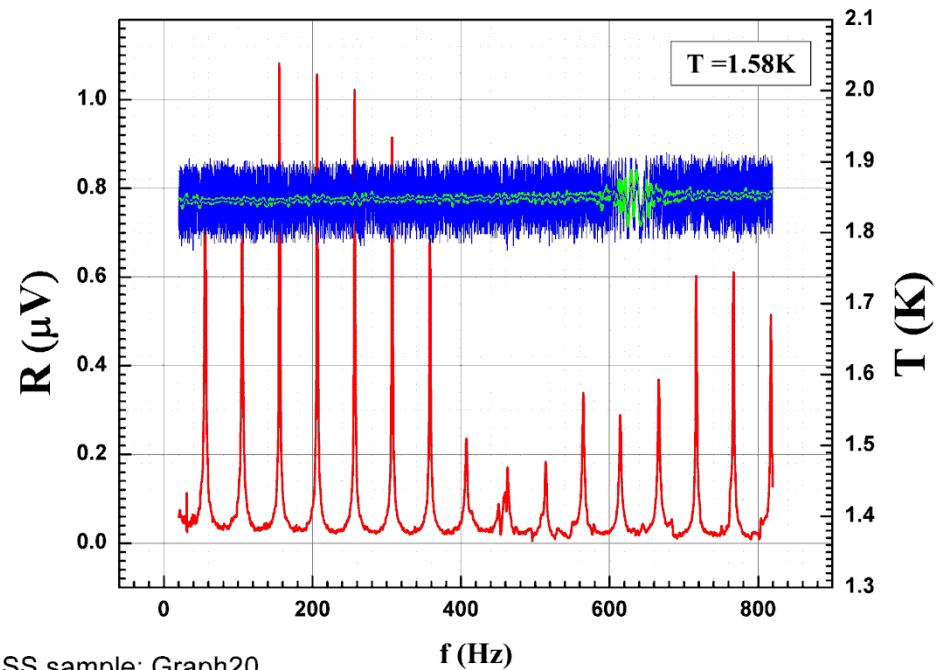


Graphical presentation of data: 2-layer graph



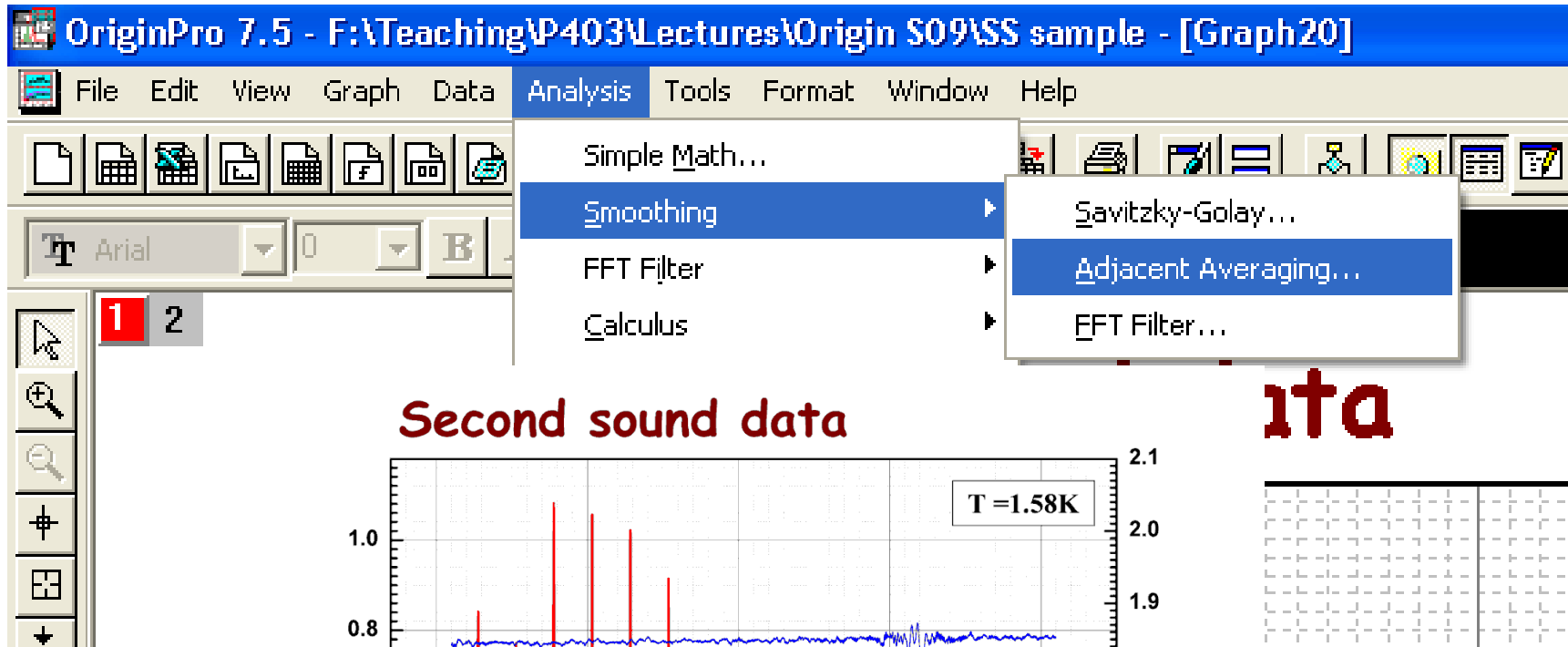
Add Layer

Second sound data



SS sample: Graph20

Graphical presentation of data: Smoothing



Working with data: Worksheets

The screenshot displays the OriginPro 2015 (Academic) 64-bit interface. The main window shows a worksheet titled "SecondSound2 - SecondSound_T" with columns A(X) and B(Y). The data includes "Long Name", "Units", "Comments", "F(x)", "Sparklines", and numerical values. A context menu is open over the data, listing various actions such as "Remove Links", "Set As", "Set As Categorical", "Set Column Values...", "Set Multiple Columns Values...", "Fill Column with", "Set Sampling Interval...", "Show X Column...", "Filter", "Mask", "Mask Cells by Condition...", "Sort Column", "Sort Worksheet", "Sort Columns by Label...", "Reverse Order", "Normalize...", "Frequency Count...", "Statistics on Column...", and "Hide/Unhide Columns". The "Statistics on Column..." option is highlighted. A separate window titled "SecondSound2 - SecondSound_T2_16K VERY_BIG" displays the "Statistics on Columns (1/24/2017 09:37:16)" results. The statistics window shows a table with descriptive 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 displays the LabTalk software interface with two worksheets and a 'Set Values' dialog box.

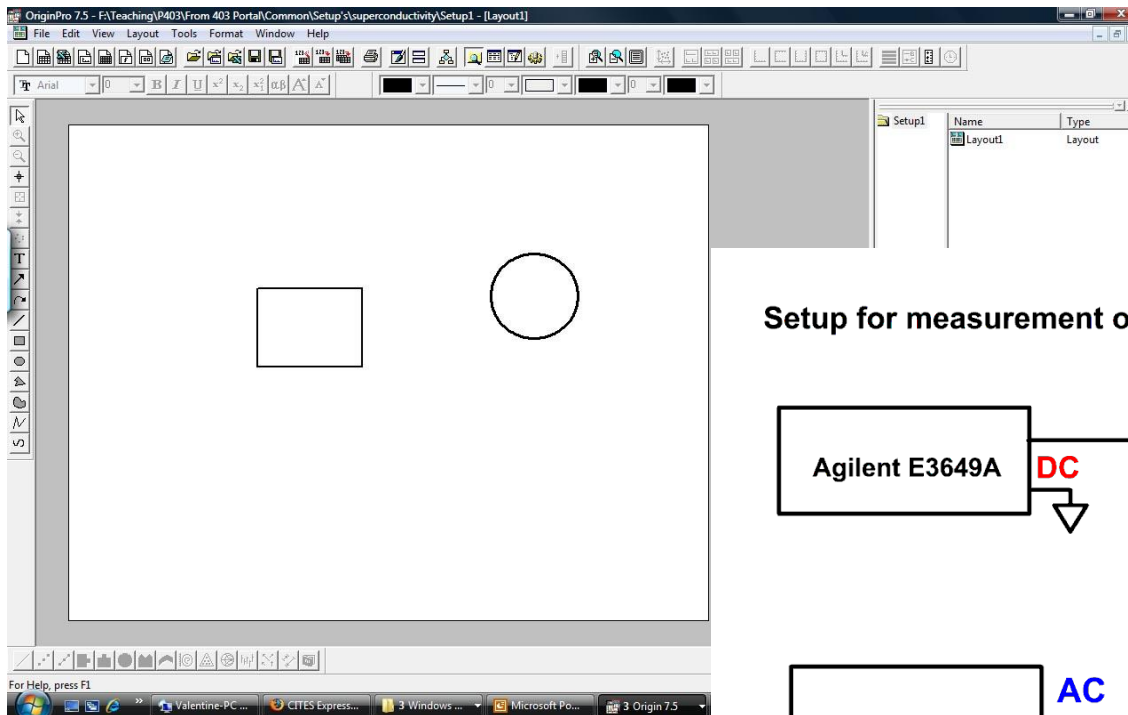
Worksheet 1 (Left): Titled 'SecondSound2 - SecondSound_T2_16K VERY_BIG'. It contains columns A(X) through I(Y). Column A(X) is labeled 'time (s)' and column B(Y) is labeled 'T(K)'. The data shows a series of values for time and temperature over 19 rows. A context menu is open over column B, with 'Set Column Values...' selected.

Worksheet 2 (Right): Also titled 'SecondSound2 - SecondSound_T2_16K VERY_BIG'. It contains columns A(X) through I(Y). Column A(X) is labeled 'time (s)' and column B(Y) is labeled 'T(K)'. The data shows a series of values for time and temperature over 19 rows. A context menu is open over column B, with 'Set Column Values...' selected.

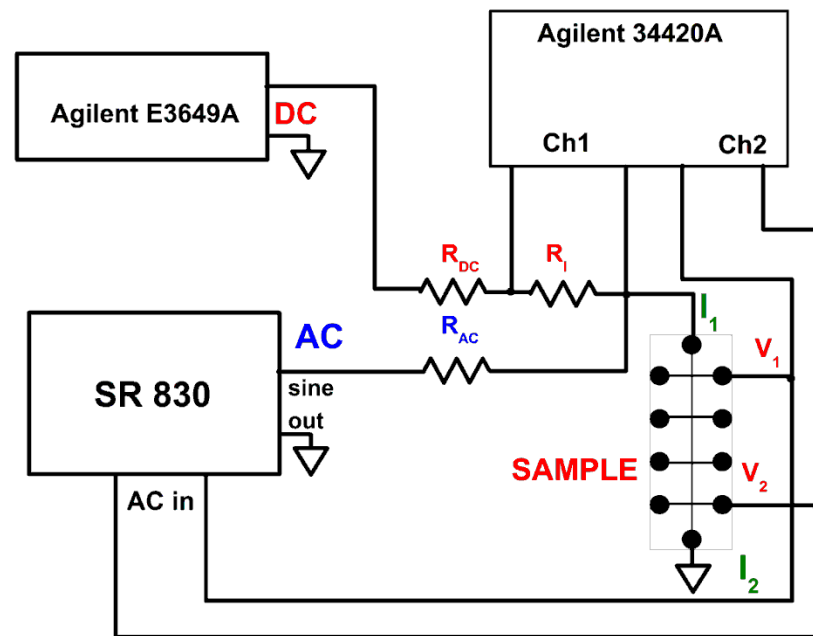
Set Values Dialog Box (Bottom): Titled 'Set Values - [SecondSound2]SecondSound_T2_16K VE...'. It shows the formula 'col(B) = col(B) - 273' and the 'Recalculate' button set to 'Auto'. The 'Before Formula Scripts' section is visible, containing the text: 'Enter LabTalk script to define variables or execute calculation before formula.'

A large blue arrow points from the 'Set Values' dialog box to the 'Set Column Values...' option in the context menu of the right worksheet.

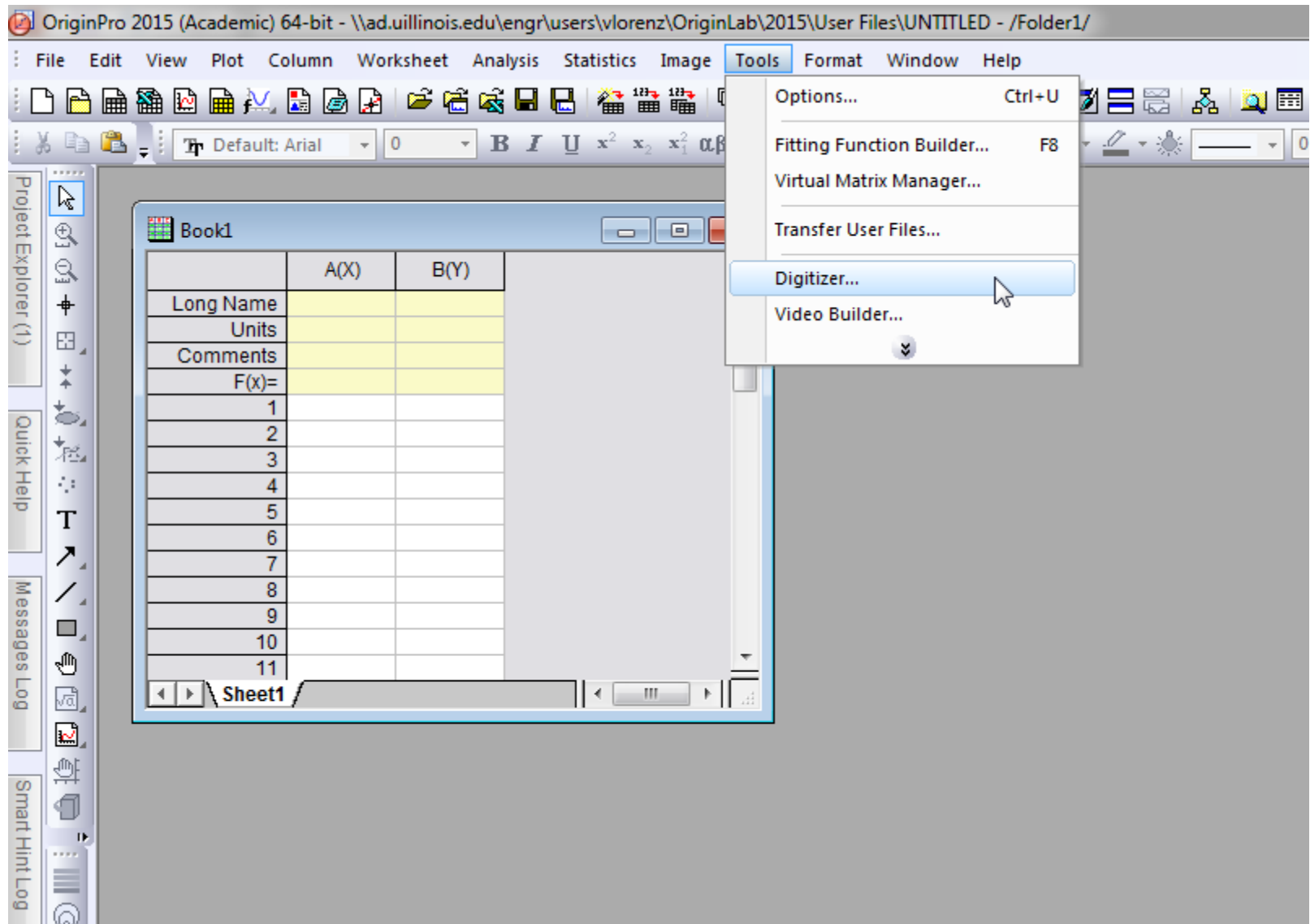
Layouts



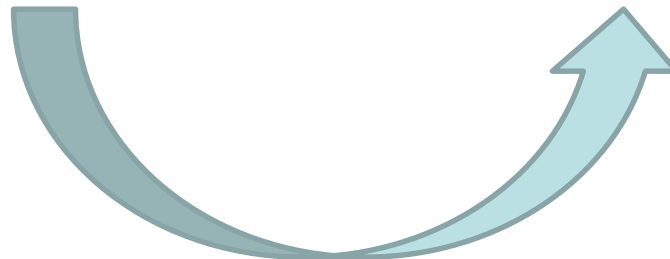
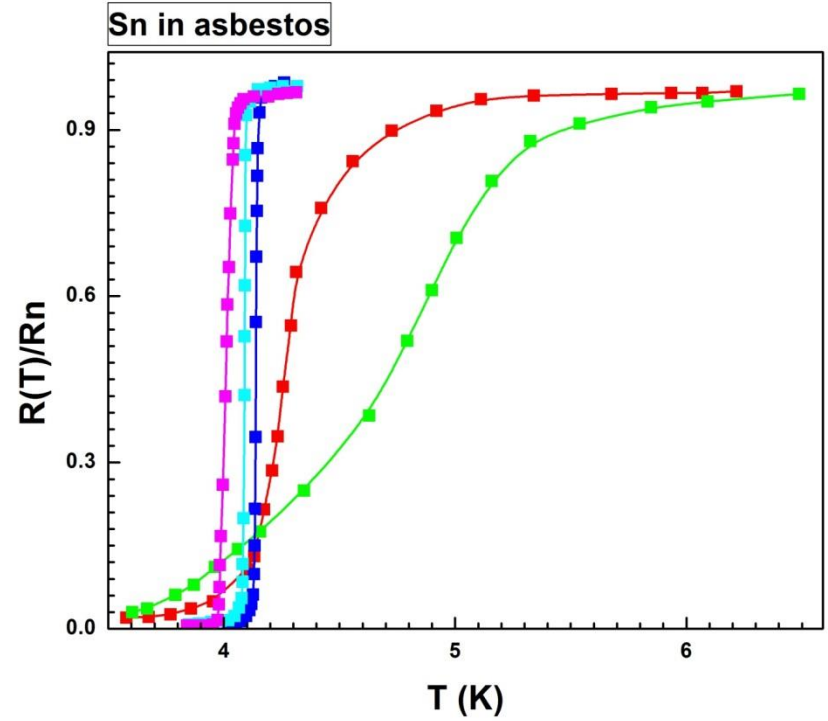
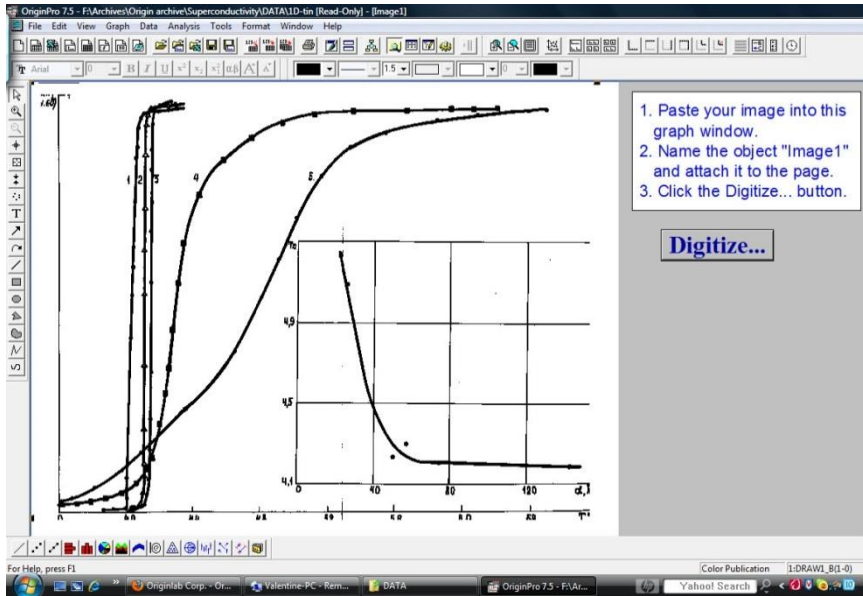
Setup for measurement of s/c properties



Custom tools



Using digitizer script



Origin at UIUC Webstore and OriginLab site.

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\$0.00
OriginLab, Inc.
Eligibility: UIC Faculty, UIC Staff, UIC Students, UIS Faculty, UIS Staff, UIS Faculty and Staff and UIUC Students.

<https://webstore.illinois.edu>

www.originlab.com

OriginLab Data Analysis and Graphing Software

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What's New!
★ Origin 8.6 is Now Available! (11/15/2011)
★ Scientific Computing World review (7/1/2011)

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Origin Viewer Student Personal Use
Pricing & Purchase Government & GSA Pricing
License/Register Licensing Options
Online Help User Forums
Reviews File Exchange
Case Studies Wiki
Service Releases LabVIEW™ Connectivity

ORIGIN 8.6 DATA ANALYSIS GRAPHING PROGRAMMING

Origin is an easy-to-use data analysis and graphing software application used by over 100,000 scientists and engineers worldwide.
OriginPro offers all of the features of Origin plus extended analysis tools. **Compare Origin and OriginPro.**

Origin 8.6 (November 2011)
[Try Now](#) [Buy Now](#) [Watch Now](#)
[Graph Gallery](#) [New Features](#)

Project Browser: Analysis, Graphing, 3D Surface, Contour, Columns, Line and Link, Statistical, Worksheet, Vector, Worksheet

Project: 123_3D_A3D and Contour Statistical & Specialized Analysis Analysis - Graphing

For Help, press F1



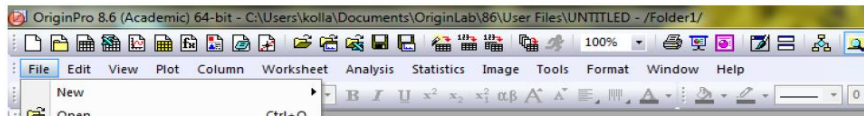
illinois.edu

Origin manuals



Working with Origin 8.6.

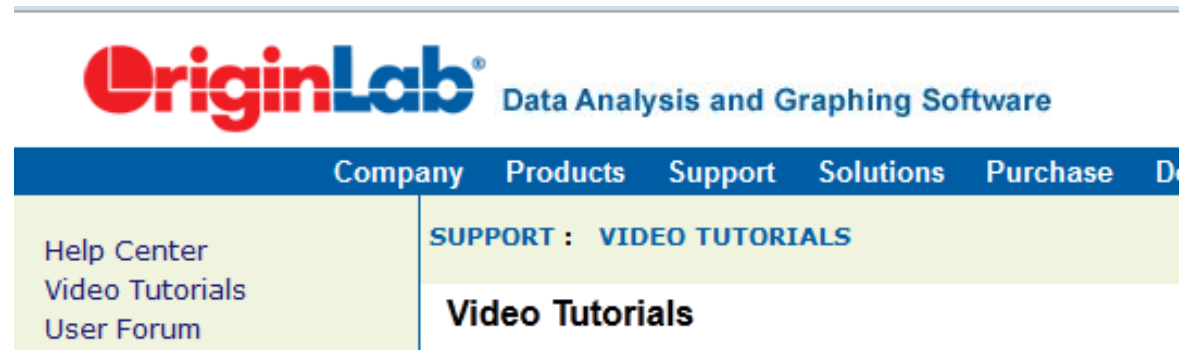
Step1. Importing data



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

Do not forget about Origin Help

Video Tutorials on the company website



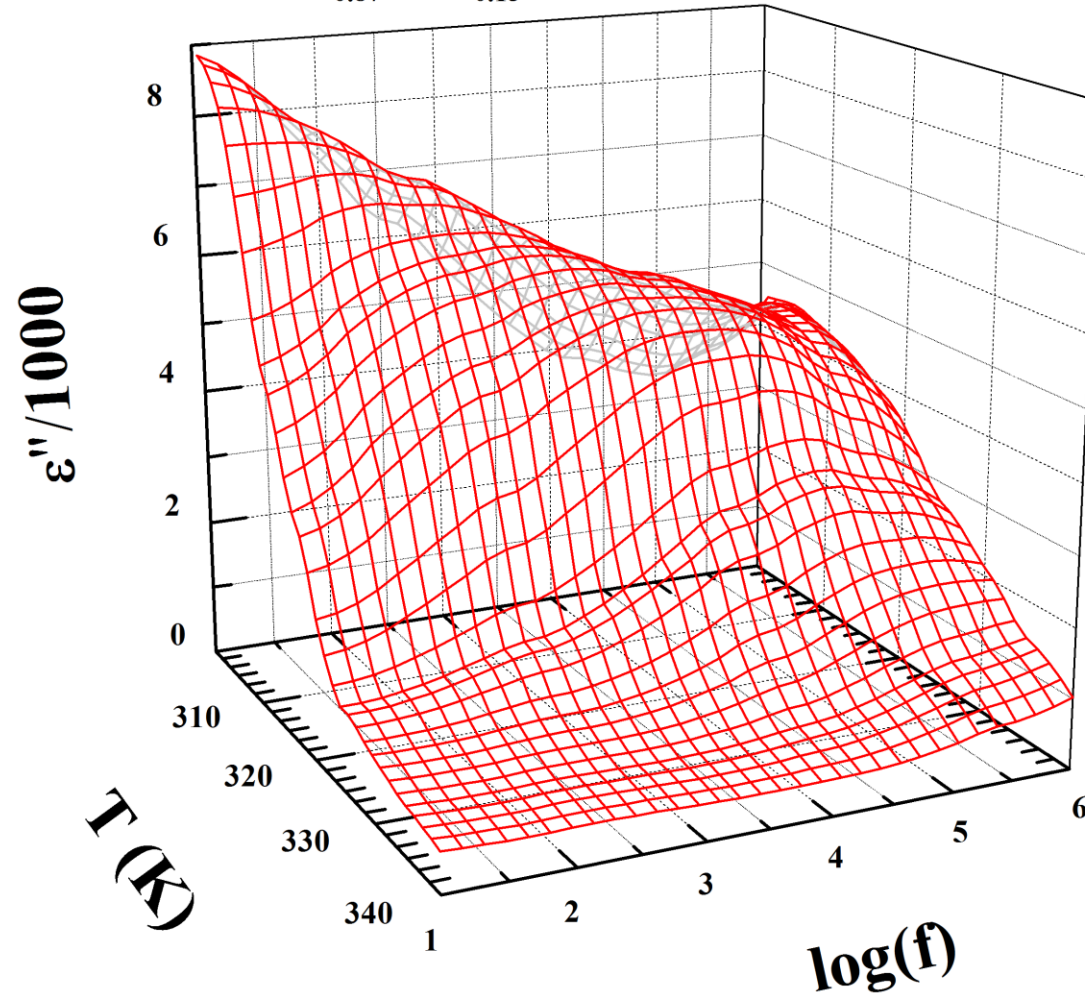
<http://www.originlab.com/index.aspx?go=SUPPORT/VideoTutorials>



Example Origin graphs

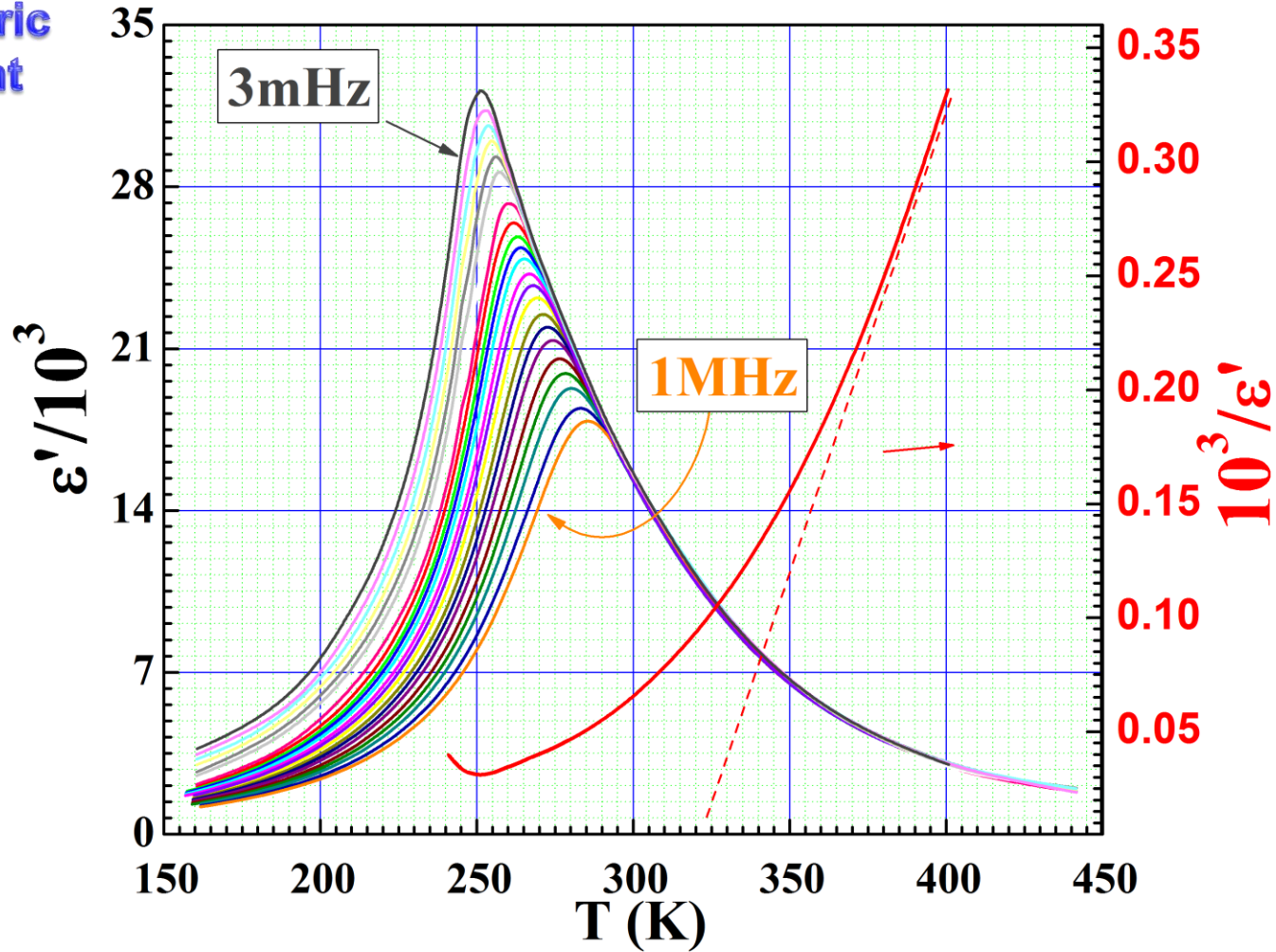
(PMN)_{0.87}(PT)_{0.13}, single crystal

Ferroelectric
Experiment



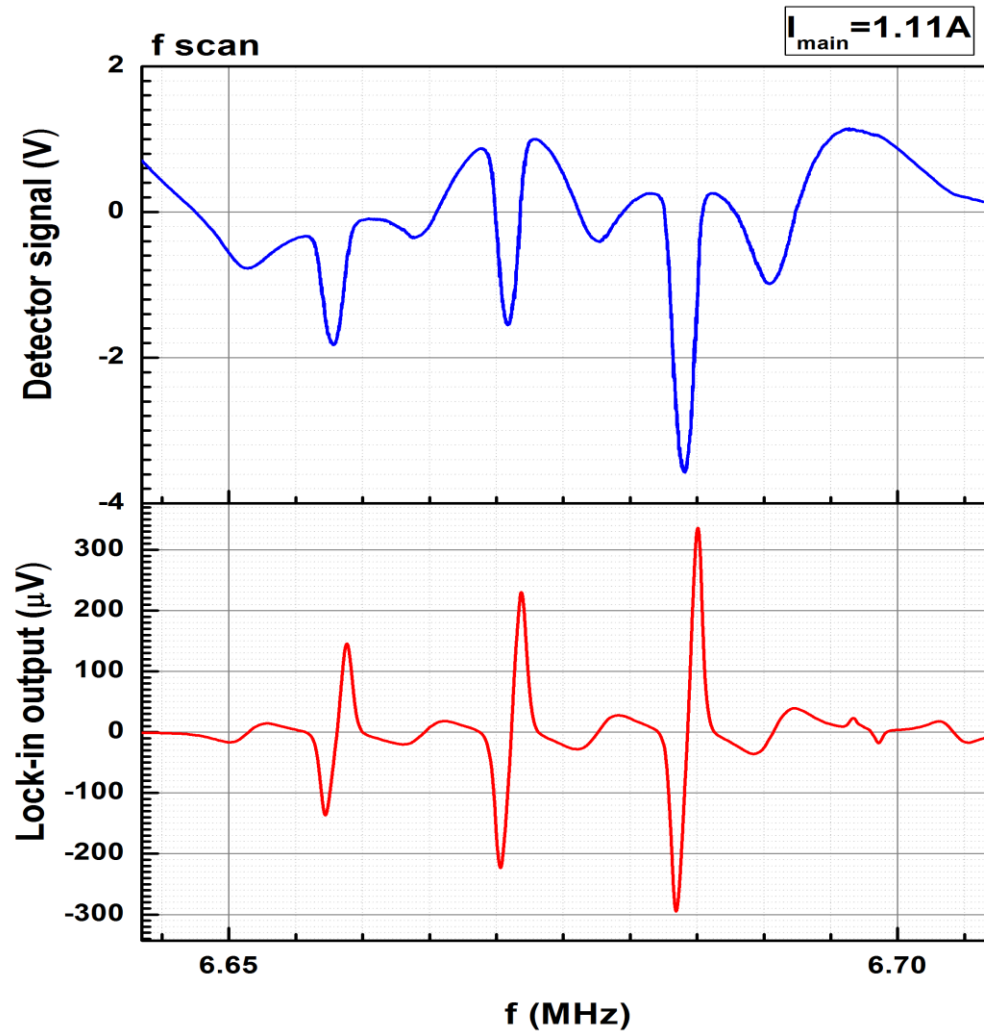
Example Origin graphs

Ferroelectric
Experiment



Example Origin graphs

Optical
pumping

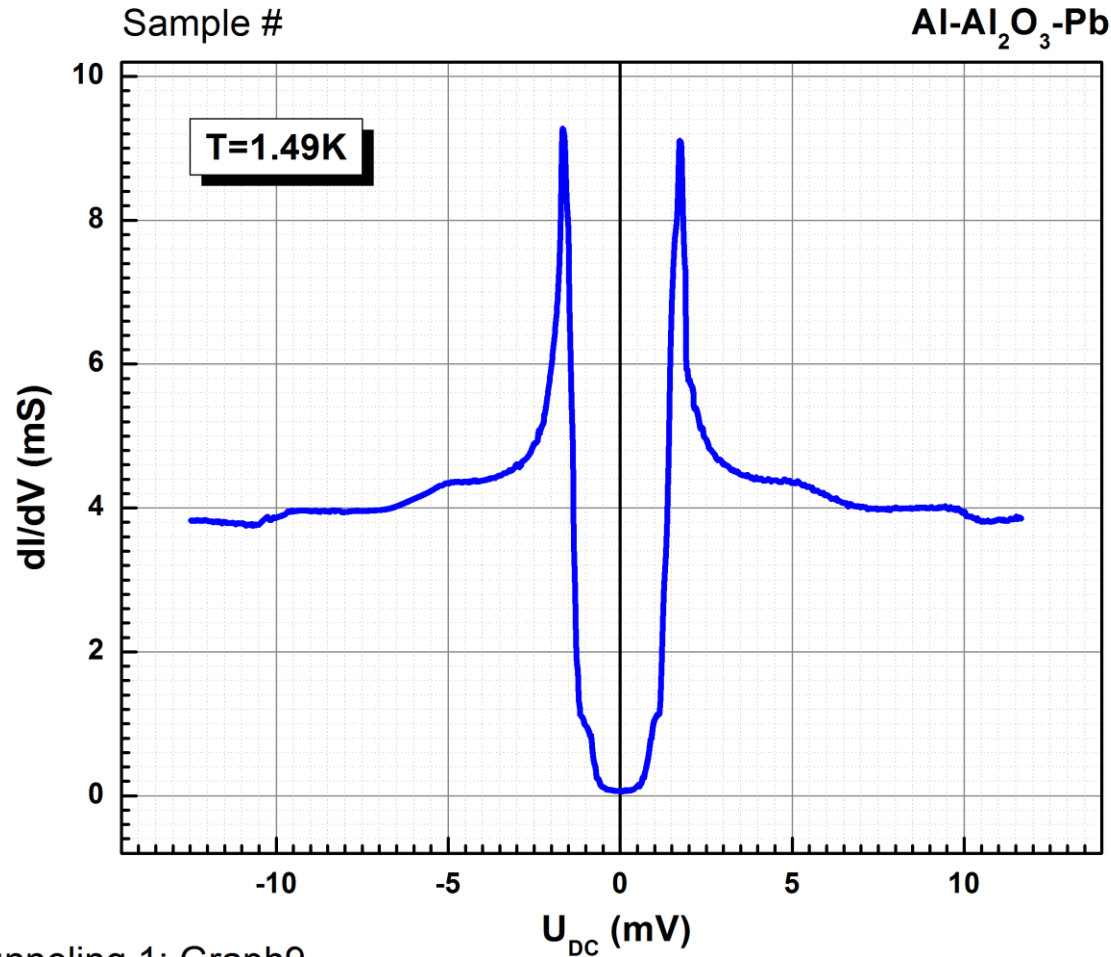


Mapping 0.5-2.5A from March 1st 2012: Graph7



Example Origin graphs

Tunneling
Experiment



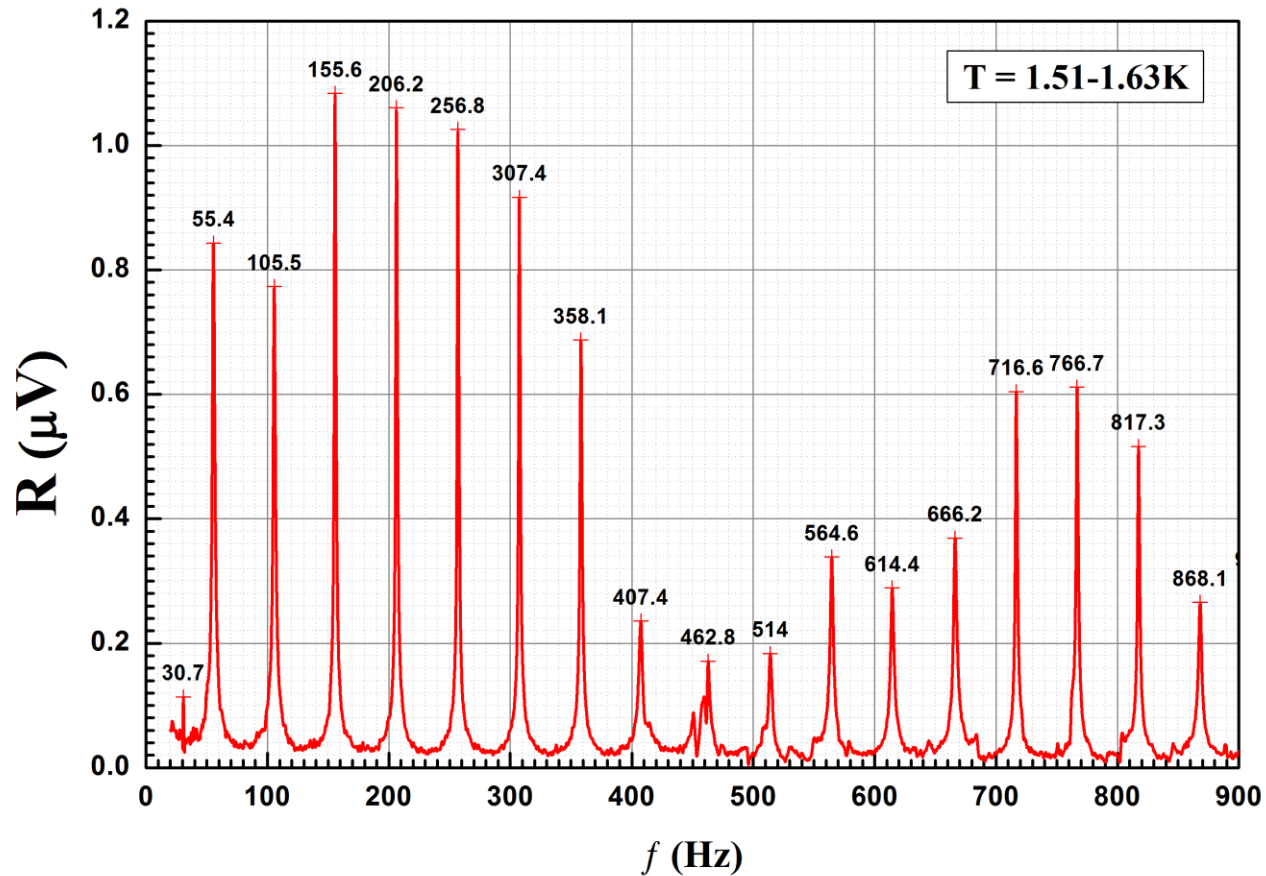
Tunneling 1: Graph9

Sample n2 run8 zoom temp 1.55K



Example Origin graphs

Second
sound



Example Origin graphs

Magnet mapping

