OriginLab Scientific Graphing and Analysis Software

Origin is on all Physics 403 computers. What it can do:

1. Graphical presentation of data

2. Data analysis

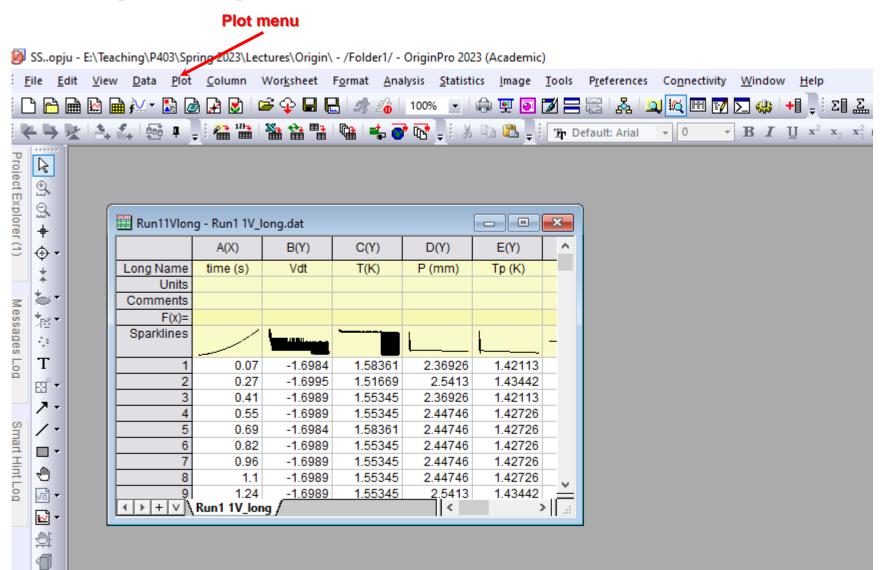
3. Preparation of publication-quality figures

- Specially designed for <u>scientific</u> 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

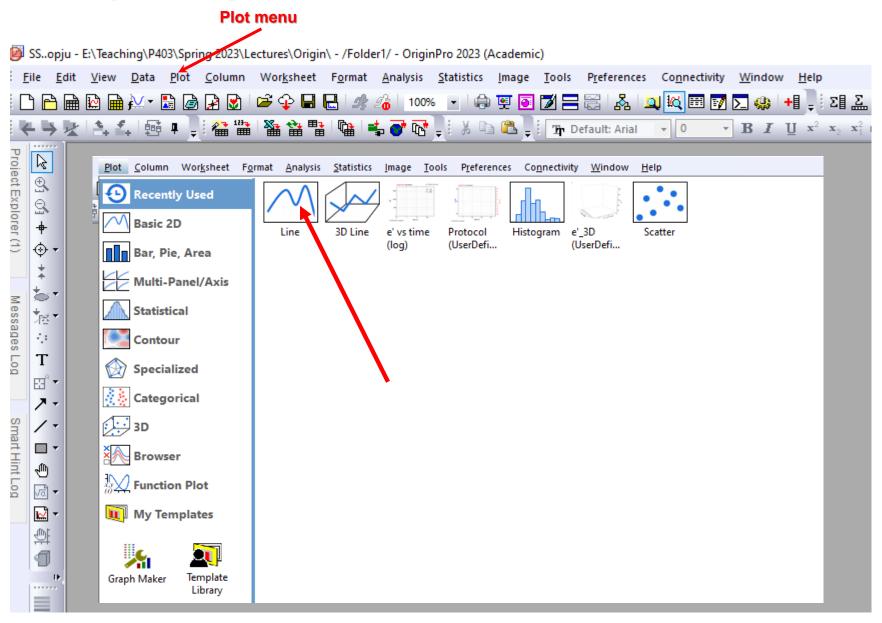
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Can drag and drop .dat or .txt files into empty spreadsheet Or import files



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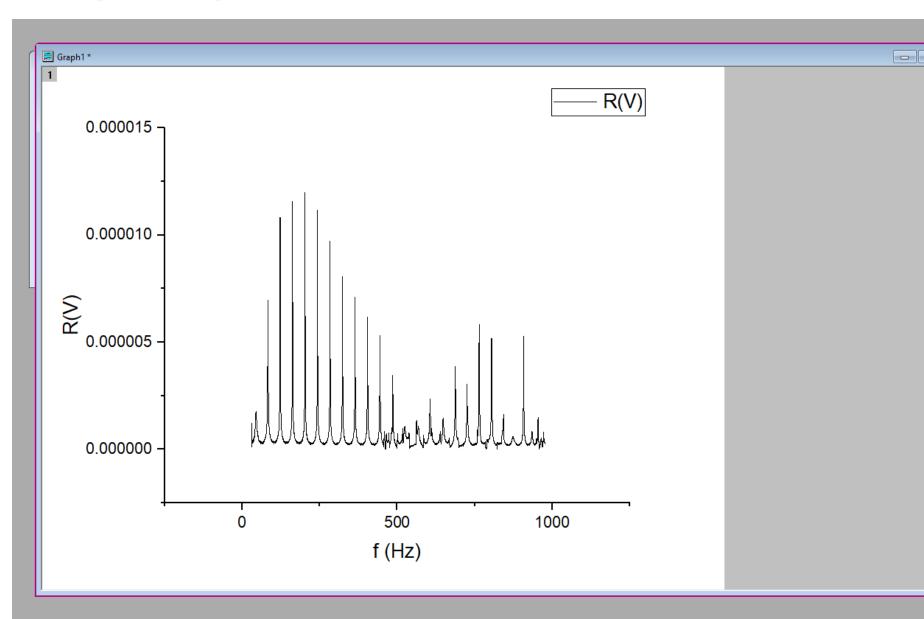
Plot menu

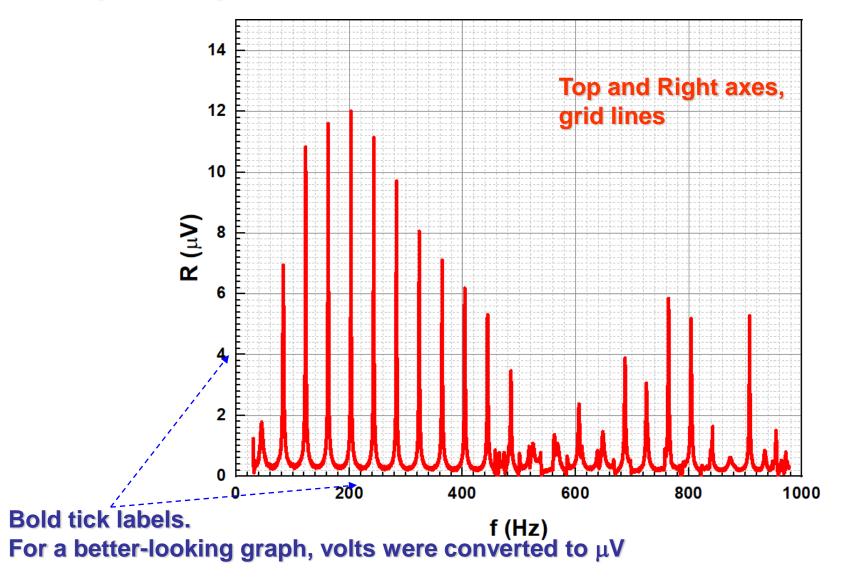
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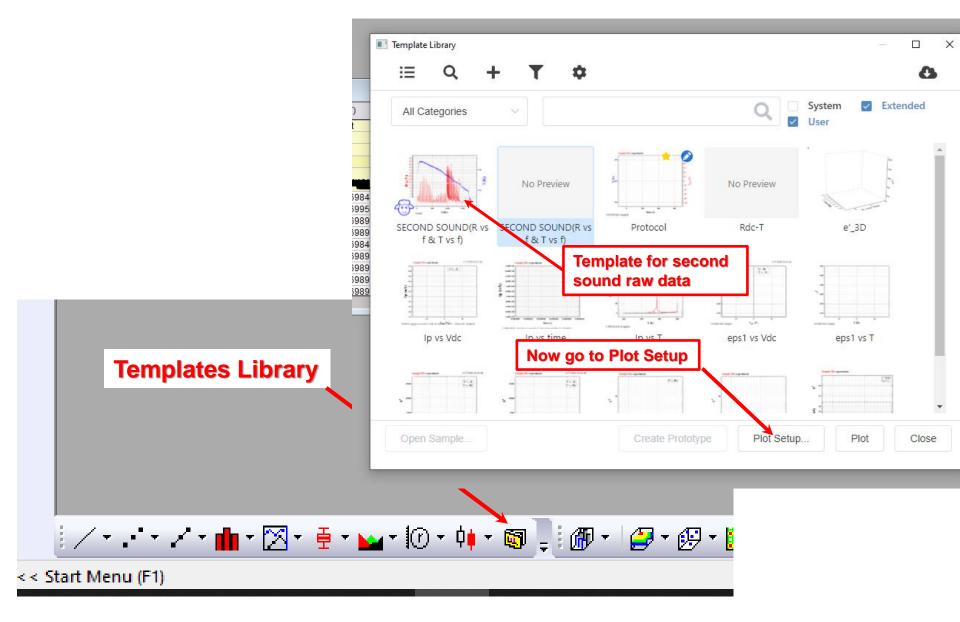
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Graph Maker Template Library

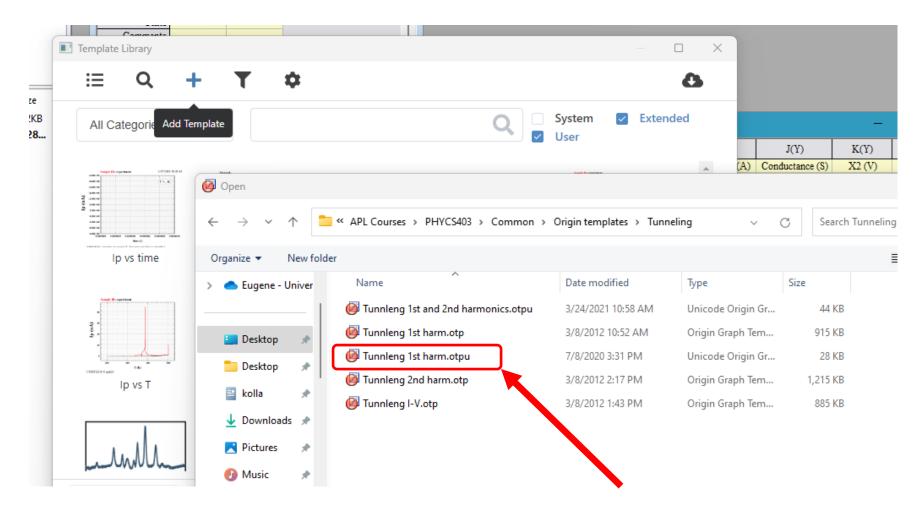




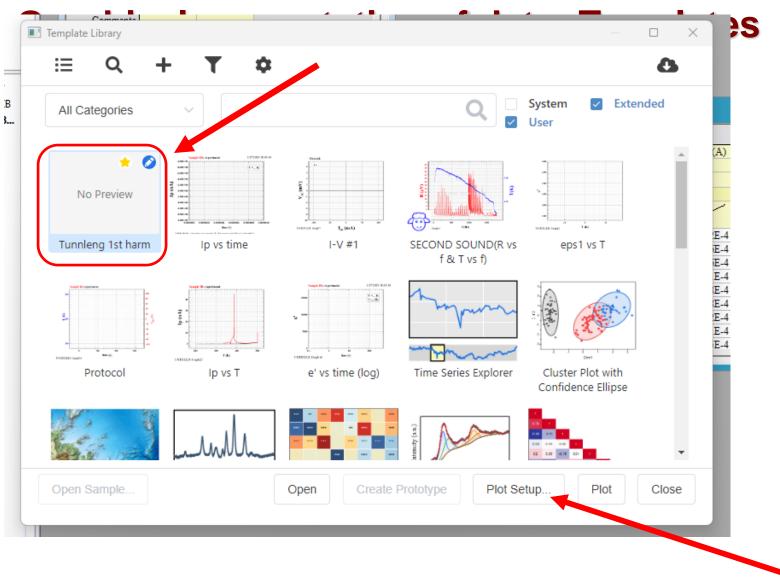
Graphical presentation of data: Templates



Graphical presentation of data: Templates



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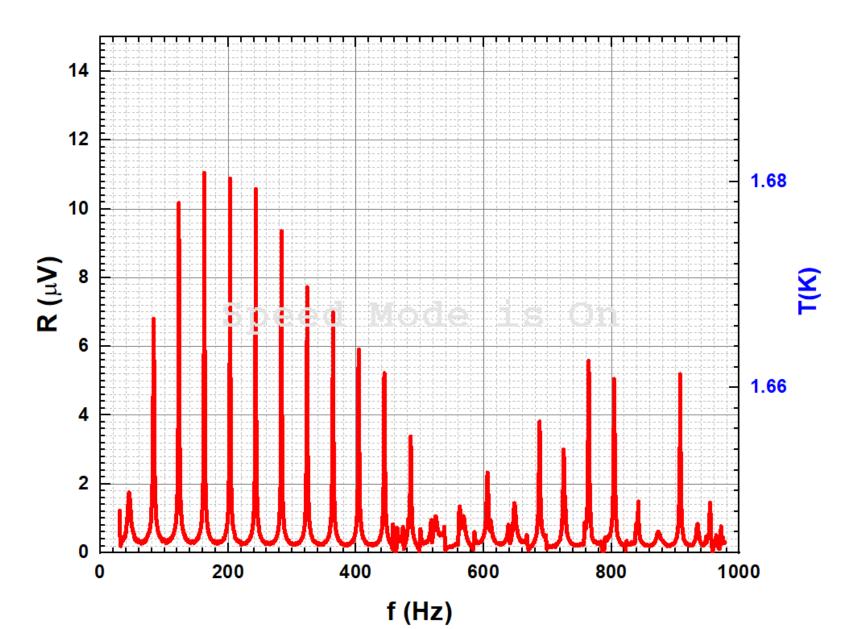


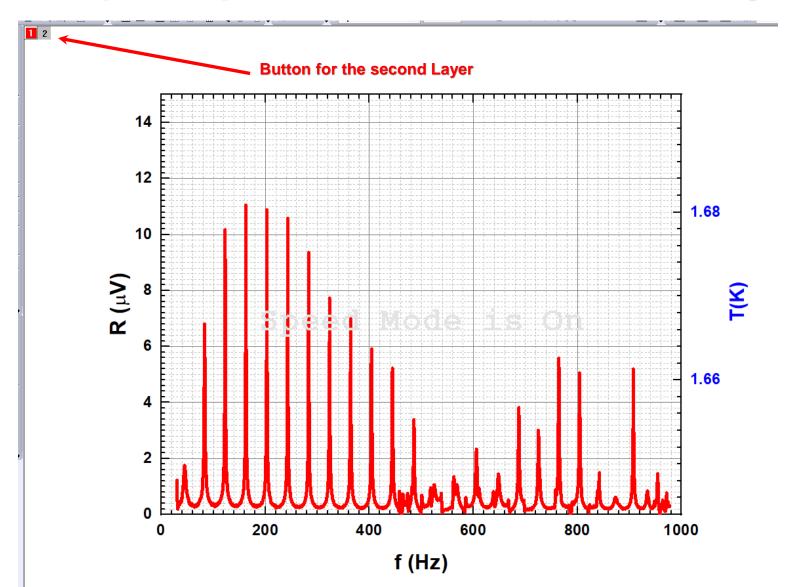
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Graphical presentation of data: Templates

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Graphical presentation of data: Templates



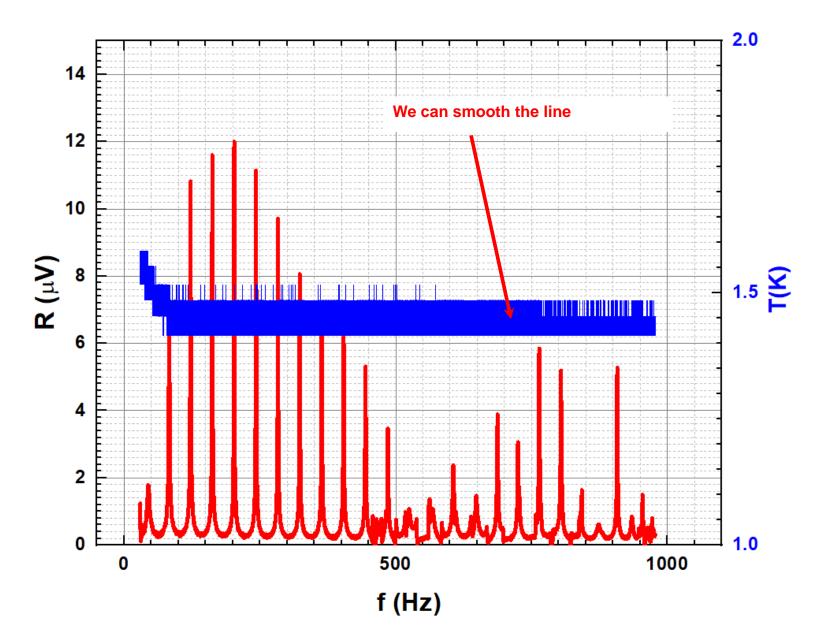


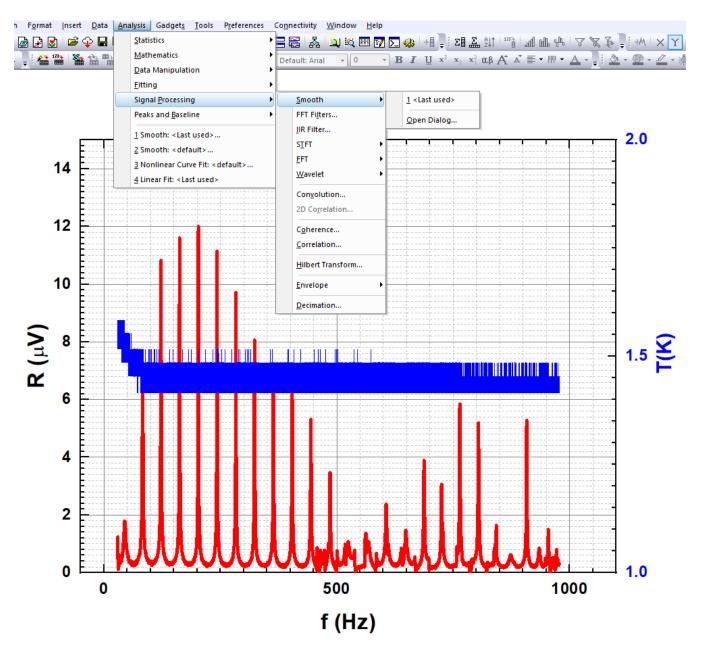
Button for the second Layer

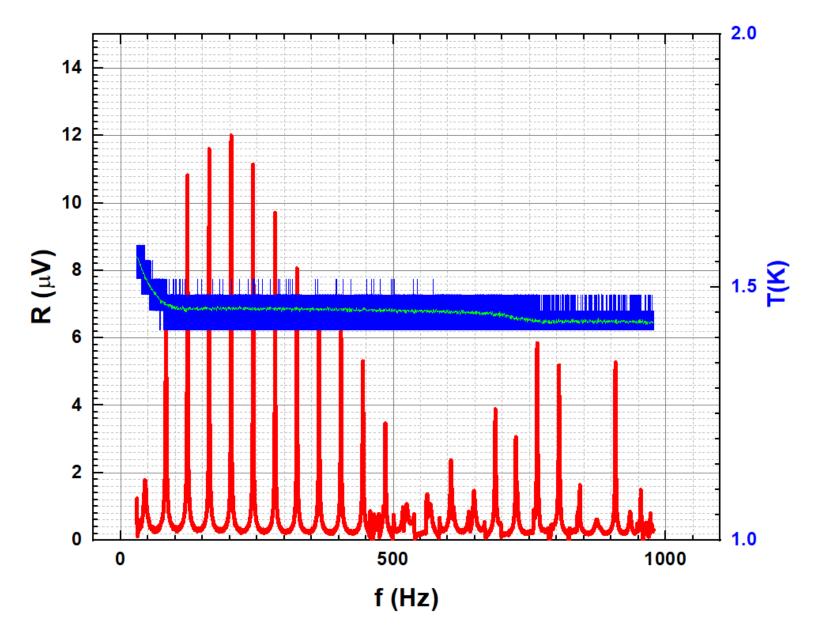
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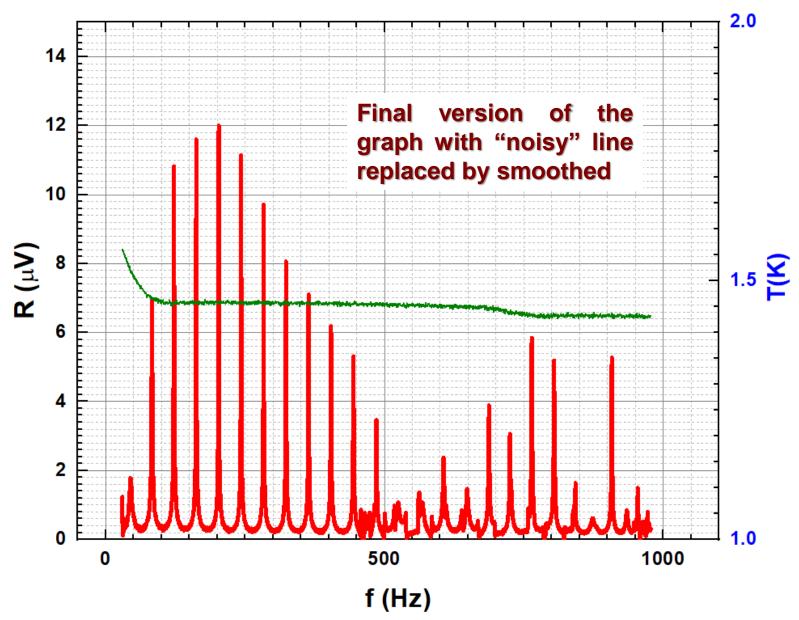
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Granhical presentation of data. Extra I aver

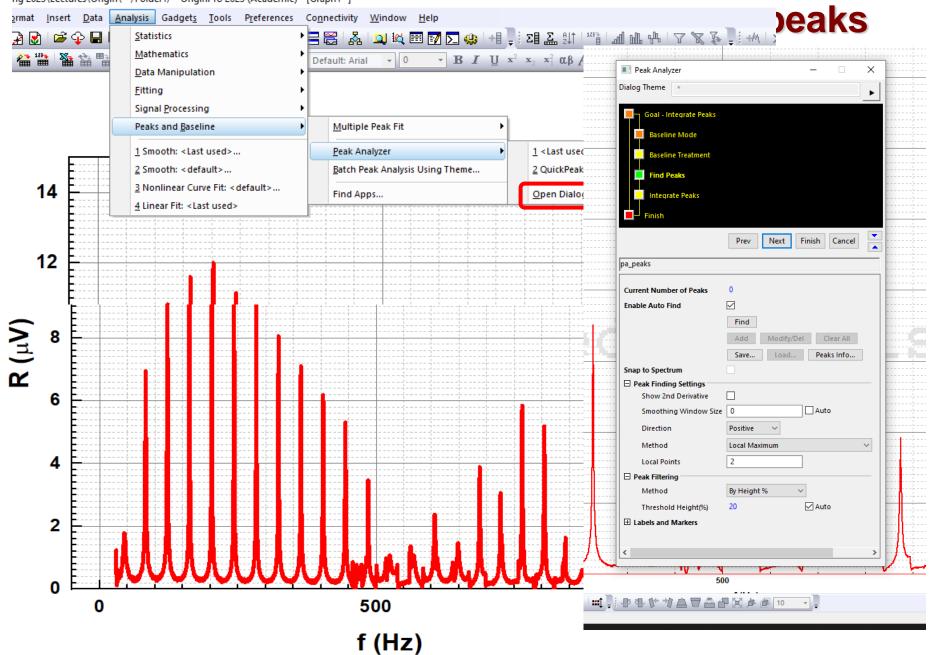




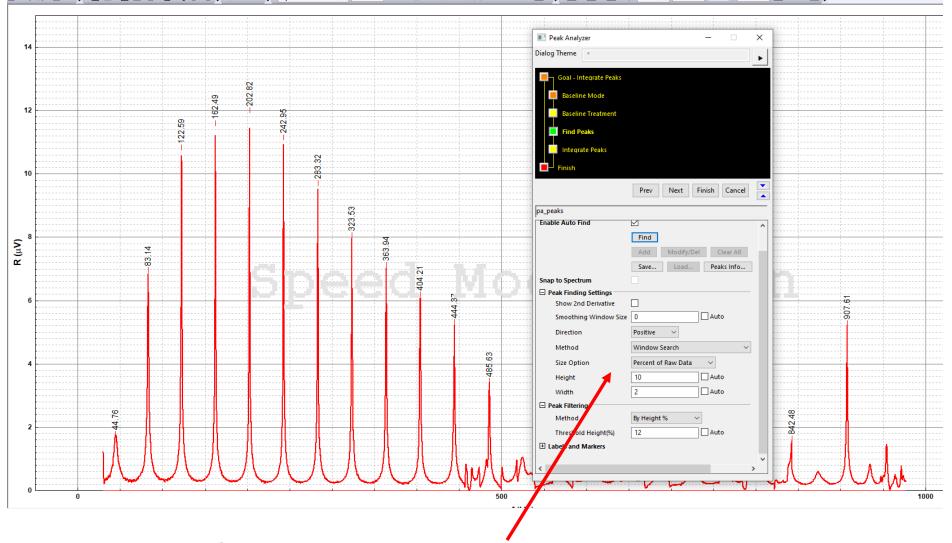




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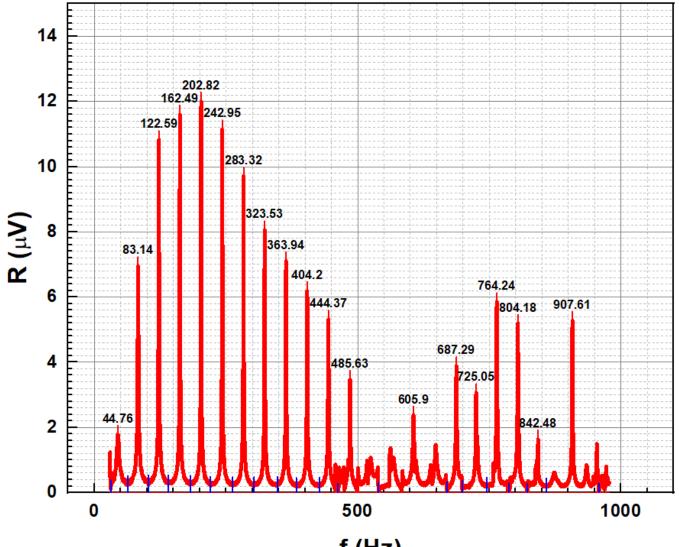


Graphical presentation of data: Finding peaks

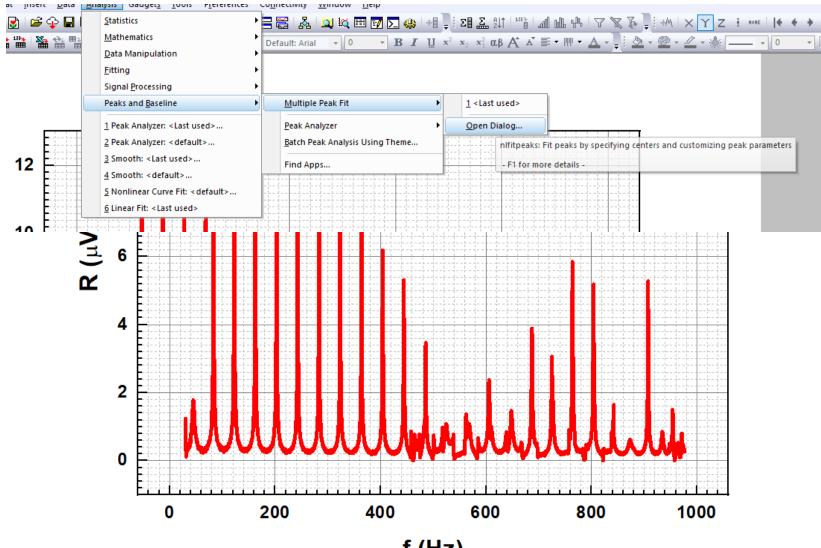


Choose the proper search parameters

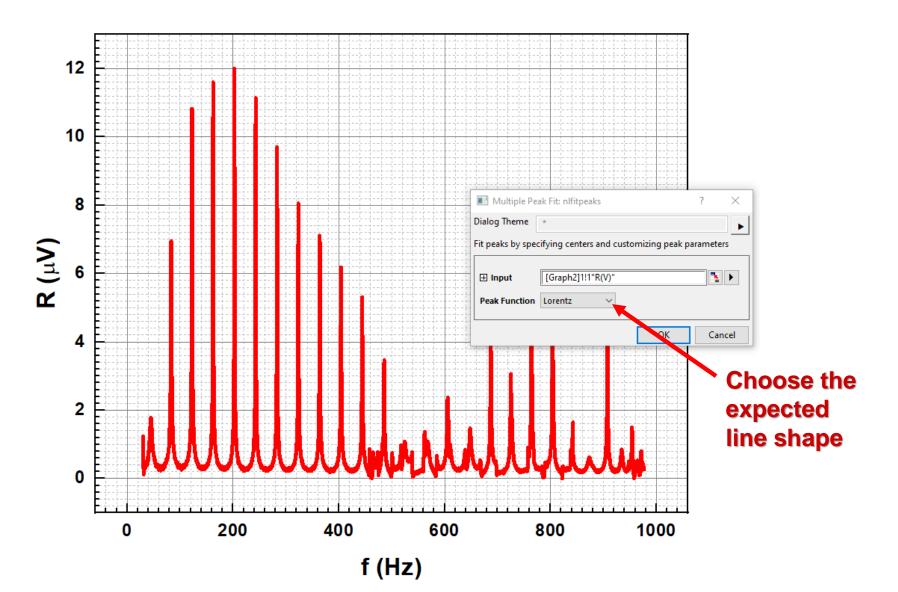
Graphical presentation of data: Finding peaks

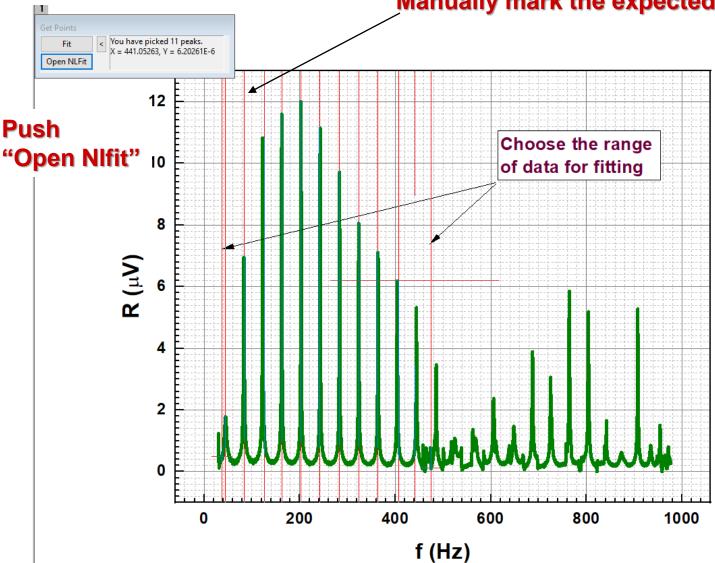


f (Hz)



f (Hz)

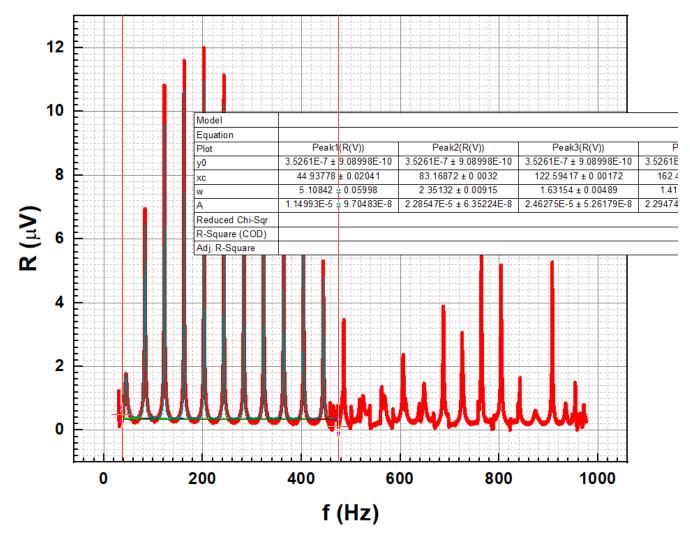




Manually mark the expected peak positions

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Recommendation: start first with "Single step iteration" and next if fitting goes in proper direction push "Fit until converged"



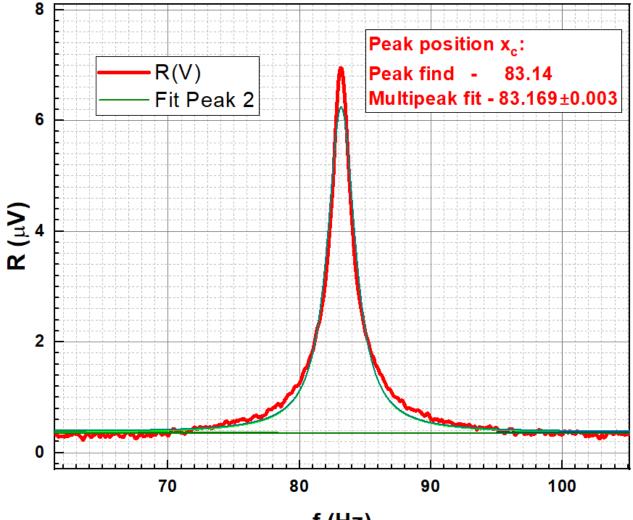
Finally, you will have the data plot with set of fitting lines plus the table with found parameters

All fitting results could be found in added layer to data worksheet

100 : Fit converged. Chi-Sgr tolerance value of 1E-9 was reached. Summary Ŧ y0 Α н Statistics XC w Value Standard Error Reduced Chi-Sgr Adj. R-Sguare Peak1(R(V)) 3.5261E-7 9.08998E-10 44,93778 0.02041 5.10842 0.05998 1.14993E-5 9.70483E-8 1.43306E-6 1.15019E-8 2.62144E-14 0.98415 9.08998E-10 83.16872 0.0032 2.35132 0.00915 2.28547E-5 6.35224E-8 6.18792E-6 1.68499E-8 Peak2(R(V)) 3.5261E-7 Peak3(R(V)) 3.5261E-7 9.08998E-10 122,59417 0.00172 1.63155 0.00489 2.46275E-5 5.2618E-8 9.60952E-6 2.02275E-8 4.90025E-8 2.16838E-8 Peak4(R(V)) 3.5261E-7 9.08998E-10 162,49202 0.0015 1.41975 0.00426 2.29474E-5 1.02897E-5 Peak5(R(V)) 3.5261E-7 9.08998E-10 202.81031 0.00139 1.30551 0.00395 2.17874E-5 4.69447E-8 1.06244E-5 2.26126E-8 Peak6(R(V)) 9.08998E-10 242.93645 1.32379 2.05619E-5 4.72812E-8 9.88834E-6 2.24559E-8 3.5261E-7 0.0015 0.00428 1.42423 4.90864E-8 2.16497E-8 Peak7(R(V)) 3.5261E-7 9.08998E-10 283.3134 0.0018 0.00513 1.91415E-5 8.55609E-6 3.5261E-7 323.52904 0.00231 1.60858 0.00659 1.79125E-5 5.22522E-8 2.03714E-8 Peak8(R(V)) 9.08998E-10 7.08916E-6 Peak9(R(V)) 3.5261E-7 9.08998E-10 363.9371 0.0027 1.70221 0.00769 1.67149E-5 5.37935E-8 6.25132E-6 1.98032E-8 Peak10(R(V)) 3.5261E-7 9.08998E-10 404.21923 0.0032 1.8129 0.00913 1.54766E-5 5.5566E-8 5.43479E-6 1.91892E-8 3.5261E-7 9.08998E-10 444.35606 0.00381 1.89097 0.01086 1.38639E-5 5.67808E-8 4.66745E-6 1.8789E-8 Peak11(R(V)) ANOVA -DF Sum of Squares F Value Prob>F Mean Square 33 Rearession 7.12026E-8 2.15765E-9 82307.90245 < 0.0001 43715 Residual 1.14596E-9 2.62144E-14 R(V) Uncorrected Total 43749 1.01914E-7 Corrected Total 43748 7.23485E-8 R(V): At the 0.05 level, the fitting function is significantly better than the function y=constant. Fitted Curve 🖃 R(V)↓ + V Run1 1V_long AnlfitpeaksCurve1 Anlfitpeaks2 AnlfitpeaksCurve2 ||< 📑 🗿 + 🛛 🚑 + 😥 + 🗱 + 🛗 + 💽 📑 😫 🞇 X = 277.281465, Y(/1e-06) = 13.5085131 ひちかが山口日日の夕何 10

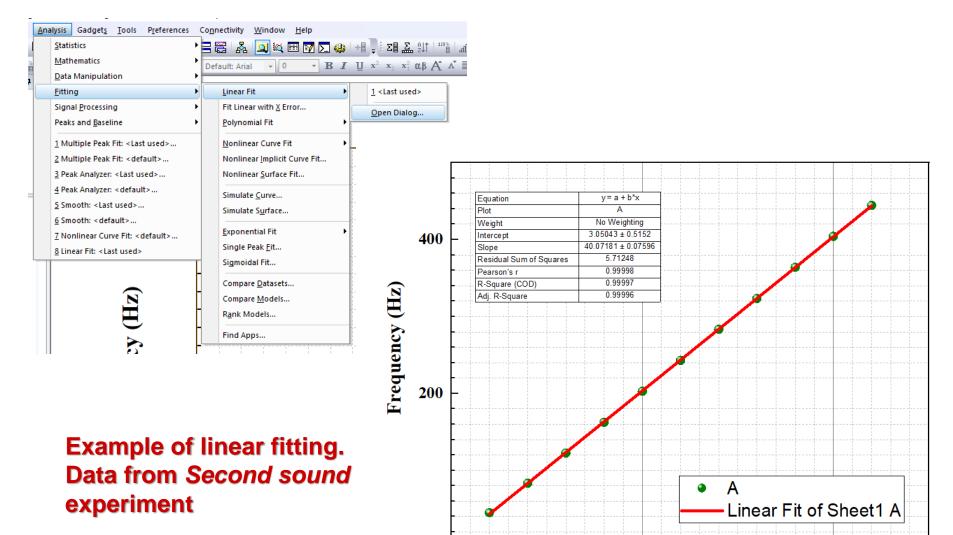
This layer contains all fitting results

Comparing the results obtained by using "Peak find" and "Multipeak fit" procedures



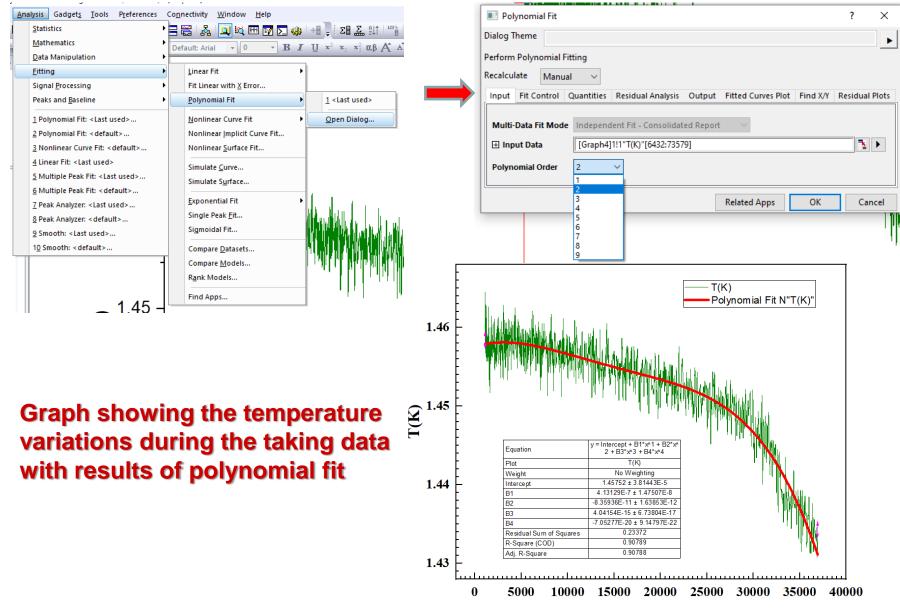
f (Hz)

Graphical presentation of data: Fit Linear



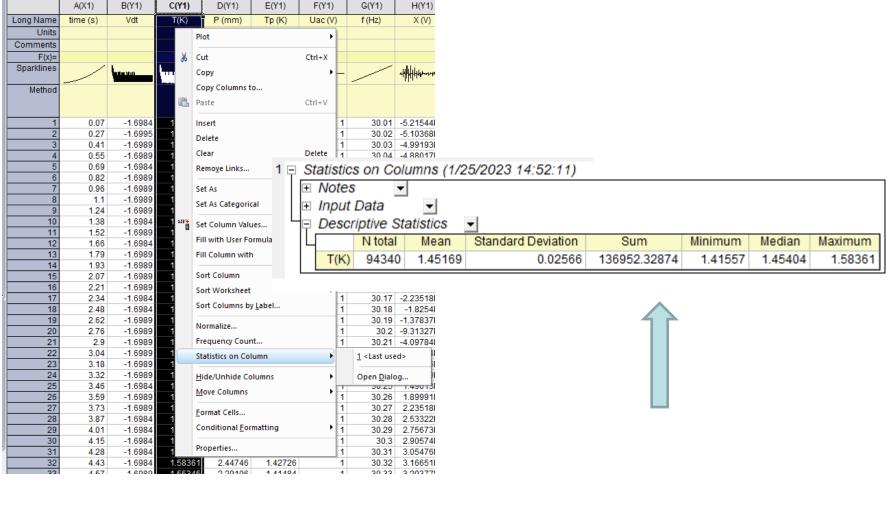
Resonance peack number

Graphical presentation of data: Fit Polynomial



time (s)

Working with data: Worksheets. Statistics on Column



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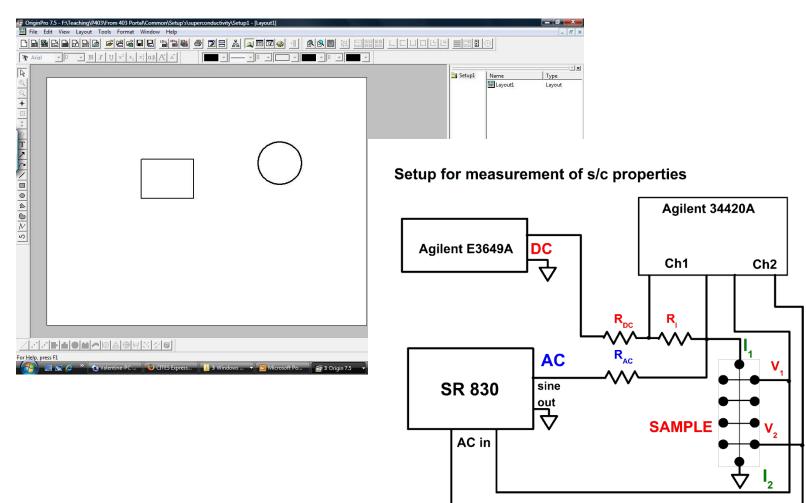
FitPolynomial3 DescStatsOnCols1 /

The results could find here

Working with data: Worksheets. "Set Column Values"

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11	10.297	1.571		Hide/Unhide Columns	•		7	8.437	-271.42831	15.1315	1.86029	5			-1.89758E-8	
12	10.71799	1.571				16	8		-271.42847 -271.42862	12.42062 13.82822	1.80303 1.83378	5	20.7		-1.76952E-8 -1.64147E-8	
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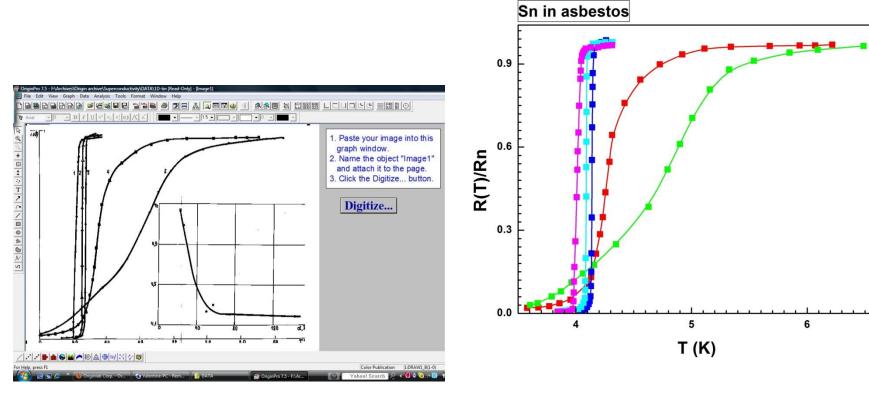




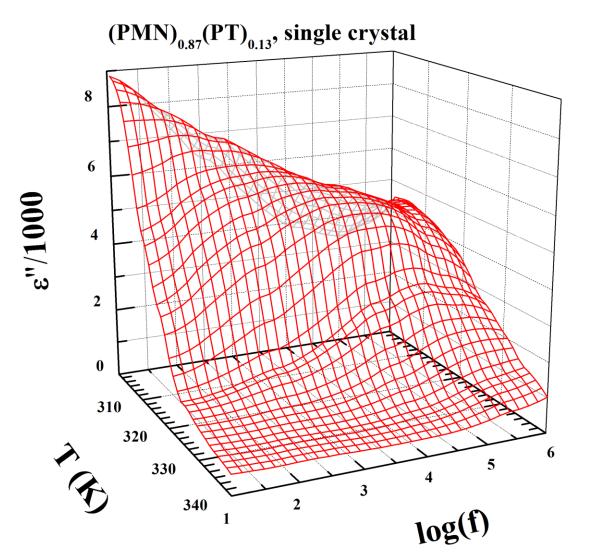
Custom tools

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Using digitizer script



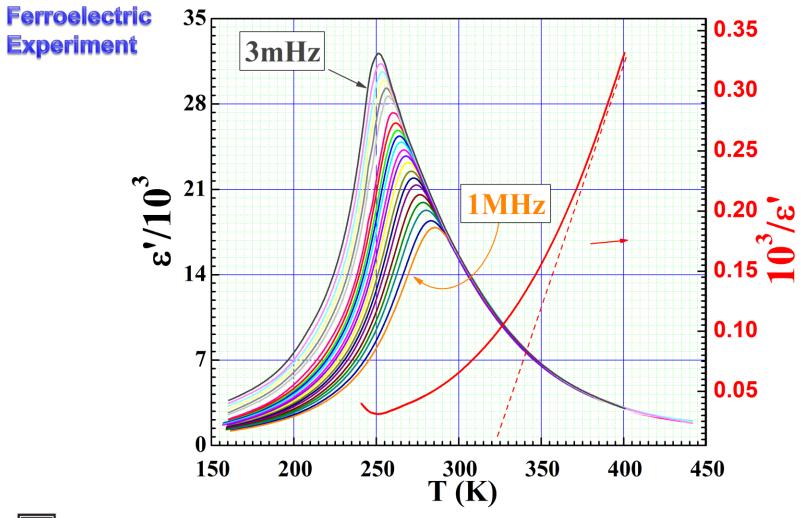




Ferroelectric Experiment



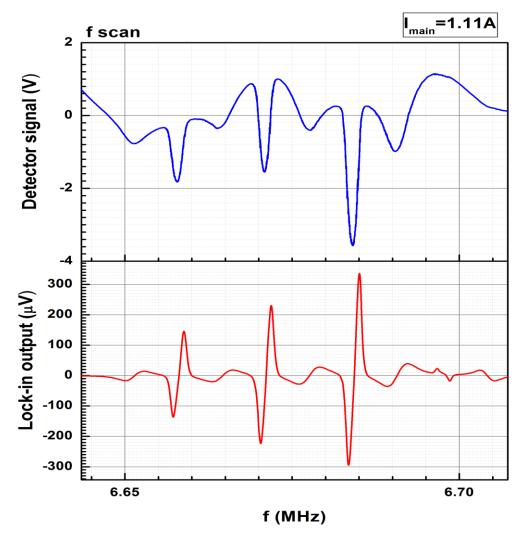
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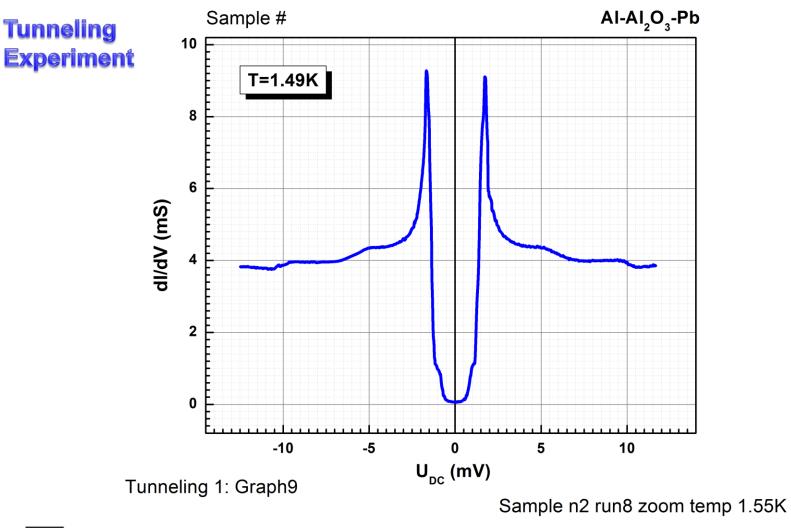
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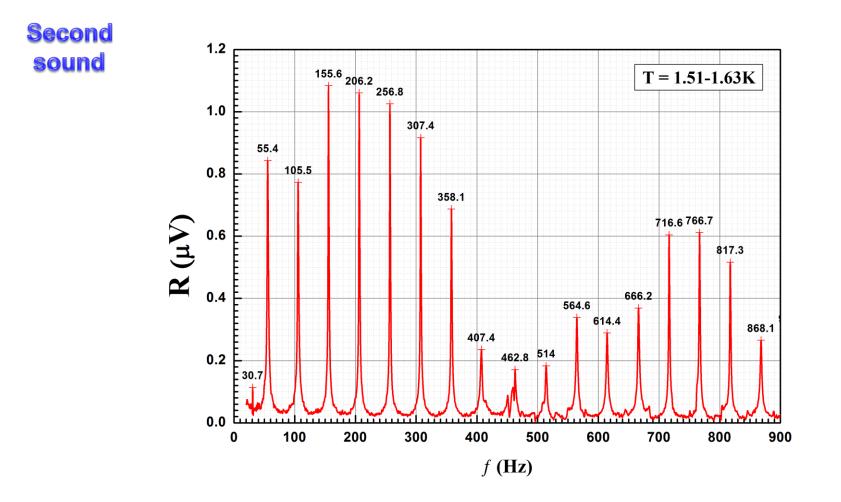




Mapping 0.5-2.5A from March 1st 2012: Graph7



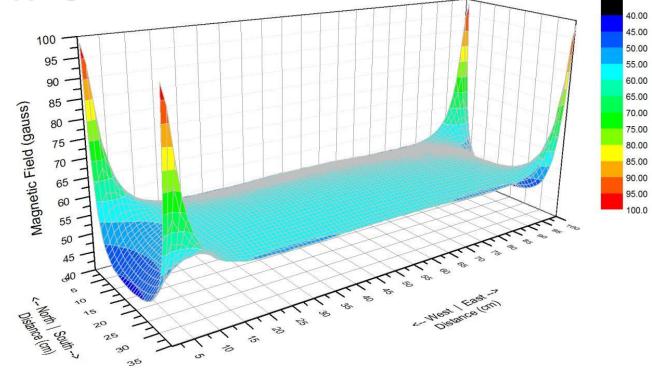






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Magnet mapping





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Origin at UIUC Webstore and OriginLab site.

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Running Origin remotely

Here is another way to run Origin without needing to install it on your own computer (e.g. if you have a Mac, which is not supported by Origin):

- 1. Connect to VPN
- 2. Install and run Citrix: <u>http://it.engineering.illinois.edu/ews/lab-</u> information/remote-connections/connecting-citrix
- 3. Click on "Apps" and then "Origin"
- 4. To open and save files, use your EWS folder at this address: "smb://ad.uillinois.edu/engr-ews/[Your netID]"



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Video Tutorials on the company website

Title	\$ Category	 Length 🔶	PlayNow 🔻	LastUpdated	Version 🔶	Audio 🔶	Youtube 🍦
Origin 2023 Highlights	General - Overviews	00:05:26	\bigcirc	11/1/2022	10.0	Y	You Tube
Introduction to Origin/OriginPro	General - Overviews	00:02:30	\bigcirc	6/9/2021	9.85	Y	You Tube -
Getting Starting with Graphing	General - Overviews	00:04:14	\bigcirc	10/18/2019	9.7	Y	You Tube
Bringing Data into Origin	General - Overviews	00:03:07	\bigcirc	10/18/2019	9.7	Y	You Tube
Analysis with Auto Recalculations	General - Overviews	00:02:28	\bigcirc	10/18/2019	9.7	Y	You Tube ~
Build Your Presentation in 60 Seconds	General - Overviews	00:01:22	\bigcirc	1/5/2018	9.5	Y	You Tube ~
Origin Learning Center	General - Overviews	00:02:26	\bigcirc	12/25/2017	9.5	Y	You Tube
Apps for Origin	General - Overviews	00:01:54	\bigcirc	12/14/2017	9.5	Y	You Tube
Origin vs OriginPro	General - Overviews	00:06:56	\bigcirc	6/14/2016	9.3	Y	You Tube ~

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



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