



Origin 2017

PRESENTED BY YUKI

Outlook

Origin Introduction

在这一节中,我们将初步了解和认识Origin的操作 界面,方便我们在后期的学习能快速掌握Origin的 各项功能。



Graphing(Advanced)

在这一节中,我们将学习更多关于绘图(比如批量 绘图)以及美化图形的技巧。

Support Resources

在这一节中,我们将分享如何获得学习Origin的各 类文档,视频资源,以及如何联系Origin的技术人 员获取帮助。



Curve Fitting

在这一节中,我们将学习如何进行线性和非线性拟合,以及自定义拟合函数。



Origin Introduction



Origin Central

快速上手的帮助工具



- Press F11
- Help: Origin Central
- 1. 查看数十种绘图和数据分析的例子
- 2. 快速打开最近创建或编辑的项目和图形。
- 3. 新建自定义的空白工作簿或矩阵簿
- 4. 浏览最受欢迎或者最近更新的Apps
- 5. 获取了解与学习Origin的视频和相关文档等

资料



Apps Gallery 扩展功能



Add Apps

- Tools : Apps on File Exchange
- Origin Central: Apps
- 1. 自定义地扩展Origin的绘图和分析功能
- 2. 可快速安装,下载App的OPX文件后直接拖
 - 入Origin即可完成安装。
- 3. App右上角出现小红点时即可右键选择

Update进行更新。

4. 卸载时只需右键选择Uninstall即可。



Digitizer 图像数据转化工具



1. Import Image

点击Digitize Image 按钮并选择所需的图片

2. Edit Axes

利用Rotate按钮和Edit Axes按钮为导入的图片 设置坐标轴

3. Capture Data Points

可选择Manually Pick Data Points按钮或其余4 个自动提取按钮来采集图形的数据点



Graphing (Advanced)



Batch Plotting

批量绘图

Book1P - TRIAL 1 - 0 % A(X) B(Y) C(Y) D(Y) . Long Name Time Book2Q - TRIAL 2 - - X Units (sec) Comments 315-125-0 D(Y) A(X) B(Y) C(Y) .dat Long Name Time Delta Temperature Magnetic Field Position Sparklines Units (sec) (K) (Oe) S21-235-07 224 225 0 Comments Version 2.1 .dat Book3P - TRIAL 3 No. of points 1000 Sparklines Sample 3CO mille A(X) B(Y) C(Y) D(Y) Measured o 12/01/200 Long Name Delta Temperature Magnetic Field Position Version 2.1 Time Time: 3:20:39/ No. of points 700 Units (sec) (Oe) (mm) (K) Run Type: **Frial Run** S32-014-04.dat S32-014-04.dat S32-014-04 Sample YBCO mille Comments S32-014-04 SampleID S15 Measured o 12/15/200 .dat BatchNo 125 03:00:39 P Time: Sparklines Graph1P - TRIAL 3 RunNo 03 Run Type: Trial Run Show Script Panel 3.5 SampleID S21 Version 3.5 Sample = YBCO milled-square M 11 0 1 850 850 BatchNo 235 No. of points Run Type: = Trial Run 3 Save As.. 12 0.13 milled-sqlYBCO milled-s RunNo 07 Sample 0 Trial Rui 13 0.1 Measured o 12/03/2004 12/03/200 0.01 Hide 14 0.1 0.0 Time: 04:20:04 AM 04:20:04 / Trial Run 1 Trial Run 0.0 Run Type: Trial Run 3 Copy Page Ctrl+J 18 0.0 SampleID S32 S32 Copy Graph as Picture 014 014 Trial Run 2 BatchNo 150 Export Graphs... Ctrl+G RunNo 04 04 0.02 Send Graphs to PowerPoint.. 120 0.03 Ctrl+Shift+J View Full Screen 0.04 🖨 Print.. Ctrl+P Trial Run 3 (00) Add Shortcut to Favorites Go to Original Folder 133 Duplicate N a 120 Duplicate (Batch Plotting) 📝 Refresh F5 Save Template Save Template As... etta . Alt+Enter Properties.. ō Time (sec)

1. Custom Graph

自定义图形图层,坐标,题注,标注等。

2. Duplicate

在图形标题栏右键选择Duplicate (Batch Plotting): Duplicate with New Books/ New Sheets/ New Columns, 然后选择需 要批量绘图的工作簿/工作表/列



Graph Template 绘图模板







自定义图形图层,坐标,题注,标注等。

2. Save Template

在图形标题栏右键选择Save Template As, 或 者在菜单栏中选择File: Sava Template As...

3. Plot New Data

选择新数据,在菜单栏中选择**Plot: Template:** User: My Template



Copy Format 复制格式

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Crank Angle



1. Copy Format

在图形空白处右键选择Copy Format (或者是 在菜单栏选择Edit:CopyFormat),从而选择 需要复制的格式

2. Paste Format

于另一个图形上右键选择Paste Format (或者 是在菜单栏选择Edit:Paste Format)

Multidimensional Graph



- 1. The X data
- 2. The Y data
- 3. The Z data
- 4. Size Select one of the col(Column_Name) options
- Edge Color Select one of the col(Column_Name) options
- 6. Fill Color Select one of the col(Column_Name) options
- 7. Shape Select one of the col(Column_Name) options
- 8. Interior Select one of the col(Column_Name) options



Multiple Layers Graphs 多图层图形

1. Merge Graph Windows

菜单栏选择Graph: Merge Graph Windows, 然后在 Graphs box里添加需要合并的图形,并在 Arrange Settings里设置合并的样式。

2. Layer Management

在图层图标(图形左上角含数字的灰色方框)上点击右 键选择Layer Management





Customizing Graph Axes 自定义图形坐标



Curve Fitting



Data Masking

数据屏蔽

Mask Points

- 点击左侧工具栏中的Mask Data Points on
 Active Plot ^{***} 按钮 , 点击选择需要屏蔽的数 据点
- 2. 或者选择需要屏蔽的数据点,右键选择Mask





Batch Processing

批量操作

Analysis Report Export T275K - T275K.csv * -----File name: file date: 30 Analysis Report Export Analysis date File name: Analyst: Chri Nonlinear Curve Fit (Gauss) (10/13/2015 File date: 30 Analysis Report Export Analysis date: File name: T315K.cov **OriginLab** Notes • Analyst: Chri File date: 10/8/2015 12:23 Fitting Mo Analysis date: 10/9/2015 11:21:48 Input Data * Analyst: Chris Parameters Fitting Mc Statistics $y = y_0 + \frac{A}{w\sqrt{\pi/2}}e^{-2\frac{(x-x_0)^2}{\pi^2}}$ fitting Model: - 0 -Summarv w C V Search Results i... > ANOVA + ++ *.csv -0.09154 ± 0.26687 sigma 26.08323 . Fitted Curves Plot 1043 1428 + 0.03079 EWHO 61.42132 Organize • 👪 🔹 🔲 . Height 908.6266 Amplitude 52 16647 + 0.06522 59406 8905 + 71 11555 Red Chi-5g 26,58668 900 100000 a, 800 a, а, °a, 900 700 800 -2 600 Amplitude (m/v) T275K.csv T285K.csv T295K.csv T305K.csv 900 700 -Gauss Fit of Sheet1 B*Amplitude* a, 800 Ra, (vim) ebuild (R) aco -700 -ªa, а, ₹ 300 -(vim) epinale (vim) 500 400 Residual Plots 200 T315K.csv T325K.csv T335K.csv T345K.csv £ 300-100 Amplitude 200 0 ₹ 300 -100 800 200 0 800 900 950 1000 1050 1100 1150 1200 1250 1300 1350 1400 WWW.Origh OriginLab Corp Northempton 800 850 Wavelength (nm) www.Origi OriginLab Cor Northampton < > T275K FitNL1 (FitNLCurve1 / Bookmarks / < www.OriginLab.com OriginLab Corporation, One Roundhouse Plaza, Suite 303 hampton, MA 03060. USA

1. Create Analysis Template

- 1. 菜单栏选择 File: Save Workbook as
- **Analysis Template**

2. Batch Processing

- 1. 菜单栏选择 File: Batch Processing 或者
 - 在工具栏点击 Batch Processing 👒

button



Global Fit with Parameter Sharing

共享参数的全局拟合

1. Key Points

- 1. 用同一个拟合模型连续对多组数据进行拟合
- 2. 可选择是否共享拟合参数

2. Settings

- 1. 在NLFIt对话框中选择**Settings: Data** Selection: Input Data: Add Plot
- 2. Settings: Data Selection: Multi-Data Fit Mode: Global Fit
- 3. 勾选 Parameters: Share box



Quick Help: <u>http://www.originlab.com/doc/Quick-Help/Multi-Dataset-Fitting</u>



User-defined Fitting Function

自定义拟合函数

Fitting Function Builder - Name and Type	- MyFunction	×			
Hints	[
Function Type	Select or create a Category	User Defined V N	ew		
Select this option for simple fitting functions that have only one	Function Name	MyFunction			
dependent variable.	File Name(.FDF)	MyFunction.fdf			
The function body is limited to one expression, and you need to provide	Description				
only the right hand side of the equation.	Function Model	Fitting Function Organizer		_	□ ×
than Origin C.	Explicit	Origin Basic Functions	*		Save
Example:	Function Type	Implicit Convolution	Function Name	MyFunction	New Category
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		MyFunction (User)	NamingMethod = User-Defined NumberOfSignificantDigits = 0		, 🔋

1. Fitting Function Builder

按F8或者在菜单栏选择Tools: Fitting Function

Builder

2. Fitting Function Organizer

按F9或者在菜单栏选择Tools: Fitting Function

Organizer

Tutorial: http://www.originlab.com/doc/Origin-

Help/UserDef-FitFunc









- 按 F1快捷键
- Origin Blog: http://blog.originlab.com/
- Origin 中文视频教程: http://i.youku.com/origingz
- Origin 中文论坛: http://www.originlab.com/forum/forum.asp?FORUM_ID=28
- Origin软件用户QQ交流群: 210500924









- 1. What are the usages of Origin Central? Origin Central 有什么用途?
- 2. How do I add tick marks to an axis at specific values?如何在坐标轴的某个值上加一个特殊的tick label?
- 3. How do I know if an analysis result is not up to date? 如何知道数据分析结果是否与源数据同步?
- 4. How do I exclude some data from my analysis operation? 如何在数据分析过程中将某些数值除外?





Origin 2017 THANK YOU