

Física Experimental Básica: Tutorial SciDAVis



QA X

Instalação (Windows)
Gerar um gráfico
Ajuste Linear
Título e Eixos
Salvar o gráfico

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- Instalação (Windows) <u>Slide 3</u> <u>Slide 5</u>
- Gerar um gráfico...... <u>Slide 6</u> <u>Slide 8</u>
- Ajuste Linear..... Slide 9 Slide 14
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Através do link <u>https://sourceforge.net/projects/scidavis/</u> entre no campo de Download.





Baixe o arquivo instalador do SciDAVis.





Siga os procedimentos de instalação.

Back

Install

Cancel

| | 🛃 SciDAVis Setup | – 🗆 X | | 🙀 SciDAVis Setup | - 🗆 🗙 | | 🛃 SciDAVis Setup | - 🗆 X |
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| | | The Setup Wizard will install SdDAVis on your computer. Click Next to continue or Cancel to exit the Setup Wizard. | | GNU GENERAL PUBLIC LICEN Version 2, June 1991 Copyright (C) 1989, 1991 Free Software Foundation 51 Franklin Street, Fifth Floor, Boston, MA 02110-1 Everyone is permitted to copy and distribute verba of this license document, but changing it is not allo I accept the terms in the License Agreement Print Back | ISE LINC. ISOI, USA tim copies wed. | | Install ScDAVis to: C:\Program Files\ScDAVis\ Change | Back Next Cancel |
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Finish



Abra o aplicativo da SciDAVis e insira os dados do experimento para gerar o gráfico.

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Para gerar o gráfico clique com o botão direito do mouse na coluna Y e selecione a opção Plot → Scatter.

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| (| Table 1 | | | | | D | | | | | | | | | | | | |
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| | 1 2 | 9,8 | Plot | • / | / Line | - 11 | | | | | | | | | | | | |
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| | 4 5 | 25,1 | Fill Selection with | • | Special Line/Symbol | • | | | | | | | | | | | | |
| | 5 6 | 30,4 | Insert Empty Columns | | Vertical Bars | | | | | | | | | | | | | |
| | 6 7 | 34,1 | Remo <u>v</u> e Columns | | Horizontal Bars | - 81 | | | | | | | | | | | | |
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O gráfico surgirá na tela como mostrado abaixo.





Para realizar o ajuste linear do gráfico, selecione a opção Analysis → Quick Fit → Fit Linear.





Surgirá na tela uma caixa de texto com informações sobre o termo independente B (y-intercept) e a inclinação A (slope) e suas respectivas incertezas.





Para colocar as informações do ajuste no gráfico, vá a opção Graph → Add Text.





Selecione a opção On Active Layer.

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Selecione onde deseja colocar o texto no gráfico e digite o resultado do ajuste

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| Results Log [15/07/2020 15:41 Linear Regression fit of datase Y standard errors: Unknown From x = 2 to x = 9 B (y-intercept) = -0,1559523 A (slope) = 4,9988095238095 | Plot: "Graph1"] et: Table1_2, using function: 1095238 +/- 0,43749608571 2 +/- 0,0734277118925254 | : A*x+B 18371 | | Text options | | ? × | | | |
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O texto surgirá no gráfico ajustado. Para alterar o título e os eixos veja slides 23-





O SciDAVis também permite ajustes não lineares, por exemplo o exponencial

crescente.

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Para realizar o ajuste exponencial crescente do gráfico, selecione a opção Analysis → Quick Fit → Fit Exponential Growth.



Selecione a opção fit, para fazer o ajuste do gráfico

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Surgirá na tela uma caixa de texto com informações sobre os elementos da regressão e suas respectivas incertezas.

| 비법 | L 🖻 🗟 🛗 | | Q 🖽 🖯 | 5 C | χ (ρ (| | ۱. ۲. ۲. ۲. ۲. ۲. ۲. ۲. ۲. ۲. ۲. ۲. ۲. ۲. | | 樹中 | + + + | - Z., 📠 I | | a 🛨 💉 | | ~ ~ . | E DA TH | 1 48 |
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| F10/07/2020 | 0 12:29 | Plot: "Crach 1"] | | | | | | | | | | | | | | | |
| Exponential | l growth fit of datas | et: Table1_2, using function: | y0+A*exp(x) | /t) | | | | | | | | | | | | | |
| Y standard e | errors: Unknown | loorithm with tolerance = 0.0 | 001 | | | | | | | | | | | | | | |
| From $x = -6$ | 5 to x = 2 | igona in what tolerance = 0,0 | 001 | | | | | | | | | | | | | | |
| A (amplitude t (lifetime) = | e) = 1,0787898410 = 1.8034970993240 | 876 +/-0,030052483408546 | 7 | | | | | | | | | | | | | | |
| y0 (offset) | = 0,970033888091 | 39 +/- 0,0222738676209441 | | | | | | | | | | | | | | | |
| Chi^2 = 0.0 | 0017032933405270 | 13 | | | | | | | | | | | | | | | |
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| | Table 1 | | | | | | 23 | 1 | | | | | | | | | |
| | Table1 | ₽ 2[Y] | ^ | Description | Type Fo | rmula | 8 | 1 | - | | 1 | Title | | | | | |
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| 1 2 3 4 5 6 7 8 9 | ■ Table 1 1 1 1 1 1 1 -6 -3 -1 0 1 2 | ₽ 2[Y] 1,02 1,17 1,58 2,03 2,88 4,23 | | Description Type: Format: Decimal Digits: Selected colub Double precis floating point Example: 12: | Type For Apply Numeric Automatic (e : 6 : 6 : 0 : 0 : values 3, 123 | c D (rmula 2 | | 1 4,5 4,5 4 1 3,5 1 3,5 1 4 1 3,5 1 4 1 3,5 1 4 1 3,5 1 4 1 3,5 1 4 1 3,5 1 4 1 1 3,5 1 1 4,5 1 4 1 4,5 1 1 4,5 1 4,5 1 4,5 1 4,5 1 4,5 1 4,5 1 4,5 1 4,5 1 4,5 1 4,5 1 4 1 4 1 4 1 1 1 1 1 1 1 1 1 1 1 1 1 | E | able 1_2 xpGrowthFit1 |] | litle | × | , , <u> </u> | | | |
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Para colocar as informações do ajuste no gráfico, vá a opção Graph → Add Text.



Selecione a opção On Active Layer.

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Selecione onde deseja colocar o texto no gráfico e digite o resultado do ajuste



O texto surgirá no gráfico ajustado. Para alterar o título e os eixos veja slides 23-

| | | 白白王 | | 84 | |
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| [19/07/2020 13:; Exponential grow Y standard error; Scaled Levenberg From x = -6 to x A (amplitude) = t (lifetime) = 1,8 y0 (offset) = 0,9 | 88 Plot: "Graph 1"] th fit of dataset: Table 1_2, using func: : Unknown : Unknown | tion: y0+A*exp(; = 0,0001 85467 472 9441 | (x/t) | | |
| Image: Table 1 6 1 6 2 -3 3 -1 4 0 5 1 6 2 7 8 9 10 11 12 13 13 14 15 16 16 | Ne1 1[X] 1,02 1,17 1,58 2,03 2,88 4,23 4,23 | , , | Description Type Formula Apply Type: Numeric Format: Automatic (e) Decimal Digits: 6 Selected column type: Double protion Reating point values Example: 123. 123 | Image: Second state in the intervent of th | Title Regressão: y = y0 + A*exp(x/t) A = 1,08 +/-0,03 t = 1,80 +/-0,01 y0 = 0,97 +/-0,02 y0 = 0,97 +/-0,02 x avis Title |



Para alterar o Título do gráfico clique duas vezes em Title, altere o título e selecione a opção OK.





Para alterar o eixo Y do gráfico clique duas vezes em Y Axis Title, altere o nome do eixo e selecione a opção OK.





Para alterar o eixo X do gráfico clique duas vezes em X Axis Title, altere o nome do eixo e selecione a opção OK.





Com o gráfico pronto para ser utilizado, para salvá-lo (exportá-lo para o computador) vá até a opção File → Export Graphs → Current.





Selecione onde deseja salvar, digite o nome do arquivo e certifique-se que o tipo do arquivo será *.jpg (arquivo de imagem). Depois clique em Save.





O gráfico será salvo em seu computador como arquivo de imagem.

