A Tutorial for Fitting with Abscissa

This sample file contain a measured and a calculated curve. But unknown are the groundlevel and the intensity factor of the calculated curve. Let us solve this problem by a least square fit.

paste.tiff ¬

1. Verify the number of the experimental curve is entered in the '# fit data curve' field.
   115062_paste.tiff ¬

2. Enter the formula for fitting. 'Y1' represents the function y(x) of curve 1 (here calc. data). This function is build by an akima interpolation.
   After pressing the 'enter key' the parameter list will appears or you get an "beep" if the expression is not correct.
   674258_paste.tiff ¬ 552055_paste.tiff ¬

   Now it is possible to enter start values for each parameter.
3. Press on 'fit' to start fitting and wait 2.7 seconds to get the result values:
   236157_paste.tiff ¬ 331260_paste.tiff ¬
   For more information look inside 'Help'.

4. Press the 'show' button to see the result curve. This curve is temporary and is made by 100 points. It is possible to increase this number by enter a new number in the '# interpol' field in the 'curve panel' and press 'OK' and 'show'. You should always verify the curve number in the 'curve panel' before changing an item of it.

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The great slope at the begin is an effect of extrapolation. It is possible to avoid this by selecting a 'fit range'.

5. This curve can be made permanent by pressing 'fix'.

6. But let us delete this curve by choosing the operation 'delete' in the 'curve panel'.

7. Now we want to fit an analytical function.
   Let us try an gaussian function. This function is already predefined. Enter: 469552_paste.tiff ¬ and press the 'enter key'.In this case it is necessary to provide start values to all parameters.

8. Select the first parameter in the para. list (ground) by double clicking on it. Activate the main window. Hold down the 'command key', click on the top of the curve don't release the mouse and drag to the bottom.

9. Press on 'show' to verify the choice.

10. Press on 'fit' and 'show'.

11. Let us modify the formula for a better fit. Substitute x with x-width*d*(sqrt(((x-x0)/width)^2+1)-1) to get: y0+G(x-width*d*(sqrt(((x-x0)/width)^2+1)-1),x0,amp,width) and press 'enter'.

12. Follow step 8, 9 and 10 to get:

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