Simfit

In order to improve the usefulness of plots it is often valuable to be able to add text strings, arrows, and graphical objects to highlight features, which involves the following steps.

1. Display the plot in advanced graphics mode, then open a new text string using the [Text] button.

2. Type in the text string, then move it into position by dragging the red arrow icon to the coordinates required and selecting the [Text move] button.

3. Edit the string by selecting the font, size, colour, and orientation, including advanced editing if subscripts or similar font changes are required.

4. Arrows, lines, or boxes can then be added to remove ambiguities using the [A/L/B] button .

5. Individual graphical objects or an information panel can be added if appropriate.

This can be done for several text strings by treating each one individually.

Here is an example using **mmfit** to fit a sum of two Michaelis-Menten functions to data in test file `mmfit.tf4`, and then choosing the graphical deconvolution control to display the two components that constitute the best fit curve. Note that the text strings were initially typed in the form

```
f1 = V1S/(Km1 + S)
```

followed by selecting the advanced text editing option to introduce subscripts for indices with the expressions `f1`, `V1`, `Km1`, `f2`, `V2`, and `Km2`, etc. Note that a temporary grid can be drawn to aid the positioning and lining up of text strings.

Deconvolution: 2 Michaelis-Mentens
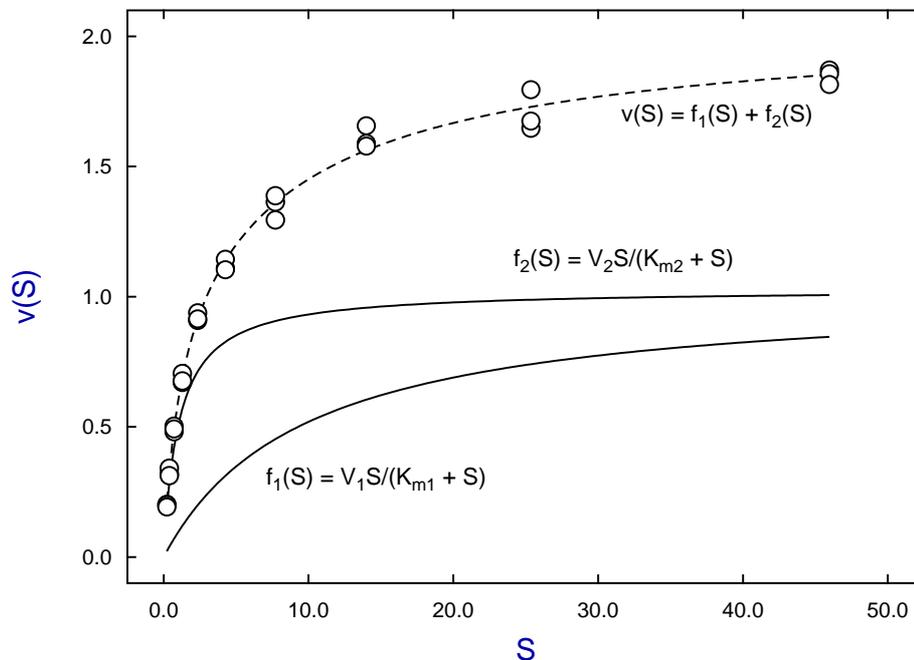
Arrows, lines, hooks, and boxes differ from text strings in that they require two coordinates, namely

- first the red arrow icon is used to set the head position,

- then the red arrow icon is used to fix the tail position.

This is shown in the next figure which was derived from the previous one by simply changing the position of the text strings and adding script arrows.

Deconvolution: 2 Michaelis-Mentens

The figure shows a plot with x-axis labeled S (ranging 0.0 to 50.0) and y-axis labeled v(S) (ranging 0.0 to 2.0). Open circle data points follow a dashed curve labeled $v(S) = f_1(S) + f_2(S)$. Two solid curves are labeled $f_2(S) = V_2 S/(K_{m2} + S)$ and $f_1(S) = V_1 S/(K_{m1} + S)$, each indicated by blue script arrows.
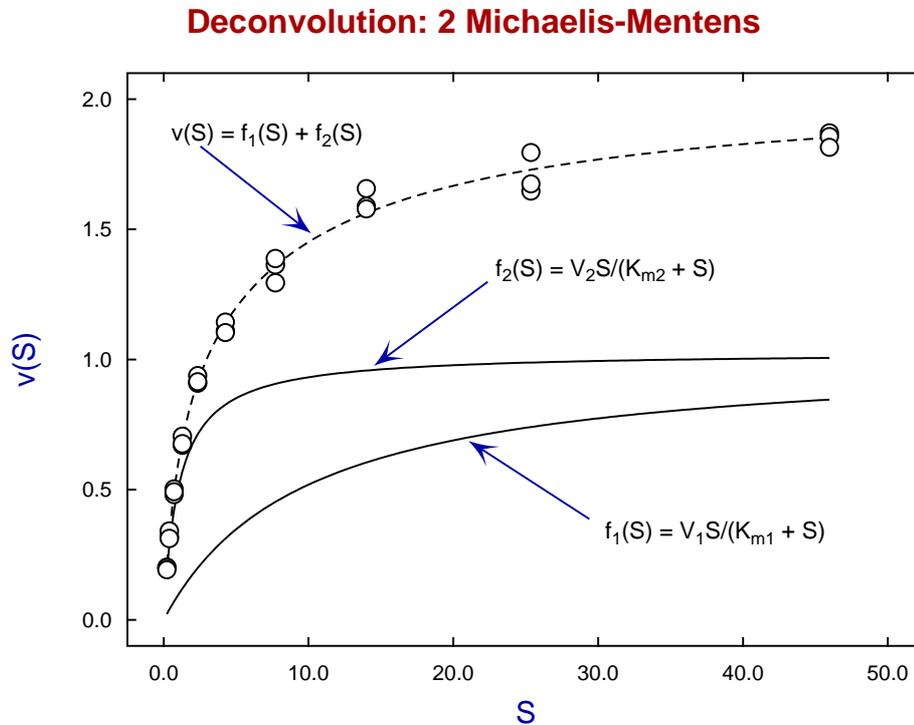
Note that the arrow, line, box options include many useful objects for illustrating graphs such as the following.

- Standard line arrows

- Hollow outline arrows

- Solid filled arrows.

- Script arrows.

- Headless arrows, i.e. lines.

- Oblique or horizontal rectangles.

- Horizontal Boxes for enclosing text.

- Three sided rectangles, i.e. hooks.

These are all positioned in the same way, that is, two coordinates must be set using the red arrow icon for the head and the tail. However there is a new feature when arrows, lines, or boxes have been selected: they can be displayed in the background underneath the data and best fit curves, or they can be displayed on top of the data and best fit curves which will often obscure features. This can be useful. For instance, a solid rectangle with background colour can be used to define an obscured region of a graph into which descriptive text or other illustrative material can be placed.

Graphical objects can be added to graphs in exactly the same way as arrows, but perhaps the most useful procedure is the ability to supply a panel containing descriptions of the data plotted, as in the next plots which used the [Panel] buttons.

Plots of y = λ + μx
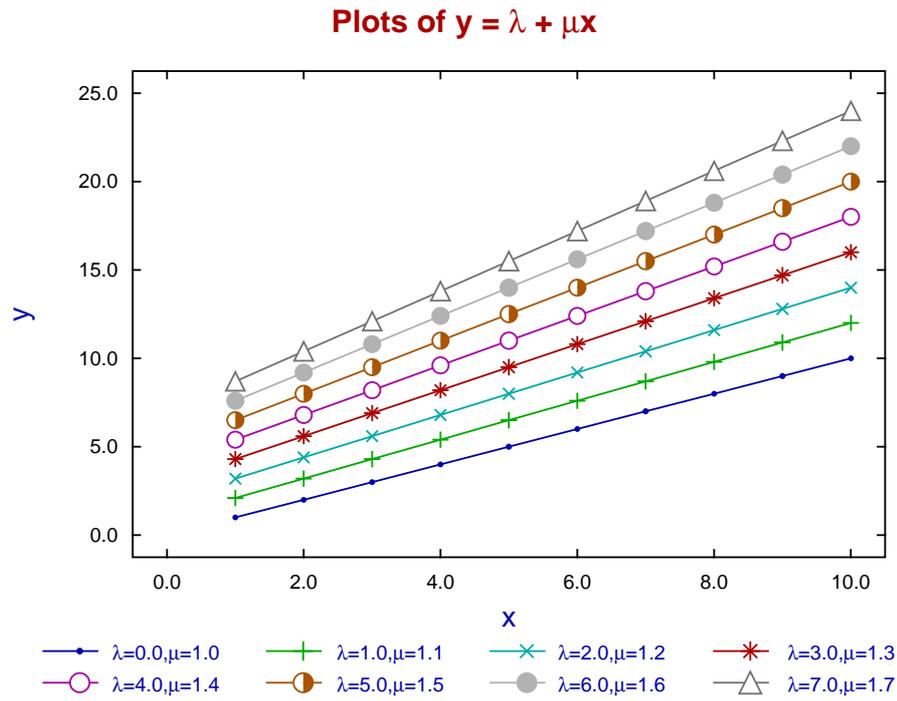
Note that the panel can be at the bottom, at the side, or moved into the interior of the graph and optionally highlighted by being enclosed by a horizontal box as shown next.

Plots of y = λ + μx