Overview

Igor graphs are simultaneously:

- Publication quality presentations of data.
- Dynamic windows for exploratory data analysis

This chapter describes how to create and modify graphs, how to adjust graph features to your liking, and how to use graphs for data exploration. It deals mostly with general graph window properties and with waveform and XY plots.

These other chapters discuss material related to graphs:

Category Plots on page II-355, **Contour Plots** on page II-365, **Image Plots** on page II-385
3D Graphics on page II-405, **Drawing** on page III-61, **Annotations** on page III-33
Exporting Graphics (Macintosh) on page III-95, **Exporting Graphics (Windows)** on page III-101
Graphics Technology on page III-506

A single graph window can contain one or more of the following:

Waveform plots	Wave data versus X values (scaled point number)
XY plots	Y wave data versus X wave data
Category plots	Numeric wave data versus text wave data
Image plots	Display of a matrix of data
Contour plots	Contour of a matrix or an XYZ triple
Axes	Any number of axes positioned anywhere
Annotations	Textboxes, legends and dynamic tags
Cursors	To read out XY coordinates
Drawing elements	Arrows, lines, boxes, polygons, pictures …
Controls	Buttons, pop-up menus, readouts …

The various kinds of plots can be overlaid in the same plot area or displayed in separate regions of the graph. Igor also provides extensive control over stylistic factors such as font, color, line thickness, dash pattern, etc.

Graph Features

Igor graphs are smart. If you expand a graph to fill a large screen, Igor will adjust all aspects of the graph to optimize the presentation for the larger graph size. The font sizes will be scaled to sizes that look good for the large format and the graph margins will be optimized to maximize the data area without fouling up the axis labeling. If you shrink a graph down to a small size, Igor will automatically adjust axis ticking to prevent tick mark labels from running into one another. If Igor's automatic adjustment of parameters does not give the desired effect, you can override the default behavior by providing explicit parameters.

Igor graphs are dynamic. When you zoom in on a detail in your data, or when your data changes, perhaps due to data transformation operations, Igor will automatically adjust both the tick mark labels and the axis labels. For example, before zooming in, an axis might be labeled in milli-Hertz and later in micro-Hertz. No matter what the axis range you select, Igor always maintains intelligent tick mark and axis labels.

If you change the values in a wave, any and all graphs containing that wave will automatically change to reflect the new values.

You can zoom in on a region of interest (see **Manual Scaling**), expand or shrink horizontally or vertically, and you can pan through your data with a hand tool (see **Panning**). You can offset graph traces by simply dragging them around on the screen (see **Trace Offsets**). You can attach cursors to your traces and view