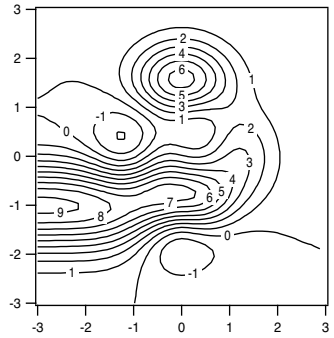
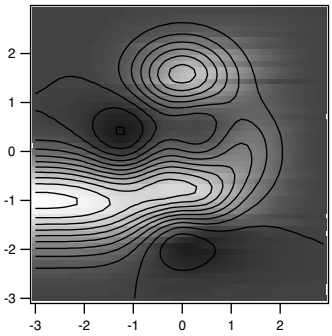


AppendMatrixContour mat2d



```
AppendMatrixContour mat2d
AppendImage mat2d
```

Instead of displaying an image plot with the contour plot, you can instruct Igor to add a color fill between contour levels. You can see this using these commands:

```
RemoveImage mat2d
ModifyContour mat2d ctabFill={*,*,Grays256,0}
```

Modifying a Contour Plot

You can change the appearance of the contour plot choosing Graph→Modify Contour Appearance. This displays the Modify Contour Appearance dialog. This dialog is also available as a subdialog of the New Contour Plot and Append Contour Plot dialogs.

You can open the Modify Contour Appearance by Shift-double-clicking the contour plot or by right-clicking it but not on a contour and choosing Modify Contour Appearance from the contextual menu.

Use preferences to change the default contour appearance, so you won't be making the same changes over and over. See **Contour Preferences** on page II-380.

The Modify Contour Appearance Dialog

The following sections describe some of the contour plot parameters you can change using the Modify Contour Appearance dialog.

Contour Data Pop-Up Menu

The Contour Data pop-up menu shows the "contour instance name" of the contour plot being modified. The name of the contour plot is the same as the name of the Z wave containing the contour data.

If the graph contains more than one contour plot, you can use this pop-up menu to change all contour plots in the target graph.

If the graph contains two contour plots *using the same Z wave name*, an instance number is appended to those Z wave names in this pop-up menu. See **Instance Notation** on page IV-20, and **Contour Instance Names** on page II-376.

Contour Levels

Each contour trace draws lines at one constant Z level. The Z levels are assigned automatically or manually as specified in this part of the dialog.

Igor computes automatic levels by subdividing the range of Z values into approximately the number of requested levels. You can instruct Igor to compute the Z range automatically from the minimum and maximum of the Z data, or to use a range that you specify in the dialog. Igor attempts to choose "nice" contour levels that minimize the number of significant digits in the contour labels. To achieve this, Igor may create more or fewer levels than you requested.

You can specify manual levels directly in the dialog in several ways:

- Linearly spaced levels (constant increment) starting with a first level and incrementing by a specified amount.
- A list of arbitrary levels stored in a wave you choose from a pop-up Wave Browser.
- A list of arbitrary levels you enter in the More Contour Levels dialog that appears when you click the More Contour Levels checkbox. These levels are *in addition to* automatic, manual, or from-wave levels.

The More Levels dialog can be used for different purposes:

- To add a contour level to those already defined by the automatic, manual, or from-wave levels. You might do this to indicate a special feature of the data.
- As the only source of arbitrary contour levels, for complete control of the levels. You might do this to slightly change a contour level to avoid problems (see **Contouring Pitfalls** on page II-379). Disable the auto or manual levels by entering 0 for the number of levels. The only contour levels in effect will be those entered in the More Levels dialog.

WaveMetrics provides some utility procedures for dealing with contour levels. See "WaveMetrics Contour Plot Procedures" in the "WM Procedures Index" help file for details.

Update Contours Pop-Up Menu

Igor normally recalculates and redraws the contour plot whenever any change occurs that might alter its appearance. This includes changes to any data waves and the wave supplying contour levels, if any. Since calculating the contour lines can take a long time, you may want to disable this automatic update with the Update Contours pop-up menu.

"Off" completely disables updating of the contours for any reason. Choose "once, now" to update the contour when you click the Do It button. "Always" selects the default behavior of updating whenever the contour levels change.

Contour Labels Pop-Up Menu

Igor normally adds labels to the contour lines, and updates them whenever the contour lines change (see **Update Contours Pop-Up Menu** on page II-369). Since updating plots with many labels can take a long time, you may want to disable or modify this automatic update with the Labels pop-up menu.

"None" removes any existing contour labels, and prevents any more from being generated.

"Don't update any more" keeps any existing labels, and prevents any more updates. This is useful if you have moved, removed, or modified some labels and you want to keep them that way.

"Update now, once" will update the labels when you click the Do It button, then prevents any more updates. Use this if updating the labels takes too long for you to put up with automatic updates.

"If contours change", the default, updates the labels whenever Igor recalculates the contour lines.

"Always update" is the most aggressive setting. It updates the labels if the graph is modified in almost any way, such as changing the size of the graph or adjusting an axis. You might use this setting temporarily while making adjustments that might otherwise cause the labels to overlap or be too sparse.

Click Label Tweaks to change the number format and appearance of the contour labels with the Contour Labels dialog. See **Modifying Contour Labels** on page II-378.

For more than you ever wanted to know about contour labels, see **Contour Labels** on page II-377.

Line Colors Button

Click the Line Colors button to assign colors to the contour lines according to their Z level, or to make them all the same color, using the Contour Line Colors dialog.

Autoscaled color mapping assigns the first color in a color table to the minimum Z value of the contour data (not to the minimum contour level), and the last color to the maximum Z value.