

Chapter II-15 — Contour Plots

See [The Color of Contour Traces](#) on page II-371 for further discussion of contour colors.

Show Boundary Checkbox

Click this to generate a trace along the perimeter of the contour data in the XY plane. For a matrix contour plot, the perimeter is simply a rectangle enclosing the minimum and maximum X and Y. The perimeter of XYZ triplet contours connects the outermost XY points. This trace is updated at the same time as the contour level traces.

Show XY Markers Checkbox

Click this to generate a trace that shows the XY locations of the contour data. For a matrix contour plot, the locations are by default marked with dots. For XYZ triplet contours, they are shown using markers. As with any other contour trace, you can change the mode and marker of this trace with the Modify Trace Appearance dialog. This trace is updated at the same time as the contour level traces.

Fill Contours Checkbox

Click this to fill between contour levels with solid colors. Click the Fill Colors button to adjust the colors in the same manner as described under [Line Colors Button](#) on page II-369.

Warning: Solid fills can sometimes fail.

You can set the fill and color for individual levels using the Modify Trace Appearance dialog even if the Fill Contours checkbox is off.

See [Contour Fills](#) on page II-373 for more information.

Show Triangulation Checkbox

Click this to generate a trace that shows the Delaunay triangulation of the contour data. This is available only for XYZ triplet contours. This trace is updated at the same time as the contour level traces.

Interpolation Pop-Up Menu

XYZ triplet contours can be interpolated to increase the apparent resolution, resulting in smoother contour lines. The interpolation uses the original Delaunay triangulation. Increasing the resolution requires more time and memory; settings higher than x16 are recommended only to the very patient.

Contour Traces

Igor creates XY pairs of double-precision waves to contain the contour trace data, and displays them as ordinary graph traces. Each trace draws all the curves for one Z level. If a single Z level generates more than one contour line, Igor uses a blank (NaN) at the end of each contour line to create a gap between it and the following line.

The same method is used to display markers at the data's XY coordinates, the XY domain's boundary, and, for XYZ triplet contours only, the Delaunay triangulation.

The names of these traces are fabricated from the name of the Z data wave or matrix. See [Contour Trace Names](#) on page II-371.

One important special property of these waves is that they are private to the graph. These waves do not appear in the Data Browser or in any other dialog, and are not accessible from commands. There is a trick you can use to copy these waves, however. See [Extracting Contour Trace Data](#) on page II-376.

The contour traces, which are the visible manifestation of these private waves, *do* show up in the Modify Trace Appearance dialog, and *can* be named in commands just like other traces.

There is often no need to bother with the individual traces of a contour plot because the Modify Contour Appearance dialog provides adequate control over the traces for most purposes. However, if you want to distinguish one or more contour levels, to make them dashed lines, for example, you can do this by modifying the traces