



Figure 5-8: Formatting a plot using the Plot Editor.

5.5 PLOTS WITH LOGARITHMIC AXES

Many science and engineering applications require plots in which one or both axes have a logarithmic (log) scale. Log scales provide means for presenting data over a wide range of values. It also provides a tool for identifying characteristics of data and possible forms of mathematical relationships that can be appropriate for modeling the data (see Section 8.2.2).

MATLAB commands for making plots with log axes are:

- | | |
|-----------------------------|---|
| <code>semilogy(x, y)</code> | Plots y versus x with a log (base 10) scale for the y axis and linear scale for the x axis. |
| <code>semilogx(x, y)</code> | Plots y versus x with a log (base 10) scale for the x axis and linear scale for the y axis. |
| <code>loglog(x, y)</code> | Plots y versus x with a log (base 10) scale for both axes. |

Line specifiers and Property Name and Property Value arguments can be added to the commands (optional) just as in the `plot` command. As an example, Figure 5-9 shows a plot of the function $y = 2^{(-0.2x+10)}$ for $0.1 \leq x \leq 60$. The figure shows four plots of the same function: one with linear axes, one with a log scale for the y axis, one with a log scale for the x axis, and one with a log scale on both axes.