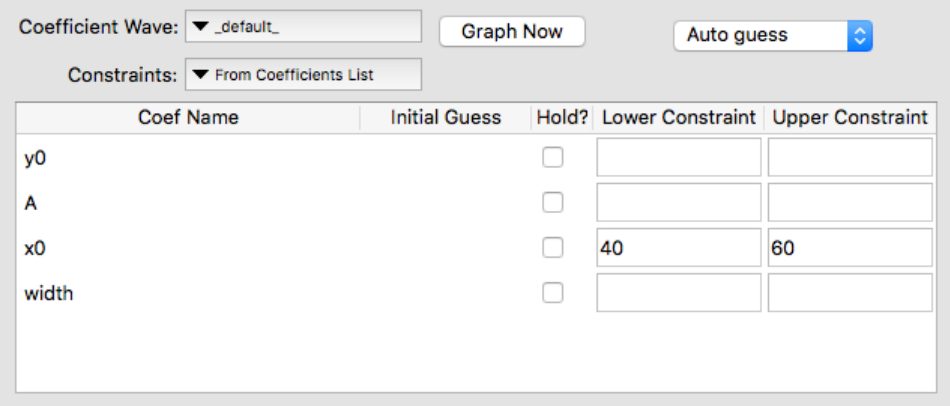


Filling in a value in the Lower Constraint column causes the dialog to generate a command to constrain the corresponding coefficient to values greater than the value you enter. Filling in a value in the Upper Constraint column constrains the corresponding coefficient to values less than the value you enter. A box that is left empty does not generate any constraint.

The figure above was made with the gauss function chosen. The following commands are generated by the dialog:

```
Make/O/T/N=2 T_Constraints
T_Constraints[0] = {"K2 > 40","K2 < 60"}
CurveFit gauss aa /D /C=T_Constraints
```

A Make command to make a text wave to contain constraint expressions.

A wave assignment to put constraint expressions into the wave.

/C parameter added to CurveFit command line to request a constrained fit.

More complicated constraints are possible, but cannot be entered in the Curve Fitting dialog. This requires that you make a constraints wave before you enter the dialog. Then choose the wave from the Constraints menu. See the following sections to learn how to construct the constraints wave.

## Complex Constraints Using a Constraints Wave

You can constrain the values of linear combinations of coefficients, but the Curve Fitting dialog provides support only for simple constraints. You can construct an appropriate text wave with constraints before entering the Curve Fitting dialog. Select the wave from the Constraints menu in the Coefficients tab. You can also use the CurveFit or FuncFit commands on the command line with a constraints wave.

Each element of the text wave holds one constraint expression. Using a text wave makes it easy to edit the expressions in a table. Otherwise, you must use a command line like the second line in the example shown above.

## Constraint Expressions

Constraint expressions can be arbitrarily complex, and can involve any or all of the fit coefficients. Each expression must have an inequality symbol (“<”, “<=”, “>”, or “>=”). In the expressions the symbol Kn (K0, K1, etc.) is used to represent the nth fitting coefficient. This is like the Kn system variables, but they are merely symbolic place holders in constraint expressions. Expressions can involve sums of any combination of the Kn’s and factors that multiply or divide the Kn’s. Factors may be arbitrarily complex, even nonlinear, as long as they do not involve any of the Kn’s. The Kn’s cannot be used in a call to a function, and cannot be involved in a nonlinear expression. Here are some legal constraint expressions:

```
K0 > 5
K1+K2 < numVar^2+2      // numVar is a global numeric variable
K0/5 < 2*K1
(numVar+3)*K3 > K1+K2/(numVar-2)
log(numVar)*K3 > 5      // nonlinear factor doesn't involve K3
```

These are not legal: