Chapter 163

Scatter Plot Matrix for Curve Fitting

Introduction

One of the first tasks in curve fitting is to graphically inspect your data. This program lets you view scatter plots of various transformations of both X and Y. These plots are shown in matrix format.

You can look for transformations of both X and Y that give a simple relationship. Usually, your first choice would be to look for transformations of X and Y that yield a straight line. If these cannot be found, the next choice is to find functions that yield a recognizable curve.

Data Structure

The data are entered in two variables: one dependent (vertical) variable and one independent (horizontal) variable.

Procedure Options

This section describes the options available in this procedure.

Variables Tab

This panel specifies the variables used in the analysis.

Y (Vertical) Variable

Variable

Specify the variable to be displayed on the vertical axis.

Y (Vertical) Variable – Select Y Transformations

1/(Y^2), 1/Y, 1/SQRT(Y), LN(Y), SQRT(Y), Y, and Y^2

Specifies whether this transformation of the Y should be plotted.

X (Horizontal) Variable

X Variable

Specifies a single independent (X) variable from the current database. This is the that will appear on the horizontal axis.

X (Horizontal) Variable – Select X Transformations

1/(X^2), 1/X, 1/SQRT(X), LN(X), SQRT(X), X, and X^2

Specifies whether this transformation of the X should be plotted.

Other Variables

Grouping (Symbol) Variable

This variable may be used to separate the observations into groups.

Data Label Variable

A data label is text that is displayed beside each point.

Frequency Variable

Specify an optional variable that defines the count of each data point.

Symbol Size Variable

Specify a variable that defines the relative size of each data point.

Plots Tab

These options specify the plot format.

Plot Options

Number of Plots Per Row

This option controls the size of the plots by specifying how many plots are to be shown on a row.

Plot Format

Specify whether to display the indicated plots. Click the plot format button to change the plot settings.

Example 1 – Creating a Scatter Plot Matrix

This section presents an example of how to generate a scatter plot matrix. In this example, we will plot the variables Y and X of the FnReg6 dataset.

You may follow along here by making the appropriate entries or load the completed template **Example 1** by clicking on Open Example Template from the File menu of the Scatter Plot Matrix for Curve Fitting window.

1 Open the FnReg6 dataset.

- From the File menu of the NCSS Data window, select **Open Example Data**.
- Click on the file **FnReg6.NCSS**.
- Click **Open**.

2 Open the Scatter Plot Matrix for Curve Fitting window.

- Using the Analysis menu or the Procedure Navigator, find and select the **Scatter Plot Matrix for Curve Fitting** procedure.
- On the menus, select **File**, then **New Template**. This will fill the procedure with the default template.

3 Specify the variables.

- On the Scatter Plot Matrix for Curve Fitting window, select the **Variables tab**.
- Double-click in the **Variable** box under **Y (Vertical) Variables.** Select **Y** from the list of variables and then click **Ok**.
- Double-click in the **Variable** box under **X (Horizontal) Variables**. Select **X** from the list of variables and then click **Ok**.

4 Run the procedure.

- From the Run menu, select **Run Procedure**. Alternatively, just click the green Run button.

Plots Section