DEX SCATTER PLOT

PURPOSE

Generates a dex scatter plot.

DESCRIPTION

A dex scatter plot is a graphical method for representing a design of experiment problem. The first variable is a response variable while the remaining variables (must be at least one) represent levels of factors. Qualitative levels are coded as indices (e.g., 1 for process A, 2 for process B). A separate subplot is drawn for each factor with the subplot for factor k centered horizontally at x=k. Each subplot has a given horizontal width (defined by the DEX WIDTH command, defaults to 0.5). For example, the subplot for factor 2 ranges from 1.75 to 2.25 on the horizontal axis. The levels of the factor are assigned an x coordinate within this range (from lowest to highest). Then within each subplot:

Vertical   axis   =   value of the response variable;
Horizontal axis   =   value of the level of a given factor.

This plot graphically shows the following:

1. How the response variable varies with the level of the factor;

2. How the response variable varies between factors.

SYNTAX

DEX SCATTER PLOT <y> <x1> ... <xn>   <SUBSET/EXCEPT/FOR qualification>
where <y> is the response variable;
       <x1> ... <xn> is a sequence of variables representing factors in a designed experiment;
and where the <SUBSET/EXCEPT/FOR qualification> is optional.

EXAMPLES

DEX SCATTER PLOT Y X1 X2
DEX SCATTER PLOT Y X1 X2 X3
DEX SCATTER PLOT Y X1 X2 X3 X4
DEX SCATTER PLOT Y X1 TO X4

NOTE 1

The TO syntax is allowed for the list of factor variables (see the EXAMPLES above).

NOTE 2

The CHARACTER and LINE settings can be used to control the appearance of the plot. The first trace is typically drawn with a blank line and some type of character set (the choice of character is a matter of user preference). The second trace draws a horizontal line at the overall mean. It is typically drawn with a blank character and a solid line (some analysts may prefer a dashed or dotted line). In any event, the user must explicitly set character and line settings (they default to all lines solid and all characters blank).

DEFAULT

None

SYNONYMS

None

RELATED COMMANDS

LINES	=	Sets the type for plot lines.
CHARACTER	=	Sets the type for plot characters
PLOT	=	Generates a data or function plot.
DEX SIGN PLOT	=	Generates a dex sign plot.
DEX ... PLOT	=	Generates a dex plot for a statistic.
DEX ... PARETO PLOT	=	Generates a Pareto dex plot for a statistic.
DEX ... YOUDEN PLOT	=	Generates a Youden dex plot for a statistic.
DEX ... EFFECTS PLOT	=	Generates a dex effects plot for a statistic.
DEX ... PARETO EFFECTS PLOT	=	Generates a Pareto effects dex plot for a statistic.
DEX ... ABSOLUTE EFFECTS PLOT	=	Generates an absolute effects dex plot for a statistic.
DEX ... PARE ABSO EFFECTS PLOT	=	Generates a Pareto absolute effects dex plot for a statistic.

DEX WIDTH   =   Specifies the width of levels in a dex plot..

REFERENCE
"Statistics for Experimenters," Box, Hunter, and Hunter, Wiley and Sons, 1978.

APPLICATIONS
Design of Experiments

IMPLEMENTATION DATE
89/12

PROGRAM
SKIP 25
READ BOXYIEL2.DAT Y X1 X2
.
TITLE AUTOMATIC
CHARACTERS X BLANK
LINE BLANK SOLID
YLIMITS 75 90
YTIC OFFSET 0 2
Y1LABEL CHEMICAL YIELD
XLIMITS 1 2
XTIC OFFSET 0.5 0.5
MAJOR XTIC MARK NUMBER 2
MINOR XTIC MARK NUMBER 0
XTIC MARK LABEL FORMAT ALPHA
XTIC MARK LABEL CONTENT TIME TEMPERATURE
X1LABEL FACTORS
DEX SCATTER PLOT Y X1 TO X2