LOWESS FRACTION

PURPOSE
Sets the width of lowess smoothing (which carries out robust locally-weighted time series and scatter plot smoothing).

DESCRIPTION
For lowess smoothing, the analyst can vary the size of the smoothing window. This size is given as the fraction (0 to 1) of the data that the window should cover. The default window size is 0.1 (which states that the smoothing window has a total width of 10% of the horizontal axis variable). This width must be a decimal value between 0 and 1. To specify the width of the lowess smooth, use the LOWESS FRACTION command prior to using the LOWESS SMOOTH command.

SYNTAX
LOWESS FRACTION <w>

where <w> is a number or a parameter in the range 0 to 1 (exclusive).

EXAMPLES
LOWESS FRACTION .3
LOWESS FRACTION .45
LOWESS FRACTION P

LET W = .45
LOWESS FRACTION W
LOWESS SMOOTH Y X

DEFAULT
The default width is 0.1 (that is, 10% of the range of the horizontal axis variable).

SYNONYMS
LOWESS DECIMAL

RELATED COMMANDS
LOWESS SMOOTH	=	Carries out lowess smoothing.
LOWESS DEGREE	=	Specifies whether the LOWESS SMOOTH command performs linear or quadratic local fitting.
LOWESS PERCENT	=	Sets the width as a percentage rather than a fraction.
SMOOTH	=	Carries out least squares smoothing.
FILTER WIDTH	=	Sets smoothing width for least squares smoothing.

APPLICATIONS
Robust Smoothing, Time Series Analysis

IMPLEMENTATION DATE
88/7

PROGRAM

```
        SERIAL READ Y
        18 14 25 19 13 31 14 13 28 14 11 21 20 16 31
        15 21 18 25 23 32 13 15 25 43 20 18 20 21 34
        END OF DATA
        SERIAL READ X
        130 225 95 100 170 65 175 130 80 150 150 107 122 110 52
        72 110 97 92 90 70 130 130 88 48 85 139 103 110 65
        END OF DATA
        .
        MULTIPLOT 2 2; MULTIPLOT CORNER COORDINATES 0 0 100 100
        CHARACTER X BLANK; LINES BLANK SOLID; TITLE LOWESS SMOOTH
        .
        LOWESS FRACTION 0.2
        XLABEL LOWESS FRACTION = 0.2
        LOWESS SMOOTH Y X
        PLOT Y PRED VS X
        LOWESS FRACTION 0.3
        X1LABEL LOWESS FRACTION = 0.3
        LOWESS SMOOTH Y X
        PLOT Y PRED VS X
        LOWESS FRACTION 0.5
        X1LABEL LOWESS FRACTION = 0.5
        LOWESS SMOOTH Y X
        PLOT Y PRED VS X
        LOWESS FRACTION 0.7
        X1LABEL LOWESS FRACTION = 0.7
        LOWESS SMOOTH Y X
        PLOT Y PRED VS X
        END OF MULTIPLOT
```