

BREAK LOOP

PURPOSE

Terminate a sequential loop.

DESCRIPTION

A sequential loop is one that has a defined start and stop value and a constant increment. The values for the start, increment, and stop can have real values (i.e., DATAPLOT is not limited to integer loops). DATAPLOT loops can have either a positive or a negative increment.

Sometimes it is convenient to terminate a loop before the last value has been incremented. For example, a loop may be iterating a calculation until some convergence criterion is reached. The BREAK LOOP command is used for this purpose. In effect, it allows the LOOP to function as a DO WHILE type of loop (DATAPLOT does not provide any formal DO WHILE or REPEAT UNTIL control structure at this time). The BREAK LOOP command is almost always contained within an IF block.

SYNTAX

BREAK LOOP

EXAMPLES

```
LOOP FOR ITER = 1 1 MAXITER
...
IF CONV <= 0.0001
    BREAK LOOP
END OF IF
END OF LOOP
```

DEFAULT

None

SYNONYMS

None

RELATED COMMANDS

END OF LOOP	=	Normal termination of a loop.
LOOP	=	Execute a sequential loop.
IF	=	Conditionally execute commands.

APPLICATIONS

Program control structure

IMPLEMENTATION DATE

94/4

PROGRAM

```
FEEDBACK OFF
. Computes Least Absolute Deviations fit
. using iteratively re-weighted least squares.
. The following assumes that a string F has been defined before
. calling this macro to define the type of fit. E.g.,
. LET STRING F = FIT Y X
WEIGHT
^F
LET MAXITER = 10
LOOP FOR K = 1 1 MAXITER
  LET RESOLD = RES
  LET MED = MEDIAN RES
  LET TEMP = ABS(RES - MED)
  LET MAD = MEDIAN TEMP
  LET S = MAD/0.6745
  LET U = RES/S
  LET TEMP = ABS(RES)
  LET C = MEDIAN TEMP
  LET TAG = ABS(Y - PRED)
  LET WT = C/TAG SUBSET TAG > C
  LET WT = 1 SUBSET TAG <= C
  WEIGHTS WT
  ^F
  .
  LET DELTA = (RESOLD - RES)**2
  LET NUM = SUM DELTA
  LET NUM = SQRT(NUM)
  LET DELTA2 = RESOLD*RESOLD
  LET DENOM = SUM DELTA2
  LET CONV = NUM/DENOM
  IF CONV <= 0.0001
    BREAK LOOP
  END OF IF
END OF LOOP
```