# *Appendix A*

# *DSSMATH Commands*

## *Appendix A - DSSMATH Commands*

### *Command Syntax*

*Brackets ([ ]) and parentheses (...) symbols are notation used for describing commands and are not part of the actual command syntax.*

| | |
|---|---|
| *UPPERCASE* | *Items in uppercase are required key words as shown.* |
| *lowercase* | *Items in lowercase are to be supplied by the user.* |
| *[ ]* | *Items within brackets are optional.* |
| *...* | *Items immediately preceding parentheses may be repeated.* |

*Commas and blanks are used to separate items and are interchangeable except as otherwise noted.*

*Periods are required when options are specified. No blanks should appear between command and period or between period and options.*

### *Index of Commands*

*Name: ** Comment*
*Use: **[parameters] ...*

*Description: May be used to annotate input command streams.*

*Parameters:*
*text - Any text up to 130 characters per line.*

*Example: ** Set the time window*

*Name: CATALOG Display a catalog of a DSS file*
*Use: CA [.options] [parameters]*

*Description: Catalog (list) the records (pathnames) in a DSS file. The catalog is listed at the terminal one screen-full at a time. The numbers associated with each record may be used in other commands to refer to the record in lieu of a pathname.*

*Options:*

| | |
|---|---|
| *None* | *(list old catalog in full mode)* |
| *N* | *(create new catalog)* |
| *A* | *(create abbreviated catalog)* |

*Parameters:*

| | |
|---|---|
| *None* | *Catalog last opened or referenced DSS filename.* |
| *filename:* | *Is the name of a DSS file, followed by a colon.* |

*Example: CA.NA MASDSS:*

*Name: CLEAR Remove a variable data label from memory*
*Use: CL [parameters]*

*Description: Clear releases memory slots. If the parameter 'ALL' is present, all slots are released. If any labels are specified, then only the memory slots represented by the labels are released.*

*Parameters:*

| | |
|---|---|
| *None* | *No action is taken.* |
| *ALL* | *All variable labels are cleared and all data is initialized.* |
| *label...* | *Will clear specified variable labels.* |

*Example: CL FLOW1 FLOW2 STOR1*

*Name: COMPUTE Perform a computationn*
*Use: CO [parameters]*

*Description: DSS data header information are checked in some computations. If any of the independent variable values are flagged as missing then the computed value is missing. Data types and units of the dependent variable are generally undefined, but may be set by some functions.*

*Parameters: [IF(x1 operator x2)] result=expression*

*"result" is a label for the resultant of the computation. The result may be a currently defined variable and may be used as an independent variable in subsequent computations.*

*"operator" is one of the following relationships:*

| | |
|---|---|
| *LT less than* | *LE less than or equal* |
| *EQ* equal* | *NE not equal* |
| *GT greater than* | *GE greater than or equal* |

** Note: No precision tolerance is used for the "EQ" operator.*

*"x1" and "x2" are time series, scalars or constants. Time series variables must be concurrent with the operand.*

*"expression" is either a simple arithmetic operation or a function. It may reference one or more labels for variables which have been previously computed or retrieved.*

*Example: CO IF(FLOW LT 0.0) FLOW=0.0*
*CO IF(FLOW GT 0.0) FLOW=FLOW**.5*

*Name: DIAG Diagnostic DSS trace*
*Use: DI [parameters]*

*Description: Toggles diagnostic trace output on and off. Caution, this command can generate extensive output.*

*Parameters:*

| | |
|---|---|
| *None* | *Diagnostic trace is off.* |
| *ON* | *Turn on diagnostic trace.* |
| *OFF* | *Turn off diagnostic trace.* |

*Name: DPATH Display a selective catalog of a DSS file*
*Use: DP [.options] [parameters]*

*Description: Displays pathnames, tags and reference numbers from the catalog file (see CATALOG command). The DP command has the selective display capability which provides the option of selecting and listing only certain pathnames based on matching pathname parts.*

*Options:*

| | |
|---|---|
| *None* | *(uses last referenced DSS file catalog)* |
| *N* | *(create new catalog)* |
| *A* | *(create abbreviated catalog)* |

*Parameters:*

| | |
|---|---|
| *None* | *Displays all pathnames.* |
| *filename:* | *Is the name of a DSS file, followed by a colon.* |
| *A=..B=..etc* | *Selective catalog based on pathname parts.* |

*Example: DP MASDSS: B=RED CREEK C=FLOW*

*Name: FINISH Terminate and exit the program*
*Use: FI*

*Name: GET Retrieve data from a DSS file*
*Use: GE [options] [parameters]*

*Description: Retrieves data from a DSS data file. The data may be time-series, or paired-function data ( e.g. rating tables or polynomial coefficients ).*

*Options:*

| | |
|---|---|
| *P* | *Includes the value just prior to the time window.* |
| *N* | *Includes the next value after the end of the time window.* |

*Parameters: label=[filename:]pathname*

| | |
|---|---|
| *"label"* | *is an alphanumeric identifier for the data.* |
| *"filename:"* | *is the DSS file name to use and it will be automatically opened if necessary. If omitted, the previously opened DSS file is used.* |
| *"pathname"* | *may be an explicit pathname, tag or pathname catalog number, or the previously specified pathname may be modified by specifying replacement pathname parts. If, for example, the previously defined pathname were: /SCIOTO/CISG3/FLOW/01FEB1986/1HOUR/OBS/ and the following were specified: B=HIGH3 then the new specification would become: /SCIOTO/HIGH3/FLOW/01FEB1986/1HOUR/OBS/* |

*Example: GET FLOW=mastdb.dss:/SCIOTO/CHIANO/FLOW/01JAN1984/1HOUR/OBS/*
*Name: HELP Get help on commands and functions*
*Use: HE [parameters]*

*Description: Displays on-line documentation for a command or function. If no parameter is given, a list of commands is displayed. In order to get a list of the functions, enter "HE FUNCTION".*

*Parameters:*
- *"name" Command or function name for which a detailed description is needed.*
- *FUNCTION Will display a listing of the available DSSMATH functions.*

*Example: HELP COMPUTE*
*HELP TTSR*

*Name: OPEN Open a DSS file*
*Use: OP [parameters]*

*Description: The OPEN command is used to open a new DSS file. A maximum of five DSS files can be kept open on a continuous basis. The GET and PUT commands can also be used to open DSS files.*

*Parameters:*
- *"name" The complete file name and its path. A maximum of 64 characters is allowed on the DOS version and 80 characters on the UNIX/"DOS Lahey" versions.*

*Example: OPEN d:\data\mastdb.dss*

*Name: PUT Store data in a DSS file*
*Use: PU [options] [parameters]*

*Description: The PUT command is used to take the data in a variable label and store it in a DSS file. If no parameters are specified, the data will be stored in the variables pathname, if one has been given, or in the last pathname defined.*

*Options:*
- *A All data in the time-series identified by label is written out to the DSS file "filename" and DSS record pathname, replacing any existing data.*
- *R Replaces existing data but it will not write out new DSS records consisting entirely of missing values.*
- *M Same as option R, except that existing data will not be replaced by a missing value.*

*Default for regular time series is to replace only missing values; existing non-missing values will not be replaced. Default for irregular time series is to replace data occuring at the same time and insert data at new times.*

*Parameters: label=[filename:]pathname*

*"label"* *identifies the time series to be written*

*"filename:"* *is the name of a DSS file to receive the data. If it is not specified, then the last previously referenced "filename" will be used. The DSS file will be automatically opened, if necessary.*

*"pathname"* *is a definition of the pathname to use. The full pathname may be explicitly defined, or pathname parts may be used to modify the last previously defined pathname or the pathname associated with the label, if defined.*

*Example: PUT.A FLOW=/usr2/data/mastdb.dss:F=COMPUTED*

*Name: SD Set data descriptions*
*Use: SD [parameters]*

*Description: Data descriptions are data items contained in DSS time series and paired function headers.*

*Parameters: label,parameter*

*"label"* *is the DSSMATH label for data.*

*"parameter"* *indicate which items to change and what the new values are. "parameter" has the form "item"="value", where "item" is TYPE or UNITS for time series data and TYPE, UNITS or LABELS for paired function data. The designation for "item" may be abbreviated, such as U= for UNITS= . "value" is an appropriate entry for the particular "item". For paired function data, enter one "value" for each curve in a series separated by commas. For example: U=FEET,CFS.*

*Example: SD FLOW UNITS=CFS TYPE=PER-AVER*

*Name: SHOW Display internal data variable information*
*Use: SH [parameters]*

*Description: Displays selected internal information about the data variable denoted as a parameter to the SHOW command. Its main use is for debugging. However, this command is the only way to see the value of a scalar variable. For time-series it shows the data's array position, time (internal representation), time (external representation), value, and data quality flag. For paired data, it shows the DSS header information.*

*Parameters: label,parameter*

| | |
|---|---|
| *None* | *No action is taken.* |
| *label* | *Label is the name of the data variable to display.* |
| *SCALARS* | *Display all scalar variables and their values.* |

*Example: SHOW FLOW*

*Name: SMISSING Set missing value indicators*
*Use: SM [parameters]*

*Description: Missing value indicators are used to define the numeric values with which missing data are indicated. Up to 10 numbers can be specified. If no parameters are specified, default values -901.0 and -902.0 are used.*

*Caution: DSS will only accept the default values of -901.0 and -902.0 as valid, therefore be careful about writing data back to your DSS file when the missing value indicators have been changed from the default settings.*

*Parameters: "parameter" All valid numeric values.*

*Example: SM -99999. 999999. -901. -902*

*Name: SP Set data pathname*
*Use: SP [parameters]*

*Description: The SP command is used to define or set the default pathname for a variable label name.*

*Parameters: label,parameter*

| | |
|---|---|
| *"label"* | *is the DSSMATH label for data.* |
| *"parameter"* | *consists of either a pathname or a pathname part. If "parameter" is a part, it has the form "part"="value", where "part" is A, B, C, D, E, or F, and "value" is appropriate. If parts are specified, the resulting pathname for the data consists of the current default pathname modified by replacement of the specified parts.* |

*Example: SP FLOW A=SCIOTO B=COSCO C=FLOW D=01JAN1984 E=1HOUR F=CALCULATED*

*Name: STATUS Display key program variables states or values*
*Use: ST [parameters]*

*Description: The status command may be used to check on the status of all the variables defined and their data descriptions. It can also be used to show the status of specific variables by specifying them as parameters.*

*Parameters:*

| | |
|---|---|
| *"label"...* | *Show status information for each label specified.* |
| *ALL* | *Show status information on all labels that exist.* |

*Example: STAT FLOW, STOR*

*Name: TABULATE Tabulate values of time-series or paired data*
*Use: TA [options] [parameters]*

*Description: Tabulates the data represented by the variable label. Up to seven labels may be tabulated. Both time series or paired function data may be tabulated.*

*Options:*

| | |
|---|---|
| *F* | *Send the output to the file specified on the execution line by the use of the parameter TAB=filename.* |

*Parameters:*

| | |
|---|---|
| *"label"* | *Name or label used for the data variable.* |

*Example: TAB FLOW STOR ELEV*

*Name: TIME Set a time-window for time-series data*
*Use: TI [parameters]*

*Description: Starting and ending times and dates may be expressed in a variety of ways, including implicit and relative times and dates:*

| | |
|---|---|
| *04MAR1983 0700* | *complete, explicit expression for starting and ending time.* |
| *D 0700* | *current date, time explicit* |
| *D* | *current date, time implicit (2400)* |
| *T* | *current date and time* |
| *T-2H* | *two hours ago* |
| *T-3D* | *three days ago* |
| *T-15M* | *15 minutes ago* |
| *D-30D* | *30 days ago, 2400 hrs* |
| *-D +D* | *expands the existing time window one day at each end* |

*Example: TIME T-30H T*

*Name: $CO Resume processing subsequent to error*
*Use: $CO*

*Description: Recognized only in a batch job or when a PREAD macro is being used. Used to designate a point in the input command stream to resume processing when a preceding error has caused processing to terminate.*

*Name: $AB Abort (stop) processing subsequent to error*
*Use: $AB*

*Description: Recognized only in a batch job or when a PREAD macro is being used. Used to specify termination of the job if an error is encountered while processing according to a batch input stream.*