VIII.3.3-ADD/SUB ADD OR SUBTRACT TIME SERIES OPERATION

Identifier: ADD/SUB

Operation Number: 10

Parameter Array: The FORTRAN identifier used for the parameter array
for this Operation is PO. The contents of the PO array are:

Position	Type	Contents
1	I	Operation version number
2	I	Add/subtract indicator: 1 = add 0 = subtract
3-4	R	Internal identifier for time series B
5	R	Data type code for time series B
6	R	Time interval for time series B
7-8	R	Internal identifier for time series A
9	R	Data type code for time series A
10	I	Time interval for time series A
11	I	Carryover indicator: 0 = no carryover 1 = carryover needed
12	I	Negative result indicator: 0 = result cannot be negative 1 = result can be negative
13	I	Source of initial carryover indicator: 0 = default used 1 = value read from cards

Carryover Array: Carryover is only needed for this Operation if the
time interval of time series B is less than the time interval of time
series A. The FORTRAN identifier used for the carryover array is CO.
The contents of the CO array are:

Position	Contents
1	Previous value of time series A

Subroutine Names and Functions: The subroutines associated with this

Operation are as follows:

Subroutine	Function
PIN10	Input cards, check values and store information in PO and CO arrays
PRP10	Print information in the PO array
PRC10	Print information in the CO array
TAB10	Make entries into the Operations Table
EX10	Execute the Operation
FCHGDT	Change the time interval of the ordinate spacing of a time series of instantaneous values
PUC10	Output cards containing the parameter and carryover values
COX10	Perform carryover transfer

Subroutines PIN10, PRP10, PRC10, PUC10, and COX10 have the standard argument lists for these subroutines as given in Section VIII.4.3.

```
SUBROUTINE EX10 (PO,QZERO,QIN,QOUT,QT)

SUBROUTINE FADD (IA,IC,NG,IT,IOT,QZERO,QIN,QOUT,QT)
```

Function: Adds or subtracts two time series. If the time intervals
of the time series are not equal, subroutine FCHGDT is called before
the time series are added or subtracted.

   EX10 - gets control variables from the PO array

   FADD - gets control variables through the argument list

Argument List:

Variable	Input/ Output	Type	Dimension	Description
PO	Input	R*4	Variable	Parameters and other information

IA	Input	I*4	1	Add/subtract indicator:
				  0 = subtract
				  1 = add

IC	Input	I*4	1	Carryover indicator:
				  0 = no carryover
				  1 = needs carryover

NG	Input	I*4	1	Negative result indicator:
				  0 = result cannot be negative
				  1 = result can be negative

IT	Input	I*4		Time interval of time series A
IOT	Input	I*4	1	Time interval of time series B
QZERO	Both	R*4	1	Carryover value if needed
QIN	Input	R*4	Variable	Time series A data
QOUT	Input	R*4	Variable	Time series B data
QT	-	R*4	Variable	Working space for changing time intervals. QT has the same time interval as time series B.

SUBROUTINE FCHGDT (QIN,IDT,QOUT,IODT,QZERO)

Function: Changes the time interval of the ordinate spacing of a
time series containing instantaneous values. The time interval can
be increased or decreased.

Argument List:

| | Input/ | | | |
Variable	Output	Type	Dimension	Description
QIN	Input	R*4	Variable	Original time series data
IDT	Input	I*4	I	Original ordinate spacing in hours
QOUT	Output	R*4	Variable	Time series data after ordinate spacing has been changed
IODT	Input	I*4	1	New ordinate spacing in hours
QZERO	Input	R*4	1	Previous value of original time series. Only needed if IODT is less than IDT.

```
SUBROUTINE TAB10
                  (TO,LEFT,IUSET,NXT,LPO,PO,LCO,TS,MTS,NWORK,NDD,
                  LWORK,IDT)
```

<u>Function</u>: This is the Operations Table entry subroutine.

<u>Argument List</u>: The arguments for this subroutine are similar to the
arguments for the Operation table entry subroutines for other
Operations. A description of the arguments is contained in Section
VIII.4.2-TAB.

<u>Operation Table Array</u>: The contents of the TO array are:

<u>Position</u>	<u>Contents</u>
1	The number of this Operation
2	The location in the T array of the next Operation to be executed
3	The location of the parameter array for this Operation in the P array
4	The location of the carryover value in the C array: 0 = carryover not needed
5	Location of time series B data in the D array
6	Location of time series A data in the D array
7	Location of working space in the D array