1 SUMMARY

The subroutine **prints out in tabular form the contents of two single dimensioned arrays.** It can be used to **tabulate the values of a function** $y(x)$ and its argument.

The arrays are tabulated as a series of subtables with columns of pairs of numbers taken from corresponding elements in each array. As many columns as possible are fitted across the page and as many subtables are produced as are required to exhaust the arrays.

The user must specify the format types (F, E, or D), the number of significant figures to be printed for each array, and the column length of the subtables.

ATTRIBUTES — **Version:** 1.0.0. **Types:** OA03A; OA03AD. **Original date:** August 1985. **Origin:** M.J.Hopper, Harwell.

2 HOW TO USE THE PACKAGE

2.1 Argument list

The single precision version

        CALL OA03A(X,Y,M,NC,NSX,NSY,NF,H)

The double precision version

        CALL OA03AD(X,Y,M,NC,NSX,NSY,NF,H)

X   is a REAL (DOUBLE PRECISION in the D version) array containing the values to be printed down the left of each column. It is not altered.

Y   is a REAL (DOUBLE PRECISION in the D version) array containing the values to be printed down the right of each column. It is not altered.

M   is an INTEGER variable which should be set by the user to the number of elements in the arrays X and Y. It is not altered.

NC   is an INTEGER variable which must be set by the user to specify the number of rows required in each column. It is not altered.

NSX,NSY are INTEGER variables which must be set by the user to specify the number of significant figures to be printed from the X and Y values respectively. **Note** If an F format is specified the field width for the format is chosen to give the required significance in the maximum element of the array. NSX and NSY are not altered.

NF   is a CHARACTER variable containing two characters; the first defines the format type to be used for the X values and the second defines the format type for the Y values. NF is not altered.

H   is a CHARACTER*8 variable which must be set by the user to an 8 character header to be printed centrally over each Y column, or set to 8 blanks if no header is required. If the required header is less than 8 characters long H should be padded from either end with blanks with the extra blank on the right if the number is odd. It is not altered.

3 GENERAL INFORMATION

Use of common: None.

Other routines called directly: The private subroutines OA03B/BD and OA03C/CD are called.

Input/output: See section 4.

Restrictions: None.

4 METHOD

The number of columns is calculated assuming a maximum of 128 characters per line. The subroutine assumes a continuous output medium and does not use page throws or double spacing. Each sub-table requires three basic print operations:

1. print header line,
2. print NC rows of the sub-table,
3. print blank line.

The pattern is repeated for each sub-table. The last blank line is always printed.

5 EXAMPLE OF USE

As a simple example, the following code tabulates values of a function $y(x)$ in the range $1.0 \le x \le 1.1$, printing 5 significant figures for the y values.

```
      DOUBLE PRECISION X(21),Y(21)
      M=21
      NC=4
      NSX=3
      NSY=5
      CALL OA03AD(X,Y,M,NC,NSX,NSY,'FF','  Y(X)  ')
      STOP
      END
```

This produces the following output

```
          Y(X)                Y(X)                Y(X)
      1.00  1.0000     1.02  0.9888     1.04  0.9784
      1.00  0.9971     1.02  0.9862     1.04  0.9759
      1.01  0.9943     1.03  0.9835     1.05  0.9735
      1.01  0.9916     1.03  0.9810     1.05  0.9711

          Y(X)                Y(X)                Y(X)
      1.06  0.9687     1.08  0.9597     1.10  0.9514
      1.06  0.9664     1.08  0.9576
      1.07  0.9642     1.09  0.9555
      1.07  0.9619     1.09  0.9534
```

Note For the sake of brevity the page width has been reduced in this example.