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Sort Rows of a Matrix

SORTR re-arranges the row order of a matrix in such a way that the elements of a selected column are either in increasing or decreasing order as described. When these elements are equal, the rows are kept in their original order.

Structure:

SUBROUTINE subprogram
User Entry Names: SORTR, SORTI, SORTD
External References: VECMAN (F121), USWOP (V301) (not on all machines)

Usage:

For t = I (type INTEGER), t = R (type REAL), t = D (type DOUBLE PRECISION),

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CALL SORTt(MX,NC,NR,NCS)
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performs an ordering operation on the matrix MX of type t, dimensioned (NC,NR), using the NCS-th element of each row as ordering criterion.

The matrix MX is stored by rows, the first element of a row following immediately after the last element of the preceding row.

Obviously, $1 \leq |\mathtt{NCS}| \leq \mathtt{NC}$ is a condition. If this is not met or if $\mathtt{NR} \leq 1$, SORTX will do nothing.

If $\mathtt{NCS} > 0$, the subroutine re-orders the rows of MX in such a way that the NCS-th element of each row is greater than or equal to the NCS-th element of the preceding row. If $\mathtt{NCS} < 0$, the rows of MX are re-ordered in such a way that the NCS-th element of each row is smaller than or equal to the NCS-th element of the preceding row.

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