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Description

conj(Z) returns the elementwise complex conjugate of Z, that is, conj(a+bi) = a - bi. conj() may be used with real or complex matrices. If Z is real, Z is returned unmodified.

 $_conj(A)$ replaces A with conj(A). Coding $_conj(A)$ is equivalent to coding A = conj(A), except that less memory is used.

Syntax

numeric matrix conj (numeric matrix Z) void __conj (numeric matrix A)

Remarks and examples

Given $m \times n$ matrix Z, conj(Z) returns an $m \times n$ matrix; it does not return the transpose. To obtain the conjugate transpose matrix, also known as the adjoint matrix, adjugate matrix, Hermitian adjoin, or Hermitian transpose, code

Z'

See [M-2] op_transpose.

A matrix equal to its conjugate transpose is called Hermitian or self-adjoint, although in this manual, we often use the term symmetric.

Conformability

 $\begin{array}{c} \operatorname{conj}(Z): \\ Z: & r \times c \\ result: & r \times c \\ _\operatorname{conj}(A): \\ input: \\ A: & r \times c \\ output: \\ A: & r \times c \end{array}$

Diagnostics

conj(Z) returns a real matrix if Z is real and a complex matrix if Z is complex.

conj(Z), if Z is real, returns Z itself and not a copy. This makes conj() execute instantly when applied to real matrices.

 $_conj(A)$ does nothing if A is real (and hence, does not abort if A is a view).

Also see

- [M-5] _transpose() Transposition in place
- [M-4] Scalar Scalar mathematical functions

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