Title

conj( ) — Complex conjugate

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

conj(Z):

Z:	$r \times c$
result:	$r \times c$

_conj(A):

input:

A:	$r \times c$

output:

A:	$r \times c$

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

For suggested citations, see the FAQ on citing Stata documentation.