# Title

transposeonly() - Transposition without conjugation

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## Description

transposeonly(A) returns A with its rows and columns interchanged. When A is real, the actions of transposeonly(A) are indistinguishable from coding A'; see [M-2] op\_transpose. The returned result is the same, and the execution time is the same, too. When A is complex, however, transposeonly(A) is equivalent to coding conj(A'), but transposeonly() obtains the result more quickly.

transposeonly(A) interchanges the rows and columns of A in place—without use of additional memory—and returns the transposed (but not conjugated) result in A.

## **Syntax**

 numeric matrix
 transposeonly(numeric matrix A)

 void
 \_transposeonly(numeric matrix A)

## **Remarks and examples**

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transposeonly() is useful when you are coding in the programming, rather than the mathematical, sense. Say that you have two row vectors, a and b, and you want to place the two vectors together in a matrix R, and you want to turn them into column vectors. If a and b were certain to be real, you could just code

R = (a', b')

The above line, however, would result in not just the organization but also the values recorded in R changing if a or b were complex. The solution is to code

R = (transposeonly(a), transposeonly(b))

The above line will work for real or complex a and b. If you were concerned about memory consumption, you could instead code

```
R = (a \setminus b)
_transposeonly(R)
```

#### Conformability

```
transposeonly(A):

A: r \times c

result: c \times r

_transposeonly(A):

input:

A: r \times c

output:

A: c \times r
```

### **Diagnostics**

 $\_$ transposeonly(A) aborts with error if A is a view.

### Also see

[M-2] op\_transpose — Conjugate transpose operator

- [M-5] \_transpose() Transposition in place
- [M-4] Manipulation Matrix manipulation

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