

all() — Element comparisons

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Description

`all(L)` is equivalent to `sum(!L)==0` but is significantly faster.

`any(L)` is equivalent to `sum(L)!=0` but is slightly faster.

`allof(P, s)` returns 1 if every element of P equals s and returns 0 otherwise. `allof(P, s)` is faster and consumes less memory than the equivalent construction `all(P==s)`.

`anyof(P, s)` returns 1 if any element of P equals s and returns 0 otherwise. `anyof(P, s)` is faster and consumes less memory than the equivalent `any(P==s)`.

Syntax

real scalar `all(real matrix L)`

real scalar `any(real matrix L)`

real scalar `allof(transmorphic matrix P, transmorphic scalar s)`

real scalar `anyof(transmorphic matrix P, transmorphic scalar s)`

Remarks and examples

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These functions are fast, so their use is encouraged over alternative constructions.

`all()` and `any()` are typically used with logical expressions to detect special cases, such as

```
if (any(x < 0)) {
    ...
}
```

or

```
if (all(x >= 0)) {
    ...
}
```

`allof()` and `anyof()` are used to look for special values:

```
if (allof(x, 0)) {
    ...
}
```

or

```
if (anyof(x, 0)) {  
    ...  
}
```

Do not use `allof()` and `anyof()` to check for missing values—for example, `anyof(x, .)`—because to really check, you would have to check not only `.` but also `.a`, `.b`, `...`, `.z`. Instead use `missing()`; see [M-5] [missing\(\)](#).

Conformability

`all(L)`, `any(L)`:

L: $r \times c$
result: 1×1

`allof(P, s)`, `anyof(P, s)`:

P: $r \times c$
s: 1×1
result: 1×1

Diagnostics

`all(L)` and `any(L)` treat missing values in *L* as true.

`all(L)` and `any(L)` return 0 (false) if *L* is $r \times 0$, $0 \times c$, or 0×0 .

`allof(P, s)` and `anyof(P, s)` return 0 (false) if *P* is $r \times 0$, $0 \times c$, or 0×0 .

Also see

[M-4] [utility](#) — Matrix utility functions