

edittoint() — Edit matrix for roundoff error (integers)

Syntax Diagnostics	Description Also see	Remarks and examples	Conformability
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Syntax

```

numeric matrix   edittoint(numeric matrix Z, real scalar amt)
void             _edittoint(numeric matrix Z, real scalar amt)

numeric matrix   edittointtol(numeric matrix Z, real scalar tol)
void             _edittointtol(numeric matrix Z, real scalar tol)

```

Description

These edit functions set elements of matrices to integers that are close to integers.

`edittoint(Z, amt)` and `_edittoint(Z, amt)` set

$$Z_{ij} = \text{round}(Z_{ij}) \quad \text{if } |Z_{ij} - \text{round}(Z_{ij})| \leq |tol|$$

for Z real and set

$$\text{Re}(Z_{ij}) = \text{round}(\text{Re}(Z_{ij})) \quad \text{if } |\text{Re}(Z_{ij}) - \text{round}(\text{Re}(Z_{ij}))| \leq |tol|$$

$$\text{Im}(Z_{ij}) = \text{round}(\text{Im}(Z_{ij})) \quad \text{if } |\text{Im}(Z_{ij}) - \text{round}(\text{Im}(Z_{ij}))| \leq |tol|$$

for Z complex, where in both cases

$$tol = \text{abs}(amt) * \text{epsilon}(\text{sum}(\text{abs}(Z)) / (\text{rows}(Z) * \text{cols}(Z)))$$

`edittoint()` leaves Z unchanged and returns the edited matrix. `_edittoint()` edits Z in place.

`edittointtol(Z, tol)` and `_edittointtol(Z, tol)` do the same thing, except that tol is specified directly.

Remarks and examples

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These functions mirror the `edittozero()` functions documented in [M-5] [edittozero\(\)](#), except that, rather than solely resetting to zero values close to zero, they reset to integer values close to integers.

See [M-5] [edittozero\(\)](#). Whereas use of the functions documented there is recommended, use of the functions documented here generally is not. Although zeros commonly arise in real problems so that there is reason to suspect small numbers would be zero but for roundoff error, integers arise more rarely.

If you have reason to believe that integer values are likely, then by all means use these functions.

Conformability

`edittoint(Z, amt):`

Z: $r \times c$
amt: 1×1
result: $r \times c$

`_edittoint(Z, amt):`

input:

Z: $r \times c$
amt: 1×1

output:

Z: $r \times c$

`edittointtol(Z, tol):`

Z: $r \times c$
tol: 1×1
result: $r \times c$

`_edittointtol(Z, tol):`

input:

Z: $r \times c$
tol: 1×1

output:

Z: $r \times c$

Diagnostics

None.

Also see

[M-5] [edittozero\(\)](#) — Edit matrix for roundoff error (zeros)

[M-4] [manipulation](#) — Matrix manipulation