

Package ‘spam64’

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Type Package

Title 64-Bit Extension of the SPARse Matrix R Package 'spam'

Version 2.5-1

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Description Provides the Fortran code of the R package 'spam' with 64-bit integers. Loading this package together with the R package spam enables the sparse matrix class spam to handle huge sparse matrices with more than $2^{31}-1$ non-zero elements. Documentation is provided in Gerber, Moesinger and Furrer (2017) <doi:10.1016/j.cageo.2016.11.015>.

Suggests spam (== 2.5-1)

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URL <https://git.math.uzh.ch/reinhard.furrer/spam>

NeedsCompilation yes

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spam64-package *64-bit extension for the SPARse Matrix Package spam*

Description

Provides the Fortran code of the R package **spam** with 64-bit integers. Loading this package together with the R package **spam** enables the sparse matrix class `spam` to handle huge sparse matrices with more than $2^{31}-1$ non-zero elements.

Note

It is intended to use **spam64** together with **spam**. To avoid issues on 32-bit platforms we did not link the packages **spam** and **spam64** using dependencies.

Some **spam64** functions have been successfully tested with 64-bit matrices. However, we expect that some functions of **spam** do not work with 64-bit matrices (yet). Please do not hesitate to contact us via email or <https://git.math.uzh.ch/reinhard.furrer/spam> in case you would like to use a `spam` function with 64-bit matrices that is not working properly in the current version.

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References

F. Gerber, K. Moesinger, R. Furrer (2017), Extending R packages to support 64-bit compiled code: An illustration with `spam64` and GIMMS NDVI3g data, *Computer & Geoscience* 104, 109-119, <https://doi.org/10.1016/j.cageo.2016.11.015>.

`spam64` uses the R package `dotCall64` to call compiled code: F. Gerber, K. Moesinger, R. Furrer (2017), `dotCall64`: An efficient interface to compiled C/C++ and Fortran code supporting long vectors, <https://arxiv.org/abs/1702.08188>.

Examples

```
## Not run:
library("spam")
library("spam64")
s1 <- spam(1, ncol=2^30)      # 32-bit matrix
s1
```

```
s2 <- cbind(s1, s1)      # 64-bit matrix
s2
s3 <- spam(1, ncol=2^31) # 64-bit matrix
s3
## End(Not run)
```

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