

Package ‘alabaster.bumpy’

March 13, 2025

Title Save and Load BumpyMatrices to/from file

Version 1.7.0

Date 2024-01-01

Description Save BumpyMatrix objects into file artifacts, and load them back into memory. This is a more portable alternative to serialization of such objects into RDS files. Each artifact is associated with metadata for further interpretation; downstream applications can enrich this metadata with context-specific properties.

License MIT + file LICENSE

Depends BumpyMatrix, alabaster.base

Imports methods, rhdf5, Matrix, BiocGenerics, S4Vectors, IRanges

Suggests BiocStyle, rmarkdown, knitr, testthat, jsonlite

VignetteBuilder knitr

RoxygenNote 7.2.3

biocViews DataImport, DataRepresentation

git_url <https://git.bioconductor.org/packages/alabaster.bumpy>

git_branch devel

git_last_commit ab0a1f1

git_last_commit_date 2024-10-29

Repository Bioconductor 3.21

Date/Publication 2025-03-13

Author Aaron Lun [cre, aut]

Maintainer Aaron Lun <infinite.monkeys.with.keyboards@gmail.com>

Contents

readBumpyDataFrameMatrix	2
saveObject,BumpyDataFrameMatrix-method	3
useBumpyHDF5	4

Index	5
--------------	----------

readBumpyDataFrameMatrix

Read a BumpyDataFrameMatrix from disk

Description

Read a [BumpyDataFrameMatrix](#) from its on-disk representation.

Usage

```
readBumpyDataFrameMatrix(path, metadata, ...)
```

Arguments

path	String containing a path to a directory, itself created using the saveObject method for BumpyDataFrameMatrix objects.
metadata	Named list of metadata for this object, see readObjectFile for details.
...	Further arguments passed to internal altReadObject calls.

Value

A [BumpyDataFrameMatrix](#) object.

Author(s)

Aaron Lun

Examples

```
# Mocking up a BumpyMatrix.
library(BumpyMatrix)
library(S4Vectors)
df <- DataFrame(x=runif(100), y=runif(100))
f <- factor(sample(letters[1:20], nrow(df), replace=TRUE), letters[1:20])
out <- S4Vectors::split(df, f)
mat <- BumpyMatrix(out, c(5, 4))

# Saving it:
tmp <- tempfile()
saveObject(mat, tmp)

# Reading it:
readBumpyDataFrameMatrix(tmp)
```

`saveObject,BumpyDataFrameMatrix-method`*Save a BumpyDataFrameMatrix to disk*

Description

Save a [BumpyDataFrameMatrix](#) to its on-disk representation.

Usage

```
## S4 method for signature 'BumpyDataFrameMatrix'  
saveObject(x, path, ...)
```

Arguments

<code>x</code>	A BumpyDataFrameMatrix object.
<code>path</code>	String containing the path to a directory in which to save <code>x</code> .
<code>...</code>	Further arguments to pass to specific methods.

Value

`x` is saved into `path` and `NULL` is invisibly returned.

Author(s)

Aaron Lun

Examples

```
# Mocking up a BumpyMatrix.  
library(BumpyMatrix)  
library(S4Vectors)  
df <- DataFrame(x=runif(100), y=runif(100))  
f <- factor(sample(letters[1:20], nrow(df), replace=TRUE), letters[1:20])  
out <- S4Vectors::split(df, f)  
mat <- BumpyMatrix(out, c(5, 4))  
  
# Saving it:  
tmp <- tempfile()  
saveObject(mat, tmp)
```

`useBumpyHDF5`*Save BumpyMatrix data to HDF5*

Description

Use HDF5 for the underlying data frame, i.e., obtained after [unlisting](#) the `BumpyMatrix`. This is less intuitive than a CSV but preserves the precision of floating-point numbers.

Usage

```
useBumpyHDF5(use)
```

Arguments

`use` Logical scalar indicating whether to save in HDF5.

Value

If `use` is missing, a logical scalar is returned indicating whether data should be saved in HDF5.

If `use` is provided, it is used to set the corresponding flag globally. The previous value of the flag is returned invisibly.

Examples

```
useBumpyHDF5()  
  
old <- useBumpyHDF5(FALSE)  
useBumpyHDF5()  
  
# Setting it back.  
useBumpyHDF5(old)
```

Index

`altReadObject`, 2

`BumpyDataFrameMatrix`, 2, 3

`BumpyMatrix`, 4

`loadBumpyDataFrameMatrix`

(`readBumpyDataFrameMatrix`), 2

`readBumpyDataFrameMatrix`, 2

`readObjectFile`, 2

`saveObject`, 2

`saveObject`, `BumpyDataFrameMatrix`-method,

3

`stageObject`, `BumpyDataFrameMatrix`-method

(`saveObject`, `BumpyDataFrameMatrix`-method),

3

`unlist`, 4

`useBumpyHDF5`, 4