

# Package ‘alabaster.bumpy’

February 3, 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** 2025-02-03

**Author** Aaron Lun [cre, aut]

**Maintainer** Aaron Lun <[infinite.monkeys.with.keyboards@gmail.com](mailto:infinite.monkeys.with.keyboards@gmail.com)>

## Contents

readBumpyDataFrameMatrix . . . . .	2
saveObject,BumpyDataFrameMatrix-method . . . . .	3
useBumpyHDF5 . . . . .	4

<b>Index</b>	<b>5</b>
--------------	----------

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 <a href="#">saveObject</a> method for <a href="#">BumpyDataFrameMatrix</a> objects.
metadata	Named list of metadata for this object, see <a href="#">readObjectFile</a> for details.
...	Further arguments passed to internal <a href="#">altReadObject</a> 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 <a href="#">BumpyDataFrameMatrix</a> 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](#)