

# Package ‘aakmisc’

January 17, 2017

**Type** Package

**Title** Miscellany for the King Lab

**Version** 0.22-3

**Date** 2017-01-17

**Maintainer** Aaron A. King <kingaa@umich.edu>

**Description** Miscellaneous tools, collected in one place.

**URL** <http://github.com/kingaa/aakmisc>

**Contact** kingaa at umich dot edu

**BugReports** <http://github.com/kingaa/aakmisc/issues>

**Depends** R(>= 3.0.0), plyr, reshape2, ggplot2(>= 1.0.1.9003), grid, magrittr

**Imports** methods, curl, DBI, RPostgreSQL

**License** GPL(>=3)

**LazyLoad** true

**LazyData** true

**Collate** aaa.R db.R tunnel.R random.R plotMatrix.R scinot.R lazy\_load.R

## R topics documented:

dbtools . . . . .	2
Lazy loading of knitr caches . . . . .	4
plotMatrix . . . . .	5
random . . . . .	6
scinot . . . . .	7
<b>Index</b>	<b>8</b>

**Description**

Interface with project databases.

**Usage**

```

getMLEs(host = getOption("aakmisc.dbhost", "localhost"),
        dbname = getOption("aakmisc.dbname", NULL),
        port = getOption("aakmisc.port", 5432),
        user = getOption("aakmisc.user", NULL),
        ...)
recMLEs(mle, host = getOption("aakmisc.dbhost", "localhost"),
        dbname = getOption("aakmisc.dbname", NULL),
        port = getOption("aakmisc.port", 5432),
        user = getOption("aakmisc.user", NULL),
        ...)
listScripts(host = getOption("aakmisc.dbhost", "localhost"),
            dbname = getOption("aakmisc.dbname", NULL),
            port = getOption("aakmisc.port", 5432),
            user = getOption("aakmisc.user", NULL),
            ...)
recScript(files, host = getOption("aakmisc.dbhost", "localhost"),
          dbname = getOption("aakmisc.dbname", NULL),
          port = getOption("aakmisc.port", 5432),
          user = getOption("aakmisc.user", NULL),
          ...)
dropScript(script, host = getOption("aakmisc.dbhost", "localhost"),
           dbname = getOption("aakmisc.dbname", NULL),
           port = getOption("aakmisc.port", 5432),
           user = getOption("aakmisc.user", NULL),
           ...)
catScript(script, file = "", host = getOption("aakmisc.dbhost", "localhost"),
          dbname = getOption("aakmisc.dbname", NULL),
          port = getOption("aakmisc.port", 5432),
          user = getOption("aakmisc.user", NULL),
          ...)
getQuery(statement,
        host = getOption("aakmisc.dbhost", "localhost"),
        dbname = getOption("aakmisc.dbname", NULL),
        port = getOption("aakmisc.port", 5432),
        user = getOption("aakmisc.user", NULL),
        ...)
writeDBTable(name, value, overwrite = FALSE, append = FALSE,
            row.names = FALSE,

```

```

        host = getOption("aakmisc.dbhost","localhost"),
        dbname = getOption("aakmisc.dbname",NULL),
        port = getOption("aakmisc.port",5432),
        user = getOption("aakmisc.user",NULL),
        ...)
startTunnel(port = NULL,
            remotehost = getOption("aakmisc.remotehost",NULL),
            sleep = 5)
stopTunnel(..., pid = getOption("aakmisc.tunnelpid",NULL))

```

### Arguments

host	Hostname on which to connect to the PostgreSQL server.
dbname	Name of PostgreSQL database.
port	Port on which to connect to PostgreSQL database. If NULL, a random port number will be used.
user	Username to use in connecting to PostgreSQL database. If NULL, Sys.getenv("USER") will be used.
mle	A data-frame of MLEs to be recorded.
files	Files containing R scripts to be recorded.
script	Name of script.
file	File to which the script will be written. See <a href="#">cat</a> .
statement	SQL statement passed to <a href="#">dbGetQuery</a> .
name, value	Name and contents of table to create.
overwrite, append, row.names	See <a href="#">dbWriteTable</a> .
remotehost	Hostname of PostgreSQL server. An ssh tunnel to this host will be created.
pid	ID of ssh tunnel process. Set automatically by startTunnel.
sleep	Time in seconds to sleep after initiating the ssh tunnel.
...	Additional arguments will be passed to <a href="#">dbConnect</a> .

### Author(s)

Aaron A. King <kingaa at umich dot edu>

### Examples

```

## Not run:
startTunnel()
listScripts()
stopTunnel()

## End(Not run)

```

---

Lazy loading of knitr caches

*Functions for lazy-loading knitr caches.*

---

## Description

These functions are helpful for loading cached chunks into an interactive R session.

Use `lazyload_cache_dir` to load a whole directory of cached objects.

Use `lazyload_cache_labels` to load an explicit set of cached chunks.

## Usage

```
lazyload_cache_dir(path = "./cache", envir = parent.frame(), ask = FALSE,  
                   verbose = getOption("verbose",FALSE), full.names = TRUE, ...)  
lazyload_cache_labels(labels, path = "./cache/", envir = parent.frame(),  
                      verbose = getOption("verbose",FALSE), filter,  
                      full.names = TRUE, ...)
```

## Arguments

<code>path</code>	the path to the cache directory
<code>labels</code>	character vector; chunk labels to load
<code>envir</code>	the environment to load the objects into
<code>ask</code>	if TRUE, interactively ask whether to load each database discovered in path
<code>verbose</code>	if TRUE, display the names of chunk labels being loaded
<code>full.names</code>	use the full name, i.e., include the path, for the chunk label? This argument is passed to <code>list.files</code> .
<code>filter</code>	optional function; passed to <code>lazyLoad</code> . When called on a character vector of object names, this function should return a logical vector: objects for which this is TRUE will be loaded.
<code>...</code>	additional arguments passed to <code>list.files</code>

## Value

Both functions return NULL, invisibly.

## Author(s)

Peter DeWitt (<https://github.com/dewittpe>).

plotMatrix

*A scatterplot matrix with densities on the diagonal.***Description**

A special scatterplot matrix.

**Usage**

```
## S3 method for class 'data.frame'
plotMatrix(data, marg.exp = 0.02, labels = names(data),
            alpha = 1, pch = 16, size = unit(2,"mm"), ...)
## S3 method for class 'list'
plotMatrix(data, marg.exp = 0.02, labels = names(data),
            alpha = 1, pch = 16, size = unit(2,"mm"), ...)
## S3 method for class 'aakplot'
print(x, newpage = is.null(vp), vp = NULL, ...)
```

**Arguments**

data	Data to plot.
marg.exp	Fraction by which to expand the plot at the margins.
labels	Names of variables plotted.
alpha, pch, size	Refer to the plotted points in the scatterplots.
...	optional arguments, passed to <a href="#">hist</a> .
x	plotMatrix object to display.
newpage	logical; if TRUE, <code>grid.newpage()</code> will be called before the graphics are drawn.
vp	viewport to use. See <a href="#">viewport</a> .

**Author(s)**

Aaron A. King <kingaa at umich dot edu>

**Examples**

```
## Not run:
x <- data.frame(a=rexp(n=1000,rate=1/3),b=rnorm(1000))
mutate(x,c=a+b^2,d=a-b^3) -> x

print(plotMatrix(x,alpha=0.2))

g <- plotMatrix(
  x[-2],
  labels=c(
    expression(alpha),
```

```

        expression(beta),
        expression(phi)
    ),
    alpha=0.3
)
print(g)

print(plotMatrix(as.list(x),alpha=0.2,breaks='scott'))

## End(Not run)

```

---

random

*Functions for generating and working with truly random integers.*


---

## Description

Functions for generating and working with truly random seeds.

## Usage

```

random.org(n = 10, rnd = "new")
urandom(n = 10)
rngControl(expr, seed = NULL)
rngSeeds(n, seed = NULL)

```

## Arguments

n	Number of integers required.
rnd	random.org parameter
expr	Expression to be evaluated with RNG control.
seed	RNG seed.

## Author(s)

Aaron A. King <kingaa at umich dot edu>

## References

<http://www.random.org>

## Examples

```

## Not run:
random.org(n=5)
seed <- urandom(n=1)
seeds <- rngSeeds(5,seed=seed)
set.seed(seed)
runif(5)

```

```
rngControl(runif(5),seed=seed[1])
rngControl(runif(5),seed=seed[1])
runif(5)
set.seed(seed)
runif(5)
runif(5)

## End(Not run)
```

---

scinot

*Scientific notation.*

---

## Description

Format using scientific notation.

## Usage

```
scinot(x, digits = 2, format = c("expression","latex","math"),
       simplify = FALSE)
```

## Arguments

x	Number to format.
digits	Number of significant digits in mantissa.
format	Format specification. type="expression" results in an R expression. type="latex" results in a latex expression. type="math" is like "latex" but wraps the text in "\$".
simplify	logical. If simplify=TRUE, then $1 \times 10^n$ is simplified to $10^n$ .

## Author(s)

Aaron A. King <kingaa at umich dot edu>

## Examples

```
x <- c(0.0309595,8577676.441)
scinot(x[2],4)
scinot(x[1],2,"latex")
sapply(x,scinot,digits=3,format='math')
```

# Index

## \*Topic **programming**

    Lazy loading of knitr caches, [4](#)

cat, [3](#)

catScript (dbtools), [2](#)

dbConnect, [3](#)

dbGetQuery, [3](#)

dbtools, [2](#)

dbWriteTable, [3](#)

dropScript (dbtools), [2](#)

getMLEs (dbtools), [2](#)

getQuery (dbtools), [2](#)

hist, [5](#)

Lazy loading of knitr caches, [4](#)

lazyLoad, [4](#)

lazyload\_cache\_dir (Lazy loading of  
    knitr caches), [4](#)

lazyload\_cache\_labels (Lazy loading of  
    knitr caches), [4](#)

list.files, [4](#)

listScripts (dbtools), [2](#)

plotMatrix, [5](#)

print.aakplot (plotMatrix), [5](#)

random, [6](#)

recMLEs (dbtools), [2](#)

recScript (dbtools), [2](#)

rngControl (random), [6](#)

rngSeeds (random), [6](#)

scinot, [7](#)

startTunnel (dbtools), [2](#)

stopTunnel (dbtools), [2](#)

urandom (random), [6](#)

viewport, [5](#)

wroteDBTable (dbtools), [2](#)