# arrayQualityMetrics

**November 11, 2009**

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aqm.boxplot

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Description

aqm.boxplot performs boxplots, outlier detection from it and formats the output for aqm.plot usage.

Usage

aqm.boxplot(expressionset, dataprep, intgroup = "Covariate", grouprep = FALSE, ...)

Arguments

expressionset
  Same input as for the function arrayQualityMetrics
dataprep
  An object of class aqmobj.prepdata
intgroup
  Same input as for the function arrayQualityMetrics
grouprep
  Same input as for the function arrayQualityMetrics
...
  Any arguments to bwplot

Details

See the aqm.prepdata help or the aqm Vignette for example of this object.

Value

An object of class aqmobj.box.

Author(s)

Audrey Kauffmann <audrey@ebi.ac.uk>

See Also

aqm.prepdata, aqmobj.prepdata, aqmobj.box
aqm.density

Description

aqm.density performs density curves, outlier detection from it and formats the output for aqm.plot usage.

Usage

aqm.density(expressionset, dataprep, intgroup = "Covariate", grouprep = FALSE, ...)

Arguments

expressionset  
  Same input as for the function arrayQualityMetrics
dataprep  
  An object of class aqmobj.prepdata
intgroup  
  Same input as for the function arrayQualityMetrics
grouprep  
  Same input as for the function arrayQualityMetrics
...
  Any arguments to xyplot

Details

See the aqm.prepdata help or the aqm Vignette for example of this object.

Value

An object of class aqmobj.dens.

Author(s)

Audrey Kauffmann <audrey@ebi.ac.uk>

See Also

aqm.prepdata, aqmobj.prepdata, aqmobj.dens

aqm.heatmap

Description

aqm.heatmap performs a dendrogram of the distances between arrays, outlier detection from it and formats the output for aqm.plot usage.

Usage

aqm.heatmap(expressionset, dataprep, intgroup = "Covariate", ...)

aqm.maplot

Arguments

expressionset
  Same input as for the function arrayQualityMetrics
dataprep
  An object of class aqmobj.prepdata
intgroup
  Same input as for the function arrayQualityMetrics
...
  Any arguments to levelplot

Details

See the aqm.prepdata help or the aqm Vignette for example of this object.

Value

An object of class aqmobj.heat.

Author(s)

Audrey Kauffmann <audrey@ebi.ac.uk>

See Also

aqm.prepdata, aqmobj.prepdata, aqmobj.heat

Description

aqm.maplot performs MA-plots, outlier detection from it and formats the output for aqm.plot usage.

Usage

aqm.maplot(dataprep, ...)

Arguments

dataprep
  An object of class aqmobj.prepdata
...
  Any arguments to panel.smoothScatter

Details

See the aqm.prepdata help or the aqm Vignette for example of this object.

Value

An object of class aqmobj.ma.

Author(s)

Audrey Kauffmann <audrey@ebi.ac.uk>
**aqm.meansd**

See Also

```
aqm.prepdata, aqmobj.prepdata, aqmobj.ma
```

---

**aqm.meansd** *Performs Mean/SD plot on aqmobj.prepdata objects.*

---

**Description**

`aqm.meansd` performs Mean/SD plot, and formats the output for `aqm.plot` usage.

**Usage**

```
aqm.meansd(dataprep, ...)
```

**Arguments**

- `dataprep` An object of class `aqmobj.prepdata`
- `...` Any arguments to `meanSdPlot`

**Details**

See the `aqm.prepdata` help or the `aqm` Vignette for example of this object.

**Value**

An object of class `aqmobj.msd`.

**Author(s)**

Audrey Kauffmann <audrey@ebi.ac.uk>

**See Also**

```
aqm.prepdata, aqmobj.prepdata, aqmobj.msd
```

---

**aqm.nuse** *Performs NUSE plot on aqmobj.prepaffy objects.*

---

**Description**

`aqm.nuse` performs NUSE boxplots and outlier detection from it and formats the output for `aqm.plot` usage.

**Usage**

```
aqm.nuse(affyproc, ...)
```
Arguments

affyproc An object of class aqmobj.prepaffy
... Any arguments to boxplot

Details

See the aqm.prepaffy help or the aqm Vignette for example of this object.

Value

An object of class aqmobj.nuse

Author(s)

Audrey Kauffmann <audrey@ebi.ac.uk>

See Also

aqm.prepaffy, aqmobj.prepaffy, aqmobj.nuse

aqmobj.box-class

Class to contain data generated from aqm.boxplot.

Description

Class to contain data generated from aqm.boxplot.

Details

See the aqm.prepdata help or the aqm Vignette for example of this object.

Slots

plot: An object of class trellis.object if one channel arrays and a list of trellis.object if several channels arrays.
type: A character string with a name for the section the plot belongs to in the report.
title: A character string with the title of the plot to be written in the report.
legend: A character string with the legend of the plot to be written in the report.
scores: A numeric for each array corresponding to the scores assessed from the plot.
outliers: List or integer of the arrays that are outliers using boxplot.stats on the scores.
shape: A character "square" or "rect" depending on the aspect ratio desired in the report.

Author(s)

Audrey Kauffmann <audrey@ebi.ac.uk>

See Also

aqm.boxplot, aqm.plot
\texttt{aqmobj.dens-class}  \hspace{1cm} \textit{Class to contain data generated from aqm.density.}

\section*{Description}
Class to contain data generated from aqm.density.

\section*{Details}
See the aqm.prepdata help or the aqm Vignette for example of this object.

\section*{Slots}
\begin{itemize}
\item \texttt{plot}: An object of class \texttt{trellis.object} if one channel arrays and a list of \texttt{trellis.object} if several channels arrays.
\item \texttt{type}: A character string with a name for the section the plot belongs to in the report.
\item \texttt{title}: A character string with the title of the plot to be written in the report.
\item \texttt{legend}: A character string with the legend of the plot to be written in the report.
\item \texttt{shape}: A character "square" or "rect" depending on the aspect ratio desired in the report.
\end{itemize}

\section*{Author(s)}
Audrey Kauffmann \texttt{<audrey@ebi.ac.uk>}

\section*{See Also}
aqm.density, aqm.plot

\texttt{aqmobj.heat-class}  \hspace{1cm} \textit{Class to contain data generated from aqm.heatmap.}

\section*{Description}
Class to contain data generated from aqm.heatmap.

\section*{Details}
See the aqm.prepdata help or the aqm Vignette for example of this object.

\section*{Slots}
\begin{itemize}
\item \texttt{plot}: An object of class \texttt{trellis.object}.
\item \texttt{type}: A character string with a name for the section the plot belongs to in the report.
\item \texttt{title}: A character string with the title of the plot to be written in the report.
\item \texttt{legend}: A character string with the legend of the plot to be written in the report.
\item \texttt{scores}: A numeric for each array corresponding to the scores assessed from the plot.
\item \texttt{outliers}: List or integer of the arrays that are outliers using boxplot.stats on the scores.
\item \texttt{shape}: A character "square" or "rect" depending on the aspect ratio desired in the report.
\end{itemize}
Author(s)

Audrey Kauffmann <audrey@ebi.ac.uk>

See Also

aqm.heatmap, aqm.plot.

---

**Description**

Class to contain data generated from aqm.maplot.

**Details**

See the aqm.prepdata help or the aqm Vignette for example of this object.

**Slots**

- **plot**: An object of class `trellis.object`.
- **type**: A character string with a name for the section the plot belongs to in the report.
- **title**: A character string with the title of the plot to be written in the report.
- **legend**: A character string with the legend of the plot to be written in the report.
- **scores**: A numeric for each array corresponding to the scores assessed from the plot.
- **outliers**: List or integer of the arrays that are outliers using boxplot.stats on the scores.
- **shape**: A character "square" or "rect" depending on the aspect ratio desired in the report.

Author(s)

Audrey Kauffmann <audrey@ebi.ac.uk>

See Also

aqm.maplot, aqm.plot
aqmobj.msd-class  Class to contain data generated from aqm.meansd.

Description

Class to contain data generated from aqm.meansd.

Details

See the aqm.prepdata help or the aqm Vignette for example of this object.

Slots

plot: A matrix to be represented calling the MeanSdPlot function.
type: A character string with a name for the section the plot belongs to in the report.
title: A character string with the title of the plot to be written in the report.
legend: A character string with the legend of the plot to be written in the report.
shape: A character "square" or "rect" depending on the aspect ratio desired in the report.

Author(s)

Audrey Kauffmann <audrey@ebi.ac.uk>

See Also

aqm.meansd, aqm.plot

aqmobj.nuse-class  Class to contain data generated from aqm.nuse.

Description

Class to contain data generated from aqm.nuse.

Details

See the aqm.prepaffy help or the aqm Vignette for example of this object.

Slots

plot: A matrix to be represented calling the aqm.plot function.
type: A character string with a name for the section the plot belongs to in the report.
title: A character string with the title of the plot to be written in the report.
legend: A character string with the legend of the plot to be written in the report.
scores: A numeric for each array corresponding to the scores assessed from the plot.
outliers: List or integer of the arrays that are outliers using boxplot.stats on the scores.
shape: A character "square" or "rect" depending on the aspect ratio desired in the report.
Author(s)
Audrey Kauffmann <audrey@ebi.ac.uk>

See Also
aqm.nuse, aqm.plot

aqmobj.pca-class  Class to contain data generated from aqm.pca.

Description
Class to contain data generated from aqm.pca.

Details
See the aqm.prepdata help or the aqm Vignette for example of this object.

Slots

- **plot**: An object of class `trellis.object`.
- **type**: A character string with a name for the section the plot belongs to in the report.
- **title**: A character string with the title of the plot to be written in the report.
- **legend**: A character string with the legend of the plot to be written in the report.
- **shape**: A character "square" or "rect" depending on the aspect ratio desired in the report.

Author(s)
Audrey Kauffmann <audrey@ebi.ac.uk>

See Also
aqm.pca, aqm.plot.

aqmobj.pmmm-class  Class to contain data generated from aqm.pmmm.

Description
Class to contain data generated from aqm.pmmm.

Details
See the aqm.pmmm help or the aqm Vignette for example of this object.
Slots

- **plot**: A list to be represented calling the `aqm.plot` function.
- **type**: A character string with a name for the section the plot belongs to in the report.
- **title**: A character string with the title of the plot to be written in the report.
- **legend**: A character string with the legend of the plot to be written in the report.
- **shape**: A character "square" or "rect" depending on the aspect ratio desired in the report.

Author(s)

Audrey Kauffmann <audrey@ebi.ac.uk>

See Also

`aqm.pmmm`, `aqm.plot`
aqmobj.prepdata-class

Class to contain data generated from aqm.prepdata.

Description

Container for the output of `aqm.prepdata` and for the input of the aqm functions.

Details

See the aqm.prepdata help or the aqm Vignette for example of this object.

Slots

- **M**: A matrix of the M values (log-ratio). The log-ratio is computed with the second channel being the median of the intensities across arrays in the case of one channel arrays.
- **A**: A matrix of the A values. The A value is the mean of the two intensities. The second channel is computed as for the M values in the case of one channel arrays.
- **dat**: A matrix with the log-ratio if two channels or the intensities if one channel.
- **rc**: A matrix with the red channel intensities in the case of two channels arrays.
- **gc**: A matrix with the green channel intensities in the case of two channels arrays.
- **rcb**: A matrix with the red channel background intensities if two channels arrays and if available.
- **gcb**: A matrix with the green channel background intensities if two channels arrays and if available.
- **outM**: The distance between each pairs of arrays, computed using `dist2` from the `genefilter` package.
- **sN**: Integers numbering the arrays to be used to label the plots.
- **numArrays**: An integer giving the number of arrays.
- **nchannels**: A numeric giving the number of channels.
- **logtransformed**: A logical telling if the data have been log transformed by the function aqm.prepdata.
- **classori**: A character string of the class of the object that was given as an input of the aqm.prepdata function.

Author(s)

Audrey Kauffmann <audrey@ebi.ac.uk>

See Also

`aqm.prepdata, aqm.boxplot, aqm.density, aqm.heatmap, aqm.maplot, aqm.meansd, aqm.probesmap, aqm.spatial, aqm.spatialbg`
aqmobj.probesmap-class

Class to contain data generated from aqm.probesmap.

Description

Class to contain data generated from aqm.probesmap.

Details

See the aqm.prepdata help or the aqm Vignette for example of this object.

Slots

- **plot**: An object of class `trellis.object`.
- **type**: A character string with a name for the section the plot belongs to in the report.
- **title**: A character string with the title of the plot to be written in the report.
- **legend**: A character string with the legend of the plot to be written in the report.
- **shape**: A character “square” or ”rect” depending on the aspect ratio desired in the report.

Author(s)

Audrey Kauffmann <audrey@ebi.ac.uk>

See Also

aqm.probesmap, aqm.plot

aqmobj.qcs-class

Class to contain data generated from aqm.qcs.

Description

Class to contain data generated from aqm.qcs.

Details

See the aqm.qcstats help or the aqm Vignette for example of this object.

Slots

- **plot**: An object of class `trellis.object`.
- **type**: A character string with a name for the section the plot belongs to in the report.
- **title**: A character string with the title of the plot to be written in the report.
- **legend**: A character string with the legend of the plot to be written in the report.
- **shape**: A character “square” or ”rect” depending on the aspect ratio desired in the report.
Author(s)

Audrey Kauffmann <audrey@ebi.ac.uk>

See Also

aqm.qcstats, aqm.plot

---

**aqmobj.rle-class**

Class to contain data generated from aqm.rle.

Description

Class to contain data generated from aqm.rle.

Details

See the aqm.prepaffy help or the aqm Vignette for example of this object.

Slots

- **plot**: An object of class `trellis.object`
- **type**: A character string with a name for the section the plot belongs to in the report.
- **title**: A character string with the title of the plot to be written in the report.
- **legend**: A character string with the legend of the plot to be written in the report.
- **scores**: A numeric for each array corresponding to the scores assessed from the plot.
- **outliers**: List or integer of the arrays that are outliers using boxplot.stats on the scores.
- **shape**: A character "square" or "rect" depending on the aspect ratio desired in the report.

Author(s)

Audrey Kauffmann <audrey@ebi.ac.uk>

See Also

aqm.rle, aqm.plot

aqmobj.rnadeg-class

Class to contain data generated from aqm.rnadegplot.

Description

Class to contain data generated from aqm.rnadegplot.

Details

See the aqm.prepdata help or the aqm Vignette for example of this object.

Slots

plot: A list to be represented calling the plotAffyRNAdeg function.
type: A character string with a name for the section the plot belongs to in the report.
title: A character string with the title of the plot to be written in the report.
legend: A character string with the legend of the plot to be written in the report.
shape: A character "square" or "rect" depending on the aspect ratio desired in the report.

Author(s)

Audrey Kauffmann <audrey@ebi.ac.uk>

See Also

aqm.rnadeg, aqm.plot

aqmobj.spatialbg-class

Class to contain data generated from aqm.spatialbg.

Description

Class to contain data generated from aqm.spatialbg.

Details

See the aqm.prepdata help or the aqm Vignette for example of this object.

Slots

plot: An object of class trellis.object if one channel arrays and a list of trellis.object if several channels arrays.
type: A character string with a name for the section the plot belongs to in the report.
title: A character string with the title of the plot to be written in the report.
legend: A character string with the legend of the plot to be written in the report.
shape: A character "square" or "rect" depending on the aspect ratio desired in the report.
aqmobj.spatial-class

Class to contain data generated from aqm.spatial.

Description

Class to contain data generated from aqm.spatial.

Details

See the aqm.prepdata help or the aqm Vignette for example of this object.

Slots

- **plot**: An object of class `trellis.object` if one channel arrays and a list of trellis.object if several channels arrays.
- **type**: A character string with a name for the section the plot belongs to in the report.
- **title**: A character string with the title of the plot to be written in the report.
- **legend**: A character string with the legend of the plot to be written in the report.
- **scores**: A numeric for each array corresponding to the scores assessed from the plot.
- **outliers**: List or integer of the arrays that are outliers using boxplot.stats on the scores.
- **shape**: A character "square" or "rect" depending on the aspect ratio desired in the report.

Author(s)

Audrey Kauffmann <audrey@ebi.ac.uk>

See Also

aqm.spatial,aqm.plot
aqm.pca

Performs Principal Component Analysis on aqmobj.prepdata objects.

Description

aqm.pca performs a PCA of the arrays and formats the output for aqm.plot usage.

Usage

aqm.pca(expressionset, dataprep, intgroup = "Covariate", ...)

Arguments

expressionset  
Same input as for the function arrayQualityMetrics

dataprep  
An object of class aqmobj.prepdata

intgroup  
Same input as for the function arrayQualityMetrics

...  
Any arguments to levelplot

Details

See the aqm.prepdata help or the aqm Vignette for example of this object.

Value

An object of class aqmobj.pca.

Author(s)

Audrey Kauffmann <audrey@ebi.ac.uk>

See Also

aqm.prepdata, aqmobj.prepdata, aqmobj.pca

aqm.plot

Performs plots from aqm objects.

Description

aqm.plot performs plots.
Usage

```r
## S4 method for signature 'aqmTrellis':
aqm.plot(obj)

## S4 method for signature 'aqmobj.box':
aqm.plot(obj)
## S4 method for signature 'aqmobj.dens':
aqm.plot(obj)
## S4 method for signature 'aqmobj.msd':
aqm.plot(obj)
## S4 method for signature 'aqmobj.nuse':
aqm.plot(obj)
## S4 method for signature 'aqmobj.pmmm':
aqm.plot(obj)
## S4 method for signature 'aqmobj.qcs':
aqm.plot(obj)
## S4 method for signature 'aqmobj.rle':
aqm.plot(obj)
```

Arguments

- `obj`: an object of class `aqmobj`

Details

See the `aqm.prepdata` help or the `aqm` Vignette for example of this object.

Value

A plot in the `x11` device.

Author(s)

Audrey Kauffmann. Maintainer: <audrey@ebi.ac.uk>

---

### aqm.pmmm

Performs perfect match versus mismatch density plots.

Description

`aqm.pmmm` performs PM MM density curves on objects of class `AffyBatch` and formats the output for `aqm.plot` usage.

Usage

```r
aqm.pmmm(expressionset, ...)
```
Arguments

expressionset

is an object of class AffyBatch

... Any arguments to density

Value

An object of class aqmobj.pmmm.

Author(s)

Audrey Kauffmann <audrey@ebi.ac.uk>

See Also

aqmobj.pmmm

Examples

library(ALLMLL)
data(MLL.A)
pm = aqm.pmmm(MLL.A)
class(pm)
aqm.plot(pm)

Description

aqm.prepaffy performs data preprocessing on AffyBatch and formats the output for aqm.rle and aqm.nuse usage.

Usage

aqm.prepaffy(expressionset, sN)

Arguments

expressionset

is an object of class AffyBatch

sN

are the sample names to be written on the plots

Value

A preprocessed affy object of class aqmobj.prepaffy.

Author(s)

Audrey Kauffmann <audrey@ebi.ac.uk>
See Also

aqm.rle, aqm.nuse

Examples

library(ALLMLL)
data(MLL.A)
MLLaffyprep = aqm.prepaffy(MLL.A, sampleNames(MLL.A))
nuse = aqm.nuse(MLLaffyprep)
class(nuse)
aqm.plot(nuse)

Description

aqm.prepdata formats an ExpressionSet, an AffyBatch, a NChannelSet, or a BeadLevelList into a aqmobj.prepdata object which can be used as an input of the aqm functions.

Usage

## S4 method for signature 'ExpressionSet':
aqm.prepdata(expressionset, do.logtransform)

## S4 method for signature 'AffyBatch':
aqm.prepdata(expressionset, do.logtransform)

## S4 method for signature 'NChannelSet':
aqm.prepdata(expressionset, do.logtransform)

## S4 method for signature 'BeadLevelList':
aqm.prepdata(expressionset, do.logtransform)

## S4 method for signature 'aqmOneCol':
aqm.prepdata(expressionset, do.logtransform)

Arguments

expressionset

An object of class ExpressionSet for one colour non Affymetrix data, AffyBatch for Affymetrix data, NChannelSet for two colour arrays, or BeadLevelList for Illumina bead arrays.

do.logtransform

TRUE or FALSE whether or not you want to log transform the data.

Value

An object of class aqmobj.prepdata.

Author(s)

Audrey Kauffmann <audrey@ebi.ac.uk>
## aqm.prepdata

See Also

aqmobj.prepdata, aqm.boxplot, aqm.density, aqm.heatmap, aqm.maplot, aqm.meansd, aqm.probesmap, aqm.spatial, aqm.spatialbg

Examples

```r
## Load an example of a NChannelSet
library(CCl4)
data(CCl4)

## Normalization of CCl4 using vsn
library(vsn)
CCl4norm = justvsn(CCl4, subsample=2000)

## Add a column in the phenoData to annotate samples
cond = paste(pData(CCl4norm)$RIN.Cy3, pData(CCl4norm)$RIN.Cy5, sep="/")
poor = grep(cond, pattern="2.5")
medium = grep(cond, pattern="^5/|/5")
good = grep(cond, pattern="^9.7")
cov[good] = "Good"
cov[medium] = "Medium"
cov[poor] = "Poor"
phenoData(CCl4norm)$RNAintegrity = cov

## Add X and Y columns in the featureData to allow spatial representations
featureData(CCl4norm)$X = featureData(CCl4norm)$Row
featureData(CCl4norm)$Y = featureData(CCl4norm)$Column

## Add a hasTarget column in the featureData to call aqm.probesmap
featureData(CCl4norm)$hasTarget = (regexpr("^NM", featureData(CCl4norm)$Name) > 0)

## Prepare the data for aqm.xxx calls
CCl4prep = aqm.prepdata(CCl4norm, do.logtransform = FALSE)

## Draw MA plots
ma = aqm.maplot(dataprep = CCl4prep)
class(ma)
aqm.plot(ma)

## Draw heatmap making use of the RNAintegrity
## column of the phenoData
hm = aqm.heatmap(expressionset = CCl4norm, dataprep = CCl4prep,
                  intgroup = "RNAintegrity")
class(hm)
aqm.plot(hm)

## Draw probes mapping density curves making use of the hasTarget
## column of the featureData
sp = aqm.spatial(expressionset = CCl4norm, dataprep = CCl4prep,
                  scale = "Rank")
class(sp)
aqm.plot(sp)
```
```r
## Draw probes mapping density curves making use of the hasTarget
## column of the featureData
pm = aqm.probesmap(expressionset = CCl4norm, dataprep = CCl4prep)
class(pm)
aqm.plot(pm)
```

### aqm.probesmap

#### Performs probes mapping on aqmobj.prepdata objects.

**Description**

`aqm.probesmap` performs probes mapping, and formats the output for `aqm.plot` usage.

**Usage**

```r
aqm.probesmap(expressionset, dataprep, ...)
```

**Arguments**

- `expressionset`  
  Same input as for the function `arrayQualityMetrics`  

- `dataprep`  
  An object of class `aqmobj.prepdata`  

- `...`  
  Any arguments to `densityplot`  

**Details**

See the `aqm.prepdata` help or the `aqm` Vignette for example of this object.

**Value**

An object of class `aqmobj.probesmap`

**Author(s)**

Audrey Kauffmann <audrey@ebi.ac.uk>

---

### aqm.qcstats

#### Performs QCstats plot on AffyBatch.

**Description**

`aqm.qcstats` performs QCstats on objects of class `AffyBatch` and formats the output for `aqm.plot` usage.

**Usage**

```r
aqm.qcstats(expressionset, ...)
```
Arguments

expressionset

is an object of class AffyBatch

... Any arguments to qc

Value

An object of class aqmobj.qcs.

Author(s)

Audrey Kauffmann <audrey@ebi.ac.uk>

See Also

aqmobj.qcs

Examples

library(ALLMLL)
data(MLL.A)
qm = aqm.qcstats(MLL.A)
class(qm)
aqm.plot(qm)

Description

aqm.rle performs RLE boxplots and outlier detection from it and formats the output for aqm.plot usage.

Usage

aqm.rle(affyproc, ...)

Arguments

affyproc An object of class aqmobj.prepaffy

... Any arguments to Mbox

Details

See the aqm.prepaffy help or the aqm Vignette for example of this object.

Value

An object of class aqmobj.rle
aqm.rnadeg

Author(s)
Audrey Kauffmann <audrey@ebi.ac.uk>

See Also
aqm.prepaffy, aqmobj.prepaffy, aqmobj.rle

---

**Description**
aqm.rnadeg performs RNA degradation on objects of class `AffyBatch` and formats the output for aqm.plot usage.

**Usage**
aqm.rnadeg(expressionset, ...)

**Arguments**
- **expressionset**
  - is an object of class `AffyBatch`
- ... Any arguments to `AffyRNAdeg`

**Details**
See the aqm.prepdata help or the aqm Vignette for example of this object.

**Value**
An object of class `aqmobj.rnadeg`.

Author(s)
Audrey Kauffmann <audrey@ebi.ac.uk>

See Also
aqmobj.rnadeg
Description

aqm.spatialbg performs representation of the spatial distribution of the background intensities on the arrays, outlier detection and formats the output for aqm.plot usage.

Usage

```r
aqm.spatialbg(expressionset, dataprep, scale)
```

Arguments

- `expressionset`: Same input as for the function `arrayQualityMetrics`
- `dataprep`: An object of class `aqmobj.prepdata`
- `scale`: The spatial distribution can be represented on the rank of the intensities or on the logarithm scale. Possible options are thus 'Rank' and 'Log'.

Details

See the aqm.prepdata help or the aqm Vignette for example of this object.

Value

An object of class `aqmobj.spatialbg`.

Author(s)

Audrey Kauffmann <audrey@ebi.ac.uk>

See Also

`aqm.prepdata`, `aqmobj.prepdata`, `aqmobj.spatialbg`
Arguments

expressionset  
Same input as for the function `arrayQualityMetrics`

dataprep     
An object of class `aqmobj.prepdata`

scale    
The spatial distribution can be represented on the rank of the intensities or on the logarithm scale. Possible options are thus 'Rank' and 'Log'.

Details

See the `aqm.prepdata` help or the aqm Vignette for example of this object.

Value

An object of class `aqmobj.spatial`.

Author(s)

Audrey Kauffmann <audrey@ebi.ac.uk>

See Also

`aqm.prepdata`, `aqmobj.prepdata`, `aqmobj.spatial`

---

**aqm.writereport**  
Writes a report from objects produced with **aqm.xxx** functions.

Description

`aqm.writereport` performs an html report from a list of aqmobj objects. It includes a summary with the outliers detected, titles, plots and legends.

Usage

```
aqm.writereport(name, expressionset, obj)
```

Arguments

name  
A name to customize the title of the report that will be "name quality metrics report"

expressionset  
The expressionset on which the metrics have been run

obj  
A list of aqmobj.xxx objects

Value

An html report named 'QMreport.html' in the working directory.

Author(s)

Audrey Kauffmann <audrey@ebi.ac.uk>
library("ALLMLL")
data(MLL.A)
MLLprep = aqm.prepdata(MLL.A, TRUE)
bo = aqm.boxplot(MLL.A, MLLprep)
de = aqm.density(MLL.A, MLLprep)
obj = list("Boxplot" = bo, "Density" = de)
aqm.writereport("Test", MLL.A, obj)
addXYfromGAL

## S4 method for signature 'marrayRaw':
arrayQualityMetrics(expressionset, outdir,
force, do.logtransform, intgroup, grouprep)

## S4 method for signature 'marrayNorm':
arrayQualityMetrics(expressionset, outdir,
force, do.logtransform, intgroup, grouprep)

### Arguments

- **expressionset** is an object of class `ExpressionSet`, `AffyBatch`, `NChannelSet`, `BeadLevelList`, `RGList`, `MAList`, `aqmInputObj`, `marrayRaw` or `marrayNorm`.

- **outdir** is the name of the directory in which the results are created.

- **force** if TRUE, `outdir` will be overwritten if it already exists.

- **do.logtransform** If TRUE, the data are log transformed before the analysis.

- **intgroup** Name of the column of the phenoData to be used to draw a colour side bar next to the heatmap.

- **grouprep** Decide if you want the boxplots and density plots to be coloured function of the groups set by `intgroup`. The default is FALSE meaning that the boxplot and density plots will not be represented function of the groups of `intgroup`.

### Details

See the `arrayQualityMetrics` Vignette for examples of this function.

### Value

A directory `outdir` containing a HTML report named `QMreport.html` and all the PNG and PDF plots is created.

### Author(s)

Audrey Kauffmann, Wolfgang Huber. Maintainer: <audrey@ebi.ac.uk>

---

**addXYfromGAL**  
*Computing the coordinates of the spots on a slide*

### Description

From the coordinates of the blocks of a microarray slide and the Row and Column locations of the spots within the blocks, `addXYfromGAL` computes the X and Y coordinates of the spots of a slide.

### Usage

`addXYfromGAL(x, gal.file, nBlocks, skip, ...)`
Arguments

x is an AnnotatedDataFrame representing the featureData of an object.
gal.file name of the file .gal that contains the coordinates of the blocks.
nBlocks number of blocks on the slide.
skip number of header lines to skip when reading the gal.file.
... Arguments that get passed on to read.table.

Value

The object x of class AnnotatedDataFrame will be returned with two added columns: X and Y corresponding to the absolute position of the probes on the array.

Author(s)

Audrey Kauffmann, Wolfgang Huber. Maintainer: <audrey@ebi.ac.uk>
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