

Package ‘limmaGUI’

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Title GUI for limma Package With Two Color Microarrays

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Imports methods, grDevices, graphics, limma, R2HTML, tcltk, tkrplot,
xtable, utils

Description A Graphical User Interface for differential expression analysis of two-
color microarray data using the limma package.

License GPL (>=2)

URL <http://bioinf.wehi.edu.au/limmaGUI/>

biocViews GUI, GeneExpression, DifferentialExpression, DataImport,
Bayesian, Regression, TimeCourse, Microarray, mRNAMicroarray,
TwoChannel, BatchEffect, MultipleComparison, Normalization,
Preprocessing, QualityControl

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 LGchangeLog

LimmaGUI Change Log

Description

Write as text the most recent changes from the limmaGUI package changelog.

Usage

```
LGchangeLog(n=20)
```

Arguments

n integer, number of lines to write of changelog.

Value

No value is produced, but a number of lines of text are written to standard output.

Author(s)

Gordon Smyth

 limmaGUI

Graphical User Interface for the limma microarray package

Description

Graphical User Interface for the limma microarray package

Usage

```
AboutLimmaGUI()
AboutNormalization()
BChelp()
ChooseContrastsParameterization(parameterizationTreeIndex)
ChooseEbayesStatistic()
ChooseParameterization()
ChoosePlotSymbolByClicking(spotType, cex)
ChooseSpotType(parameterizationTreeIndex)
ComputeContrasts()
CopyGraph(img)
CreateNewParameterization()
DeleteContrastsParameterization()
deleteItemFromList(list1, itemName = NULL, index = NULL)
DeleteParameterization()
DupCorBoxPlot()
ebayesBoxPlots()
evalRcode()
ExportHTMLreport()
```

```
ExportTopTable()
fixSeps(string)
GetBackgroundCorrectionMethod()
GetBetweenArrayNormalizationMethod()
GetCoef(parameterizationTreeIndex, whichCoef = "onlyOne")
GetComponentstoExportInHTMLreport(parameterizationIndex = NULL)
GetContrastsParameterizationName()
GetContrastsParameterizationNames(parameterizationTreeIndex)
GetDEcutoff()
GetDesignOrContrasts(Design = FALSE, Contrasts = FALSE, NumContrasts = 0,
                      parameterizationIndex = 0)
GetGeneLabelsOptions()
GetImageAnalysisColumnHeadings()
GetImageProcessingFileType()
GetJpegOrPngParams(graphFileType)
GetJpegOrPngX11Params(graphFileType)
GetlimmaDataSetName()
GetlmFitMethod()
GetLowessType()
GetNEWxlim(xlim)
GetNormexpOffsetValue(CurrentNormexpOffsetValue)
GetNumParametersNoTargets()
getPackageVersion(pkgName)
GetParameterizationName()
GetParameterNames(parameterizationTreeIndex)
GetParametersAndOrContrasts(parameterizationTreeIndex, whatFor = "heat")
GetPlotLabels(plottitle = "", xlabel = "", ylabel = "")
GetPlotSize()
GetPlotTitle(plottitle = "")
GetPValueCutoff(p.value = 0.01)
GetReducedDuplicateSpacing(parameterizationTreeIndex)
GetRNATypesFrom.ContrastsFromDropDowns.String(string)
GetSlideNum()
GetSpotTypesForLinearModel()
GetSpotTypesIncludedNames(parameterizationTreeIndex)
GetWithinArrayNormalizationMethod()
GetWtAreaParams()
HeatDiagramDialog(parameterName)
HeatDiagramPlot()
HowManyDups()
HTMLplotUsingFunction(Caption = "", File = .HTML.file,
                      GraphRelativeDirectory = ".", GraphAbsoluteDirectory =
                      NULL, GraphFileName = "", GraphSaveAs = "png",
                      GraphBorder = 1, Align = "center", plotFunction =
                      NULL, Width = 600, Height = 600, PointSize = 12,
                      BG = "white", res = 72, ...)
ImageArrayPlot()
ImageArrayPlotDialog(slidenum)
ImportMA()
ImportMADialog()
initGlobals()
InitNewParameterization()
```

```

limmaGUI(BigfontsForlimmaGUIpresentation = FALSE)
limmaHelp()
lmFitMethodHelp()
LogOddsPlot()
MAPlot()
MAPlotAvg()
MBoxPlot()
MMPlot()
NewLimmaFile()
NormalizeNow()
nstrstr(haystack, needle)
onDestroy()
onExit()
OpenALimmaFile(FileName)
OpenGALandTargetsandSpotTypesfiles()
OpenGALFile()
OpenLimmaFile()
OpenSpotTypesFile()
OpenTargetsFile()
plotMAColorCoded()
PlotOptions()
PrintTipGroupMAPlot()
QQTplot()
read.marrayTools(MFile,AFile, path, verbose, sep, quote, header, ...)
ReadImageProcessingFiles()
Require(pkg)
Resize(img, plotFunction)
SaveAsLimmaFile()
SaveGraphAsJpeg(initialfile, plotFunction)
SaveGraphAsPDF(initialfile, plotFunction)
SaveGraphAsPNG(initialfile, plotFunction)
SaveGraphAsPostscript(initialfile, plotFunction)
SaveLimmaFile()
SelectPlotSymbols(SpotTypes)
SetLayoutParameters()
SetupPlotKeyBindings(tt, img)
SetupPlotMenus(tt, initialfile, plotFunction, img)
SetWD()
showChangeLog()
showCitations()
showGAL()
showTopTable(..., export = FALSE)
SimplifyContrastsExpression(string)
strstr(haystack, needle)
tclArrayVar()
TclRequire(tclPkg)
TryReadImgProcFile(expr)
UpdateSpotTypesStatus()
UpDownOrBoth()
VennDiagramPlot()
ViewDesignOrContrastsMatrixAsPairs(DesignOrContrasts, designOrContrastsList,
                                     parameterizationIndex, contrastsParameterizationIndex

```

```

        = NULL)
ViewDesignOrContrastsMatrixInTable(DesignOrContrasts, designOrContrastsList,
        parameterizationIndex, contrastsParameterizationIndex
        = NULL)
ViewExistingContrastsParameterization()
ViewExistingParameterization()
ViewRNATargets()
ViewSpotTypes()

```

Arguments

BigfontsForlimmaGUIpresentation
 If set to TRUE, larger fonts are used. However, some font sizes are not controlled by limmaGUI and so must be adjusted in the operating system, e.g. in the Control Panel in Windows under Display, Appearance.

... HTMLplotUsingFunction:arg15, showTopTable:arg1

AFile Flat-file of log-intensities output by marrayTools

Align HTMLplotUsingFunction:arg8

BG HTMLplotUsingFunction:arg13

Caption HTMLplotUsingFunction:arg1

cex ChoosePlotSymbolByClicking:arg2

contrastsParameterizationIndex
 ViewDesignOrContrastsMatrixInTable:arg4, ViewDesignOrContrastsMatrixAsPairs:arg4

Contrasts GetDesignOrContrasts:arg2

CurrentNormexpOffsetValue
 GetNormexpOffsetValue:arg1

designOrContrastsList
 ViewDesignOrContrastsMatrixInTable:arg2, ViewDesignOrContrastsMatrixAsPairs:arg2

DesignOrContrasts
 ViewDesignOrContrastsMatrixInTable:arg1, ViewDesignOrContrastsMatrixAsPairs:arg1

Design GetDesignOrContrasts:arg1

export showTopTable:arg2

expr TryReadImgProcFile:arg1

FileName A file name.

File HTMLplotUsingFunction:arg2

GraphAbsoluteDirectory
 HTMLplotUsingFunction:arg4

GraphBorder HTMLplotUsingFunction:arg7

GraphFileName HTMLplotUsingFunction:arg5

graphFileType GetJpegOrPngParams:arg1, GetJpegOrPngX11Params:arg1

GraphRelativeDirectory
 HTMLplotUsingFunction:arg3

GraphSaveAs HTMLplotUsingFunction:arg6

haystack	nstrstr:arg1, strstr:arg1
header	See help for read.table
Height	HTMLplotUsingFunction:arg11
img	SetupPlotMenus:arg1, Resize:arg1, CopyGraph:arg1, SetupPlotKeyBindings:arg2
index	deleteItemFromList:arg1
initialfile	SaveGraphAsJpeg:arg1, SaveGraphAsPDF:arg1, SaveGraphAsPNG:arg1, SaveGraphAsPostscript:arg1, SetupPlotMenus:arg2
itemName	deleteItemFromList:arg1
list1	deleteItemFromList:arg1
MFile	Flat-file of log-ratios output by marrayTools
needle	nstrstr:arg2, strstr:arg2
NumContrasts	GetDesignOrContrasts:arg3
p.value	A p-value cutoff.
parameterizationIndex	GetDesignOrContrasts:arg4, GetComponentsToExportInHTMLreport:arg1, GetDesignOrContrasts:arg4, ViewDesignOrContrastsMatrixInTable:arg3, ViewDesignOrContrastsMatrixAsPairs:arg3
parameterizationTreeIndex	GetParametersAndOrContrasts:arg1, ChooseContrastsParameterization:arg1, ChooseSpotType:arg1, GetCoef:arg1, GetParameterNames:arg1, GetReducedDuplicateSpacing:arg1, GetContrastsParameterizationNames:arg1, GetSpotTypesIncludedNames:arg1
parameterName	HeatDiagramDialog:arg1
path	Path to the directory containing the MFile and AFile
pkgName	getPackageVersion:arg1
pkg	Require:arg1
plotFunction	SetupPlotMenus:arg1, HTMLplotUsingFunction:arg9, Resize:arg1, SaveGraphAsJpeg:arg2, SaveGraphAsPDF:arg2, SaveGraphAsPNG:arg2, SaveGraphAsPostscript:arg2
plottitle	GetPlotLabels:arg1, GetPlotTitle:arg1
PointSize	HTMLplotUsingFunction:arg12
quote	See help for read.table
res	HTMLplotUsingFunction:arg14
sep	Column separator. ("t" for tab-delimited text)
slidenum	ImageArrayPlotDialog:arg1
spotType	ChoosePlotSymbolByClicking:arg1
SpotTypes	SelectPlotSymbols:arg1
string	fixSeps:arg1, SimplifyContrastsExpression:arg1, GetRNATypesFrom.ContrastsFromDropDowns.Stri
tc1Pkg	TclRequire:arg1
tt	SetupPlotKeyBindings:arg1, SetupPlotMenus:arg1
verbose	Optional diagnostic messages
whatFor	GetParametersAndOrContrasts:arg2
whichCoef	GetCoef:arg2
Width	HTMLplotUsingFunction:arg10
xlabel	GetPlotLabels:arg2
xlim	GetNEWxlim:arg1
ylabel	GetPlotLabels:arg3

Details

This function launches a Graphical User Interface for the limma package by Gordon Smyth. The GUI uses Tk widgets (via the R TclTk interface by Peter Dalgaard) in order to provide a simple interface to the limma functions for linear modelling of microarrays and identification of differentially expressed genes.

Author(s)

James Wettenhall

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