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
tclPkg	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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