

# Package ‘limmaGUI’

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**Version** 1.70.0

**Date** 2018-09-28

**Title** GUI for limma Package With Two Color Microarrays

**Author** James Wettenhall [aut], Gordon Smyth [aut], Keith Satterley [ctb]

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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

**git\_url** <https://git.bioconductor.org/packages/limmaGUI>

**git\_branch** RELEASE\_3\_14

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 LGchangeLog

*LimmaGUI Change Log*


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**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

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 limmaGUI

*Graphical User Interface for the limma microarray package*


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**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.String:a |
| 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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