

Package: fmrireport (via r-universe)

June 2, 2026

Type Package

Title PDF Reporting for fMRI GLM Fits

Version 0.1.0

Description Generates publication-oriented PDF reports for fitted fMRI GLM models from 'fmrireg'. Reports include model/design summaries, HRF plots, coefficient summaries, contrast brain maps, and peak coordinate tables.

License GPL (>= 2)

Encoding UTF-8

Depends R (>= 4.1.0)

Imports fmrireg (>= 0.1.2), fmridataset (>= 0.1.0), neuroim2, stats, tools, utils

URL <https://bbuchsbaum.github.io/fmrireport/>,
<https://github.com/bbuchsbaum/fmrireport>

BugReports <https://github.com/bbuchsbaum/fmrireport/issues>

Suggests fmrihrf, ggplot2, knitr, neuroatlas, pkgdown, quarto, rmarkdown, testthat (>= 3.0.0), tinytable

VignetteBuilder knitr

Config/testthat/edition 3

RoxygenNote 7.3.3

Additional_repositories <https://bbuchsbaum.r-universe.dev>

Remotes bbuchsbaum/fmrireg, bbuchsbaum/fmridataset,
bbuchsbaum/neuroim2, bbuchsbaum/neuroatlas, bbuchsbaum/fmrihrf

Config/pak/sysreqs cmake make libhdf5-dev libicu-dev libuv1-dev libssl-dev

Repository <https://bbuchsbaum.r-universe.dev>

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as.data.frame.cluster_table
Coerce cluster_table to a Flat data.frame

Description

Produces a flat data.frame suitable for table rendering. Cluster rows have all columns populated; sub-peak rows have k and volume_mm3 set to NA.

Usage

```
## S3 method for class 'cluster_table'
as.data.frame(
  x,
  row.names = NULL,
  optional = FALSE,
  max_clusters = 30L,
  max_sub_peaks = 3L,
  ...
)
```

Arguments

x	A cluster_table object.
row.names	Ignored.
optional	Ignored.
max_clusters	Maximum clusters to include.
max_sub_peaks	Maximum sub-peaks per cluster.
...	Ignored.

Value

A data.frame.

cluster_table

*Build a Publication-Quality Activation Cluster Table***Description**

Detects suprathreshold clusters in a statistical brain volume and returns a structured table of cluster-level and peak-level statistics suitable for publication (NeuroImage / HBM / COBIDAS compliant).

Usage

```
cluster_table(
  vol,
  threshold,
  atlas = NULL,
  stat_type = c("t", "z", "F", "other"),
  df = NULL,
  coord_space = NULL,
  min_cluster_size = 10L,
  local_maxima_dist = 15,
  max_peaks = 3L,
  connectivity = c("26-connect", "18-connect", "6-connect"),
  sort_by = c("size", "peak_stat")
)
```

Arguments

vol	A NeuroVol object containing the statistical map.
threshold	Numeric threshold for cluster detection (absolute value).
atlas	Optional atlas object (e.g., a volatlas from neuroatlas) for anatomical labeling.
stat_type	Type of statistic in the volume: "t", "z", "F", or "other".
df	Degrees of freedom for p-value computation. A single value for t/z statistics, or a length-2 vector c(df1, df2) for F statistics. NULL omits p-values.
coord_space	Character string naming the coordinate space (e.g., "MNI152", "MNI305"). If NULL, inferred from atlas or set to "Unknown".
min_cluster_size	Minimum number of voxels for a cluster to be retained.
local_maxima_dist	Minimum distance (mm) between local maxima within a cluster.
max_peaks	Maximum number of sub-peaks reported per cluster.
connectivity	Voxel connectivity for cluster detection.
sort_by	Sort clusters by "size" (descending) or "peak_stat" (descending absolute value).

Value

An S3 object of class "cluster_table" with elements:

clusters A data.frame with one row per cluster.

peaks A data.frame with sub-peaks (local maxima) per cluster.

threshold The threshold used.

stat_type The statistic type.

df Degrees of freedom.

n_clusters Number of clusters.

coord_space Coordinate space label.

atlas_name Name of atlas used, or NA.

format_cluster_tt	<i>Format a cluster_table as a tinytable</i>
-------------------	--

Description

Returns a `tinytable::tt()` object with appropriate caption and formatting for Quarto/Typst rendering.

Usage

```
format_cluster_tt(x, max_clusters = 30L, max_sub_peaks = 3L, digits = 3L, ...)
```

Arguments

<code>x</code>	A <code>cluster_table</code> object.
<code>max_clusters</code>	Maximum clusters to include.
<code>max_sub_peaks</code>	Maximum sub-peaks per cluster.
<code>digits</code>	Number of digits for rounding numeric columns.
<code>...</code>	Passed to <code>tinytable::tt()</code> .

Value

A `tinytable` object.

```
print.cluster_table Print a cluster_table Object
```

Description

CLI-formatted hierarchical output showing clusters with sub-peaks indented.

Usage

```
## S3 method for class 'cluster_table'
print(x, max_clusters = 20L, max_sub_peaks = 3L, ...)
```

Arguments

x	A cluster_table object.
max_clusters	Maximum number of clusters to display.
max_sub_peaks	Maximum sub-peaks per cluster to display.
...	Ignored.

Value

Invisibly returns x.

```
report Render Analysis Reports
```

Description

Generic report interface and fmri_lm implementation that renders a publication-style PDF report through Quarto.

Usage

```
report(x, ...)

## Default S3 method:
report(x, ...)

## S3 method for class 'fmri_lm'
report(
  x,
  output_file = "fmri_lm_report.pdf",
  title = "fMRI GLM Analysis Report",
  author = NULL,
  sections = c("model", "design", "hrf", "estimates", "contrasts", "diagnostics"),
```

```

brain_map_stat = c("tstat", "estimate", "prob"),
slice_axis = 3L,
n_slices = 9L,
threshold = NULL,
bg_vol = NULL,
atlas = NULL,
cluster_thresh = 3,
min_cluster_size = 10L,
max_peaks = 15L,
local_maxima_dist = 15,
max_sub_peaks = 3L,
open = interactive(),
quiet = TRUE,
...
)

```

Arguments

<code>x</code>	Object to report on.
<code>...</code>	Additional arguments passed to methods.
<code>output_file</code>	Output PDF path.
<code>title</code>	Report title.
<code>author</code>	Optional author string.
<code>sections</code>	Sections to include.
<code>brain_map_stat</code>	Statistic for contrast maps: "tstat", "estimate", or "prob".
<code>slice_axis</code>	Axis for montage slicing (1, 2, or 3).
<code>n_slices</code>	Number of slices to render in contrast maps.
<code>threshold</code>	Optional hard threshold for contrast map rendering.
<code>bg_vol</code>	Optional background NeuroVol for overlay plots.
<code>atlas</code>	Optional atlas object for peak labeling.
<code>cluster_thresh</code>	Absolute statistic threshold for peak clustering.
<code>min_cluster_size</code>	Minimum cluster size (voxels) in peak table.
<code>max_peaks</code>	Maximum peaks per contrast table.
<code>local_maxima_dist</code>	Minimum distance (mm) between local maxima within a cluster for sub-peak detection. Default 15.
<code>max_sub_peaks</code>	Maximum number of sub-peaks per cluster in the activation table. Default 3.
<code>open</code>	If TRUE, open the generated PDF after rendering.
<code>quiet</code>	If TRUE, suppress Quarto render logs.

Value

Method-specific report output. For `fmr_i_lm` fits, returns the output PDF path invisibly.

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