

Package: ggAtlasTrack (via r-universe)

October 11, 2026

Title ggplot2 Visualisation Tools for AtlasTrack White Matter Tracts

Version 0.1.3

Description Provides ggplot2-based two-dimensional visualisations of AtlasTrack white-matter tract polygons in three view sets - orthogonal, ggseg, and axial. Supports categorical tract plots and tract-level continuous values.

License MIT + file LICENSE

Encoding UTF-8

Roxygen list(markdown = TRUE)

RoxygenNote 8.0.0

LazyDataCompression xz

Imports dplyr, ggplot2, grDevices, grid, rlang, sf, stats, stringr, tibble, tidyr

Suggests knitr, rmarkdown, sf, smoothr, readr, purrr

Depends R (>= 3.5)

LazyData true

VignetteBuilder knitr

URL <https://github.com/hbyrne07/ggAtlasTrack>,
<https://hbyrne07.r-universe.dev/ggAtlasTrack>

BugReports <https://github.com/hbyrne07/ggAtlasTrack/issues>

X-schema.org-keywords neuroimaging, diffusion MRI, DTI, white matter, tractography, AtlasTrack, ABCD, ggplot2, ggseg, brain atlas

Config/pak/sysreqs libabsl-dev cmake libgdal-dev gdal-bin libgeos-dev libicu-dev libssl-dev libproj-dev libsqlite3-dev libudunits2-dev

Repository <https://hbyrne07.r-universe.dev>

Date/Publication 2026-08-11 06:11:57 UTC

RemoteUrl <https://github.com/hbyrne07/ggAtlasTrack>

RemoteRef HEAD

RemoteSha 94d7b5c8a2a7619713284f968004482d9ce05837

Contents

atlastrack_abcd_lookup	2
atlastrack_abcd_to_long	3
atlastrack_abcd_tract_lookup	4
atlastrack_abcd6_to_long	5
atlastrack_background	6
atlastrack_plot	6
atlastrack_tract_names	7
atlastrack_tracts	8
atlastrack_views	8
atlastrack_views_available	9
Index	10

atlastrack_abcd_lookup	<i>Show ABCD DTI variable names matched to AtlasTrack tracts</i>
------------------------	--

Description

Show ABCD DTI variable names matched to AtlasTrack tracts

Usage

```
atlastrack_abcd_lookup(  
  version = c("6.0", "5.0", "all"),  
  metric = "fa",  
  shell = "fs",  
  only_plotted = TRUE  
)
```

Arguments

version	ABCD data release version. One of "6.0", "5.0", or "all".
metric	DTI metric suffix to use. Defaults to "fa". Other common ABCD DTI metrics include "md", "ld", and "td".
shell	ABCD 6.0 DTI shell to use. Defaults to "fs" for full shell. Use "is" for inner shell.
only_plotted	Logical. If TRUE, return only tracts available in the ggAtlasTrack plotting atlas.

Value

A data frame mapping ABCD DTI variable names to AtlasTrack tract names.

Examples

```
atlastrack_abcd_lookup(metric = "fa")
atlastrack_abcd_lookup(metric = "md")
atlastrack_abcd_lookup(metric = "fa", shell = "is")
```

atlastrack_abcd_to_long

Convert ABCD DTI columns to AtlasTrack long format

Description

Convert ABCD DTI columns to AtlasTrack long format

Usage

```
atlastrack_abcd_to_long(
  data,
  version = c("6.0", "5.0"),
  metric = "fa",
  shell = "fs",
  id_cols = NULL,
  value_name = NULL,
  only_plotted = TRUE
)
```

Arguments

data	A data frame containing ABCD DTI variables.
version	ABCD data release version. One of "6.0" or "5.0".
metric	DTI metric suffix to use. Defaults to "fa". Other common ABCD DTI metrics include "md", "ld", and "td".
shell	ABCD 6.0 DTI shell to use. Defaults to "fs" for full shell. Use "is" for inner shell. This argument is ignored for ABCD 5.0.
id_cols	Optional character vector of identifier columns to keep, such as "src_subject_id" or "eventname". Supplying id_cols is recommended, especially when the input data contains multiple DTI metrics.
value_name	Name of the output value column. If NULL, this defaults to the value of metric.
only_plotted	Logical. If TRUE, use only tracts available in the ggAtlasTrack plotting atlas.

Value

A long-format data frame containing identifier columns, tract_name, tract_label, the ABCD variable name, and the DTI value.

Examples

```
## Not run:
abcd_fa_long <- atlastrack_abcd_to_long(
  abcd_data,
  version = "6.0",
  metric = "fa",
  shell = "fs",
  id_cols = c("src_subject_id", "eventname")
)

abcd_md_long <- atlastrack_abcd_to_long(
  abcd_data,
  version = "6.0",
  metric = "md",
  shell = "fs",
  id_cols = c("src_subject_id", "eventname")
)

## End(Not run)
```

atlastrack_abcd_tract_lookup

ABCD DTI variable lookup for AtlasTrack tracts

Description

A lookup table mapping ABCD 5.0 and ABCD 6.0 DTI variable names to the tract_name values used by ggAtlasTrack.

Usage

```
atlastrack_abcd_tract_lookup
```

Format

A data frame with columns:

ABCD5_fa_var_name ABCD 5.0 FA variable name.

ABCD6_fa_var_name ABCD 6.0 FA variable name.

tract_name AtlasTrack tract name used by ggAtlasTrack.

tract_label Descriptive AtlasTrack tract label.

in_atlastrack_plot Logical indicator for whether the tract is available in the plotting atlas.

Details

The stored variable names are based on fractional anisotropy (fa) columns. Helper functions such as `atlastrack_abcd_lookup()` and `atlastrack_abcd_to_long()` can generate equivalent names for other DTI metrics, such as mean diffusivity (md), longitudinal diffusivity (ld), and transverse diffusivity (td), by replacing the metric suffix.

Source

ABCD DTI variable names were matched to AtlasTrack tract labels.

Examples

```
atlastrack_abcd_tract_lookup
```

```
atlastrack_abcd6_to_long
```

Convert ABCD 6.0 DTI columns to AtlasTrack long format

Description

Convert ABCD 6.0 DTI columns to AtlasTrack long format

Usage

```
atlastrack_abcd6_to_long(
  data,
  metric = "fa",
  shell = "fs",
  id_cols = NULL,
  value_name = NULL,
  only_plotted = TRUE
)
```

Arguments

<code>data</code>	A data frame containing ABCD 6.0 DTI variables.
<code>metric</code>	DTI metric suffix to use. Defaults to "fa".
<code>shell</code>	ABCD 6.0 DTI shell to use. Defaults to "fs" for full shell. Use "is" for inner shell.
<code>id_cols</code>	Optional character vector of identifier columns to keep.
<code>value_name</code>	Name of the output value column. If NULL, this defaults to the value of <code>metric</code> .
<code>only_plotted</code>	Logical. If TRUE, use only tracts available in the ggAtlasTrack plotting atlas.

Value

A long-format data frame.

Examples

```
## Not run:
abcd_fa_long <- atlastrack_abcd6_to_long(
  abcd_data,
  metric = "fa",
  shell = "fs",
  id_cols = c("src_subject_id", "eventname")
)

## End(Not run)
```

atlastrack_background	<i>AtlasTrack 2D background polygons</i>
-----------------------	--

Description

A list containing ggseg-style background layers for plotting AtlasTrack.

Usage

```
atlastrack_background
```

Format

- A list with three sf objects:
- gm** Grey matter / cortical background polygons.
 - wm** White matter cut-out polygons.
 - vent** Ventricle polygons.

atlastrack_plot	<i>Plot AtlasTrack white-matter tracts</i>
-----------------	--

Description

Plot AtlasTrack white-matter tracts

Usage

```
atlastrack_plot(  
  data = NULL,  
  value = NULL,  
  tract_name = "tract_name",  
  view_set = c("orthogonal", "split", "axial"),  
  show_ventricles = TRUE,  
  tract_labels = c("abbrev", "full"),  
  low = "#E8EEF7",  
  high = "#2166AC",  
  limits = NULL,  
  legend_title = NULL  
)
```

Arguments

data	Optional data frame containing tract-level values.
value	Optional unquoted column name in data to map to tract fill.
tract_name	Name of the tract-name column in data.
view_set	View set to plot. One of "orthogonal", "split", or "axial".
show_ventricles	Logical. Whether to show ventricles.
tract_labels	Label style for the categorical tract legend. One of "abbrev" or "full".
low	Low colour for continuous values.
high	High colour for continuous values.
limits	Optional numeric limits for continuous scale.
legend_title	Optional legend title.

Value

A ggplot object.

atlastrack_tract_names
<i>List available AtlasTrack tract names</i>

Description

List available AtlasTrack tract names

Usage

```
atlastrack_tract_names()
```

Value

A data frame containing AtlasTrack tract abbreviations and full names.

atlastrack_tracts	<i>AtlasTrack 2D tract polygons</i>
-------------------	-------------------------------------

Description

A preprocessed `sf` object containing two-dimensional AtlasTrack white-matter tract polygons for ggseg-style plotting.

Usage

```
atlastrack_tracts
```

Format

An `sf` object with columns including:

tract_id Numeric AtlasTrack tract identifier.
tract_name AtlasTrack tract name.
view_set View set, either "ggseg" or "orthogonal".
display_view Displayed panel name.
view Original anatomical view.
slice_mm Slice coordinate in MNI space.
view_order Panel order within view set.
atlas Atlas name.
type Atlas type.
hemi Hemisphere label.
side Panel side/view label.
region Region label used for plotting.
label Region label.
geometry Polygon geometry.

atlastrack_views	<i>AtlasTrack available views</i>
------------------	-----------------------------------

Description

Metadata describing the available AtlasTrack 2D plotting views.

Usage

```
atlastrack_views
```

Format

A data frame with columns:

view_set View set, either "ggseg" or "orthogonal".

display_view Displayed panel name.

view Original anatomical view.

slice_mm Slice coordinate in MNI space.

view_order Panel order within view set.

atlastrack_views_available

Show available AtlasTrack views

Description

Show available AtlasTrack views

Usage

```
atlastrack_views_available()
```

Value

A data frame of available view sets and display views.

Index

* datasets

- atlastrack_abcd_tract_lookup, [4](#)
- atlastrack_background, [6](#)
- atlastrack_tracts, [8](#)
- atlastrack_views, [8](#)

- atlastrack_abcd6_to_long, [5](#)
- atlastrack_abcd_lookup, [2](#)
- atlastrack_abcd_to_long, [3](#)
- atlastrack_abcd_tract_lookup, [4](#)
- atlastrack_background, [6](#)
- atlastrack_plot, [6](#)
- atlastrack_tract_names, [7](#)
- atlastrack_tracts, [8](#)
- atlastrack_views, [8](#)
- atlastrack_views_available, [9](#)