PyCartool

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Oct 22, 2019

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CHAPTER

ONE

PYCARTOOL.IO PACKAGE

1.1 Submodules

1.2 pycartool.io.montage module

pycartool.io.montage.**read_xyz**(*filename*, *kind=''*)
Reads and convert xyz positions to a mne montage type

Parameters **filename** (*str*) – The filename of the xyz file.

Returns **montage** – Montage for EEG electrode locations.

Return type mne.channels.montage.Montage

1.3 pycartool.io.sef module

pycartool.io.sef.**read_sef**(*path*)
Reads file with format .sef, and returns a mne.io.Raw object containing the data.

Parameters **path** (*str*) – The path of the sef file.

Returns **raw** – RawArray containing the EEG signals.

Return type mne.io.RawArray

pycartool.io.sef.**write_sef**(*path*, *raw*)
Export a raw mne file to a sef file.

Parameters

- **path** (*str*) – Filename of the exported dataset.
- **raw** (*instance of mne.io.Raw*) – The raw data to export.

1.4 pycartool.io.roi module

pycartool.io.roi.**read_roi**(*filename*)
Read Cartool region of interest (.rois) files.

Parameters **filename** (*str*) – The roi file to read

Returns

Rois –

The Rois info info. Keys are:

names [list of str] the rois names.

elements :list of int the indices of elements belonging to each rois (indice start to 1).

Return type dict of str

Warning: Indexes start from 1, not 0 as Cartools does. When using with combination of source space, you way need to tranform to 0 base indices.

1.5 pycartool.io.source_space module

pycartool.io.source_space.**read_spi**(*filename*)
Read Cartool spi file.

Parameters **filename** (*str*) – The spi file to read.

Returns

- **coord** (*ndarray, shape (n_sources, 3)*) – the source coordinates.
- **names** (*list, shape (n_sources)*)

pycartool.io.source_space.**write_spi**(*filename*, *solution_points*)
Write Cartool spi file.

Parameters

- **filename** (*str*) – The spi file to write.
- **solution_points** (*dict of str*) –

  The solution points info. Keys are:

  names [list of str] the solutions point names.

  coordinates [np.array, shape (n_solutions_points, 3)] the x,y,z coordinates of each solution point.

1.6 pycartool.io.inverse_solution module

pycartool.io.inverse_solution.**read_is**(*filename*)
Read Cartool inverse solution (.is) file.

Parameters **filename** (*str*) – the is file to read.

Returns the inverse solution matrices. n_dim=1 if solutions are scalar or n_dim=3 for vectorial solutions.

Return type ndarray, shape (n_regularizations, n_dim, n_solutionpoints, n_channels)

pycartool.io.inverse_solution.**read_ris**(*filename*)
Read Cartool Results of Inverse Solution computation (.ris) file.

Parameters **filename** (*str*) – the ris file to read.

Returns

results_of_is –

Keys are:

ris_type [str] magic should always be 'RI01'.

is_scalar [bool] True if solution is scalar, else False (vectorial).

sfreq [float] sampling frequency (in Hz).

data [np.ndarray, shape(n_timeframes, n_dim, n_solutionpoints)] time course of each solution point.

Return type dict of str

pycartool.io.inverse_solution.**write_ris**(*path*, *data*, *sfreq*)

Short summary.

Parameters

- **path** (*str*) – Path of the exported inverse solution computation.
- **data** (*np.ndarray, shape(n_timeframes, n_dim, n_solutionpoints)*) – time course of each solution point.
- **sfreq** (*float*) – sampling frequency (in Hz).

1.7 pycartool.io.leadfield module

pycartool.io.leadfield.**read_lf**(*filename*)

Read Cartool leadfield matrix.

Parameters **filename** (*str*) – The lf file to read.

Returns **leadfield_matrix** – the leadfield matrix.

Return type ndarray, shape (n_channels, n_sources, 3)

1.8 Module contents

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