

MEG Processing Helper GUI

08/02/24 – Early Version

BIDS Processing: Mostly Working

QA : Beta Version

MR Prep : Beta Version

BIDS gui

MEG BIDS conversion

MEG Conversion to BIDS
Warning: currently works with {DATE/dsets} format from scanner

Anonymize: N

Standard Options

MEG input DIR: **Browse**

MEG Hashcode:

BIDS ID:

BIDS Output Directory **Browse**

BIDS Session

COREG: **BrainSight**

Nifti MRI: **Browse**

Bsight Elec file: **Browse**

OPTIONAL: CropZeros No_EmptyRoom Freesurfer

Print CMD **RUN** **EXIT**

MEG BIDS conversion

MEG Conversion to BIDS
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Anonymize: Y

Standard Options

MEG input DIR: **ANON** **Browse**

MEG Hashcode: **ANON**

BIDS ID:

BIDS Output Directory **ANON** **Browse**

BIDS Session

COREG: **None**

OPTIONAL: CropZeros No_EmptyRoom Freesurfer

Print CMD **RUN** **EXIT**

MEG BIDS conversion

MEG Conversion to BIDS

Warning: currently works with {DATE/dsets} format from scanner

Anonymize: **Y**

Standard Options

MEG input DIR: **Browse**

MEG Hashcode:

BIDS ID:

BIDS Output Directory

BIDS Session

COREG: **BrainSight** ▾

Nifti MRI:

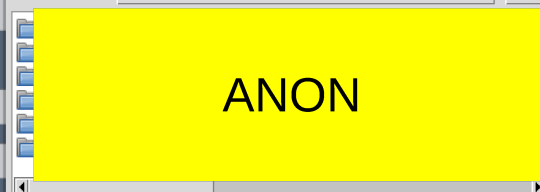
Bsight Elec file:

OPTIONAL: CropZeros No_EmptyRoom

Print CMD **RUN** **EXIT**

Choose Directory

Directory: /fast/TEST/ **ANON**

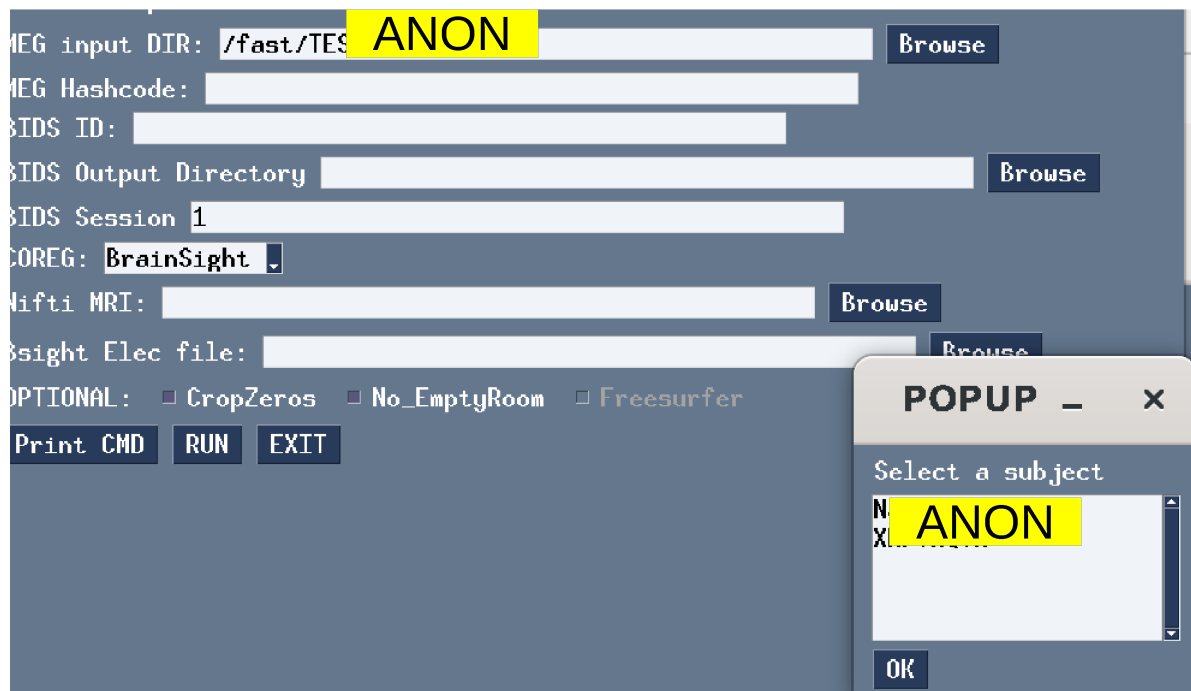


Selection: /fast/TEST/ **ANON**

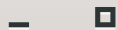
OK

Cancel

Automatically determine if multiple Acqs – Popup Subject Selector



MEG BIDS conversion



MEG Conversion to BIDS

Warning: currently works with {DATE/dsets} format from scanner

Anonymize: **N**

Standard Options

MEG input DIR: /fast/TEST/ANON Browse

MEG Hashcode: ANON

BIDS ID: TESTuMRI

BIDS Output Directory /fast/TEST/BIDS Browse

BIDS Session 1

COREG: BrainSight

Nifti MRI: /fast/TEST/ANON.nii Browse

Bsight Elec file: /fast/TEST/ANON.txt Browse

OPTIONAL: CropZeros No_EmptyRoom Freesurfer

Print CMD RUN EXIT

SUMMARY



```
2024-07-16 12:51:47.957 - INFO - ANON - ##### SUMMARY
2024-07-16 12:51:47.957 - INFO - ANON - SUCCESS :: /fast/TEST/ANON/MEG/sub-TESTuMRI_ses-1_task-sternberg_run-01_meg.ds
2024-07-16 12:51:47.957 - INFO - ANON - SUCCESS :: /fast/TEST/ANON/MEG/sub-TESTuMRI_ses-1_task-airpuff_run-01_meg.ds
2024-07-16 12:51:47.957 - INFO - ANON - SUCCESS :: /fast/TEST/ANON/MEG/sub-TESTuMRI_ses-1_task-EmptyRoom_run-01_meg.ds
2024-07-16 12:51:47.957 - INFO - ANON - SUCCESS :: /fast/TEST/ANON/MEG/sub-TESTuMRI_ses-1_task-rest_run-01_meg.ds
2024-07-16 12:51:47.957 - INFO - ANON - SUCCESS :: /fast/TEST/ANON/MEG/sub-TESTuMRI_ses-1_task-artifact_run-01_meg.ds
2024-07-16 12:51:47.957 - INFO - ANON - SUCCESS :: /fast/TEST/ANON/MEG/sub-TESTuMRI_ses-1_task-oddball_run-01_meg.ds
2024-07-16 12:51:47.957 - INFO - ANON - SUCCESS :: /fast/TEST/ANON/MEG/sub-TESTuMRI_ses-1_task-movie_run-01_meg.ds
2024-07-16 12:51:47.957 - INFO - ANON - SUCCESS :: /fast/TEST/ANON/MEG/sub-TESTuMRI_ses-1_task-gonogo_run-01_meg.ds
2024-07-16 12:51:47.957 - INFO - ANON - SUCCESS :: /fast/TEST/ANON/MEG/sub-TESTuMRI_ses-1_task-haririhammer_run-01_meg.ds
```

Ok Cancel

w/Bsight MRI

MEG BIDS conversion

MEG Conversion to BIDS
Warning: currently works with {DATE/dsets} format from scanner

Anonymize: Y

Standard Options

MEG input DIR:

MEG Hashcode:

BIDS ID:

BIDS Output Directory /fast/TEST/BIDS


BIDS Session 1

COREG: Afni

Nifti MRI:

Bsight Elec file:

OPTIONAL: CropZeros EmptyRoom Freesurfer



```
nih_bids_gui.cfg
/fast
1 anonymize:True
2 autocrop_zeros:True
3 freesurfer:None
4 ignore_eroom:True
5 ignore_mri_checks:False
6 coreg:Afni
7 bids_dir:/fast/TEST/BIDS
8 bids_session:1
```

jstout@kani: ~/src/nih_to_mne

MEG BIDS conversion

MEG Conversion to BIDS

Warning: currently works with {DATE/dsets} format from scanner

Anonymize: N Read Cfg

Standard Options

MEG input DIR: [] Browse

MEG Hashcode: []

BIDS ID: []

BIDS Output Directory /home/jstout/src/nih_to_mne/bids_dir Browse

BIDS Session 1

COREG: Brainsight

Nifti MRI: [] Browse

Bsight Elec file: [] Browse

OPTIONAL: CropZeros No_EmptyRoom Freesurfer

Print CMD RUN Write Cfg EXIT

Launching with defaults

```
(mne15) jstout@kani:~/src/nih_to_mne$ ./nih2mne/make_meg_bids_gui.py
```

MEG BIDS conversion

MEG Conversion to BIDS

Warning: currently works with {DATE/dsets} format from scanner

Anonymize: Y Read Cfg

Standard Options

MEG input DIR: [] Browse

MEG Hashcode: []

BIDS ID: []

BIDS Output Directory /fast/TEST/BIDS Browse

BIDS Session 1

COREG: Afni

Brik File: [] Browse

OPTIONAL: CropZeros No_EmptyRoom Freesurfer

Print CMD RUN Write Cfg EXIT

Launching with a config file
prepopulates some of the entries

```
(mne15) jstout@kani:~/src/nih_to_mne$ ./nih2mne/make_meg_bids_gui.py -h  
usage: make_meg_bids_gui.py [-h] [-config CONFIG]
```

Options:

-h, --help show this help message and exit

-config CONFIG Config file: typically ending in cfg

```
(mne15) jstout@kani:~/src/nih_to_mne$ ./nih2mne/make_meg_bids_gui.py -c  
ig /fast/nih_bids_gui.cfg
```

```
1 anonymize:True  
2 autocrop_zeros:True  
3 freesurfer:None  
4 ignore_eroom:True  
5 ignore_mri_checks:False  
6 coreg:Afni  
7 bids_dir:/fast/TEST/BIDS  
8 bids_session:1
```


MEG BIDS conversion

MEG Conversion to BIDS

Warning: currently works with {DATE/dsets} format from scanner

Anonymize: **N**

Standard Options

MEG input DIR: /fast/TEST/ANON

MEG Hashcode: N ANON

BIDS ID: TEST10

BIDS Output Directory /fast/TEST/bids_dir

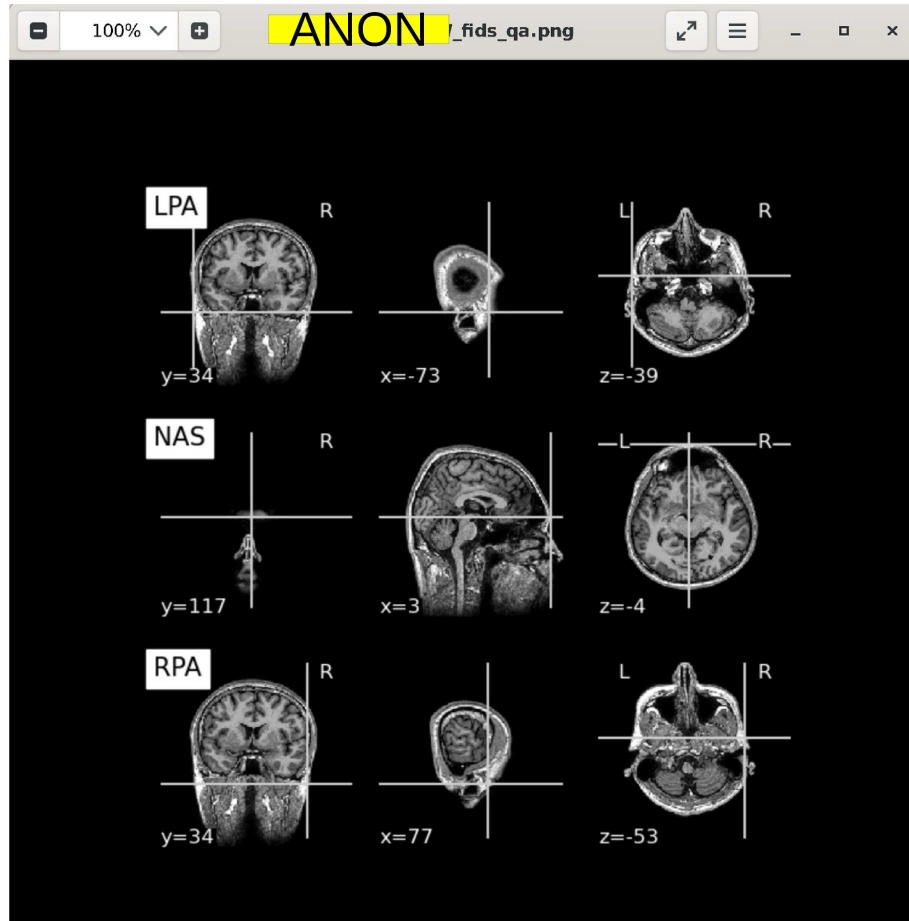
BIDS Session 1

COREG: Brainsight

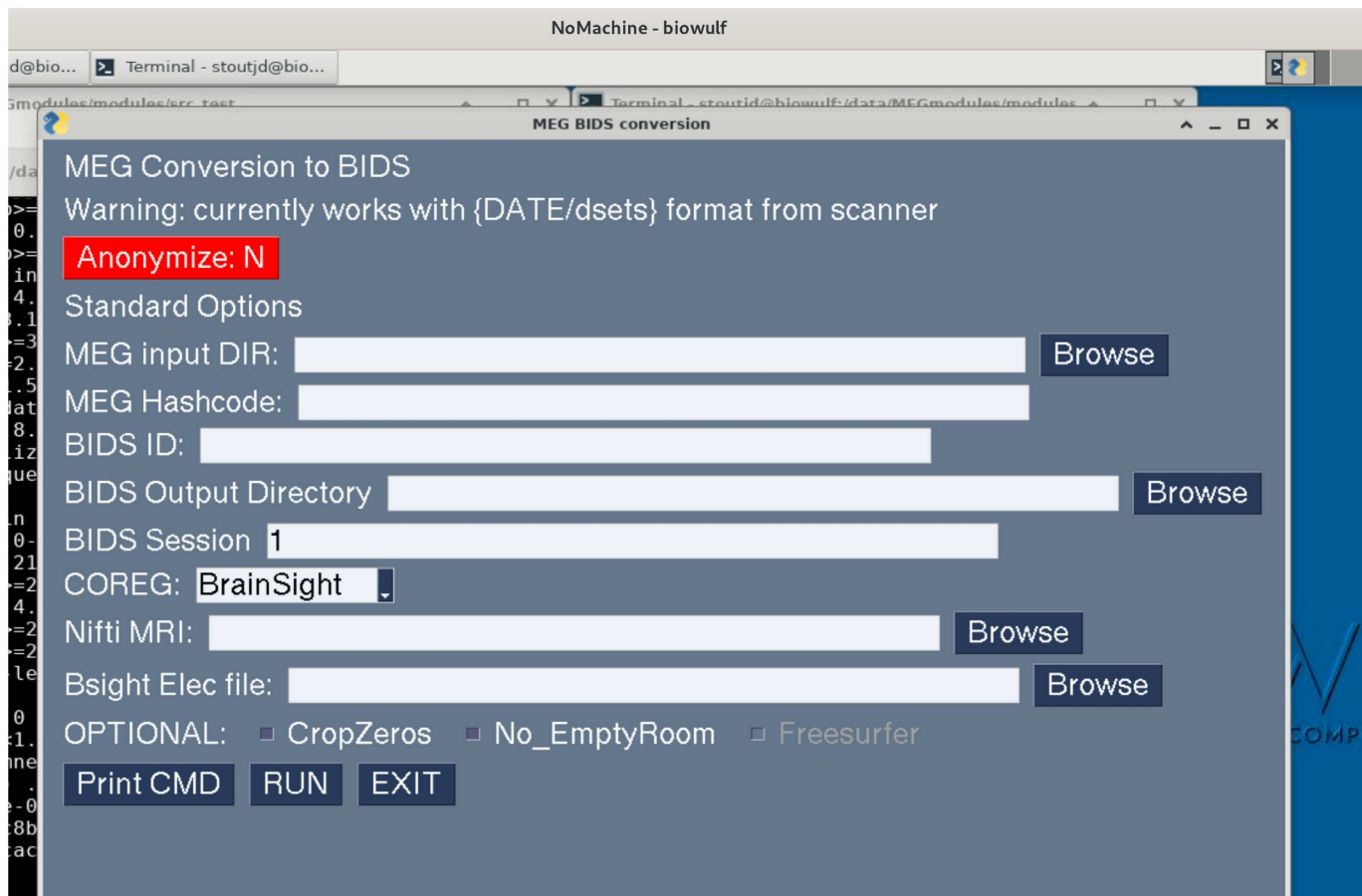
Nifti MRI: /fast/TEST/N ANON FW.nii

Bsight Elec file: /fast/TEST/N ANON FW.txt

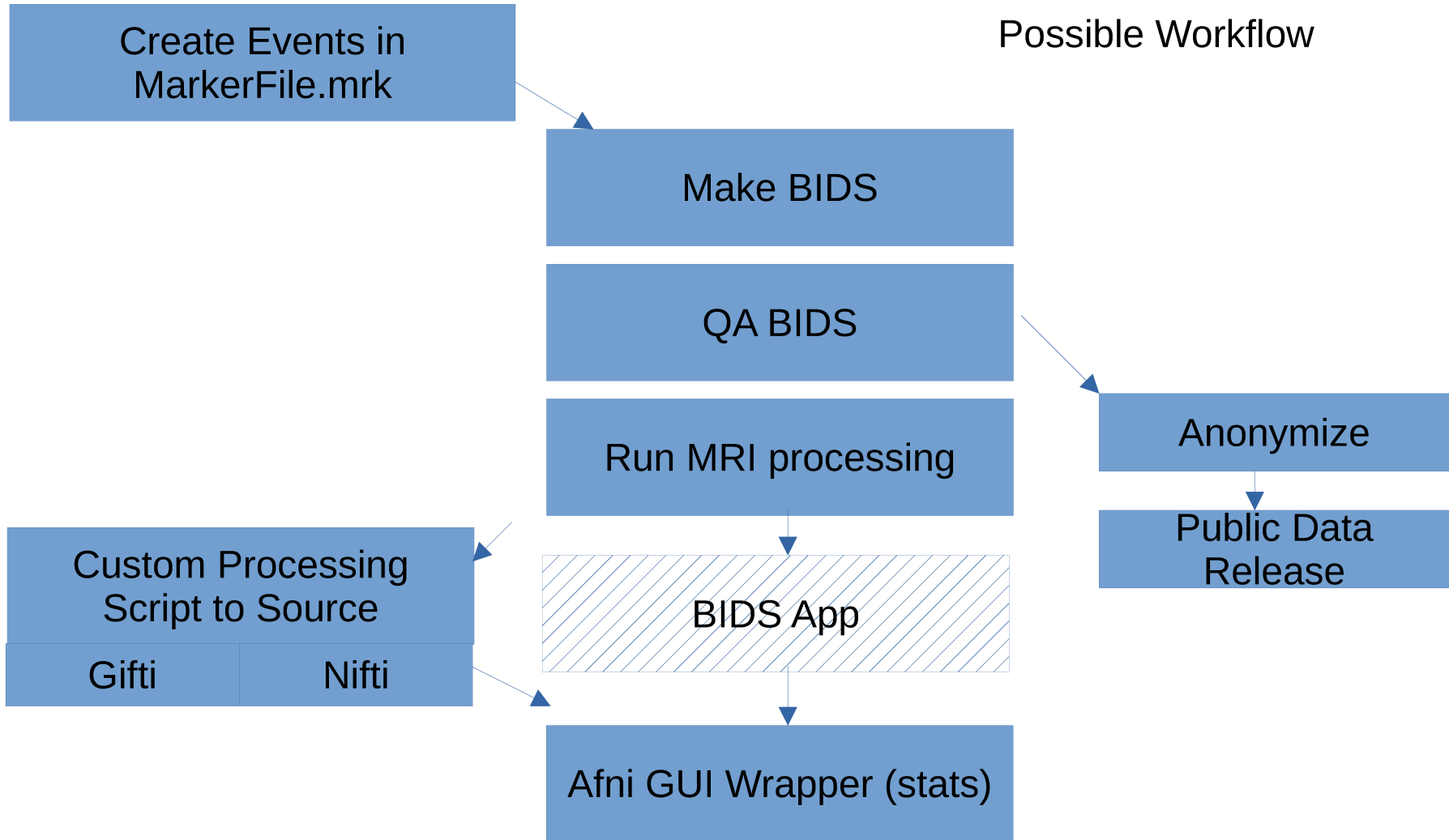
OPTIONAL: CropZeros No_EmptyRoom Freesurfer



Test Env on Biowulf **Mostly** Working



Possible Workflow



Possible

```
~/NIMH_MEGCoregroup/NIMH_HV/bids_staging_batch3$ megcore_gui.py
```

MEG Functions

Load Config:

- Make BIDS
- QA BIDS
-
- Statistics
- EXIT

MEG BIDS conversion

MEG Conversion to BIDS
Warning: currently works with {DATE/dsets} format from scanner

Anonymous: Y

Standard Options

MEG input DIR: /fast/TEST/ANON Browse

MEG Hashcode: ANON

BIDS ID: TEST5

BIDS Output Directory /fast/TEST/BIDS Browse

BIDS Session 1

COREG: None

OPTIONAL: CropZeros No_EmptyRoom Freesurfer

Print CMD RUN EXIT

MEG BIDS conversion

BIDS DIR: Browse

-- PROJECT_QA --

Compute Table View Table

Missing Data

Assess Noise Levels

-- SUBJECT INPUT QA --

MRI ANON Fiducials

3D Coreg Data QA

-- SUBJECT Preproc QA --

Run MR Prep Run MR Prep (VOL)

Print CMD RUN Write Cfg EXIT

MEG BIDS conversion

BIDS DIR:

-- PROJECT_QA --

-- SUBJECT INPUT QA --

-- SUBJECT Preproc QA --



BIDS_table.csv - LibreOffice Calc

File Edit View Insert Format Styles Sheet Data Tools Window Help

Liberation Sans 10 pt B I U A

A1 fx Σ =

	A	B	C	D	E	F	G	H	I	J	K	L	M
1		fname	fname	fname	fname	fname	fname	fname	fname	fname	fname	fname	fname
2	task	EmptyRoom	EmptyRoom6m	airpuff	airpuffAltVer	artifact	gonogo	haridhammer	movie	noise	oddball	rest	sternberg
3	subjid												
4	ON08710	1		1		1			1	1	1	1	1
5	ON09540			1		1			1		1	1	1
6	ON09760			1		1	1		1	1	1	1	1
7	ON09766	1		1		1	1		1	1	1	1	1
8	ON26105	1				1	1		1	1	1	1	1
9	ON33221			1		1	1		1		1		1
10	ON43210	1		1		1	1		1	1	1	1	1
11	ON51111			1		1	1		1		1	1	1
12	ON52220			1	1	1	1		1	1	1	1	1
13	ON62200			1		1	1		1	1	1	1	1
14	ON63221	1				1					1		1
15	ON73200	2		1	1				1	1	1	1	1
16	ON75100			1			1		1	1	1	1	1
17	ON76144	1				1	1	1	1	1	1	1	1
18	ON76320					1	1	1	1	1	1	1	1
19	ON76525			1		1	1		1	1	1	1	1
20	ON76625	1		1		1	1		1	1	1	1	1
21	ON77753			1	1	1	1		1	1	1	1	1
22	ON83320			1	1	1	1		1	1	1	1	1
23	ON84201			1		1	1		1		1	1	1
24	ON85010			1	1	1			1	1	1	1	1
25	ON85301			1	1	1	1		1	1	1	1	1
26	ON85400			1	1	1	1		1	1	1	1	1
27	ON85514			1	1	1	1		1	1	1	1	1
28	ON87304			1		1	1		1		1	2	1
29	ON87550			1	1	1	1		1	1	1	1	1
30	ON87616			1		1	1		1	1	1	1	1
31	ON87631			1	1	1	1		1	1	1	1	1



```
Homogeneous model surface loaded.
Computing the linear collocation solution...
  Matrix coefficients...
    inner skull (2562) -> inner skull (2562) ...
  Inverting the coefficient matrix...
Solution ready.
BEM geometry computations complete.
Setting up the source space with the following parameters:

SUBJECTS_DIR = /fast2/BIDS/derivatives/freesurfer/subjects
Subject      = sub-ON09540
Surface      = white
Octahedron subdivision grade 6

>>> 1. Creating the source space...

Doing the octahedral vertex picking...
Loading /fast2/BIDS/derivatives/freesurfer/subjects/sub-ON09540/surf/lh.white...
Mapping lh sub-ON09540 -> oct (6) ...
  Triangle neighbors and vertex normals...
Loading geometry from /fast2/BIDS/derivatives/freesurfer/subjects/sub-ON09540/surf/lh.sphere...
Setting up the triangulation...
loaded lh.white 4098/126910

Loading /fast2/BIDS/derivatives/freesurfer/subjects/sub-ON09540/surf/rh.white...
Mapping rh sub-ON09540 -> oct (6) ...
  Triangle neighbors and vertex normals...
Loading geometry from /fast2/BIDS/derivatives/freesurfer/subjects/sub-ON09540/surf/rh.sphere...
Setting up the triangulation...
loaded rh.white 4098/125144

Calculating patch information...
Computing patch statistics...
Patch information added...
Computing patch statistics...
```

Name	Size
sub-ON09540_ses-1_task-airpuff_run-01_bem.fif	26.4 MB
sub-ON09540_ses-1_task-airpuff_run-01_fwd.fif	42.0 MB
sub-ON09540_ses-1_task-airpuff_run-01_src.fif	15.3 MB
sub-ON09540_ses-1_task-airpuff_run-01_trans.fif	212 bytes
sub-ON09540_ses-1_task-artifact_run-01_bem.fif	26.4 MB
sub-ON09540_ses-1_task-artifact_run-01_fwd.fif	42.0 MB
sub-ON09540_ses-1_task-artifact_run-01_src.fif	15.3 MB
sub-ON09540_ses-1_task-artifact_run-01_trans.fif	212 bytes
sub-ON09540_ses-1_task-haririhammer_run-01_bem.fif	26.4 MB
sub-ON09540_ses-1_task-haririhammer_run-01_fwd.fif	42.0 MB
sub-ON09540_ses-1_task-haririhammer_run-01_src.fif	15.3 MB
sub-ON09540_ses-1_task-haririhammer_run-01_trans.fif	212 bytes

Create derivatives files: (BEM/FWD/Transform)