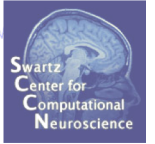
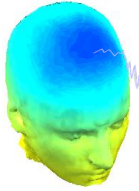


STUDY design and plotting overview



STEP 1

Build a STUDY

STEP 2

Build design(s)

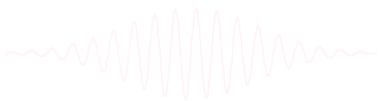
STEP 3

Precompute the data

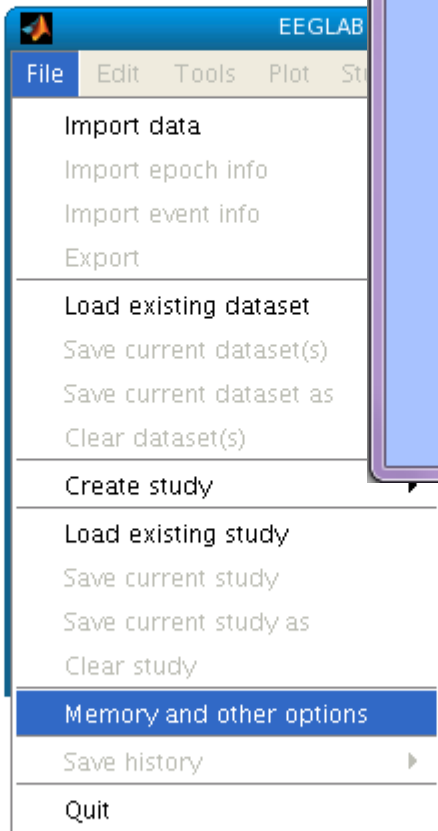
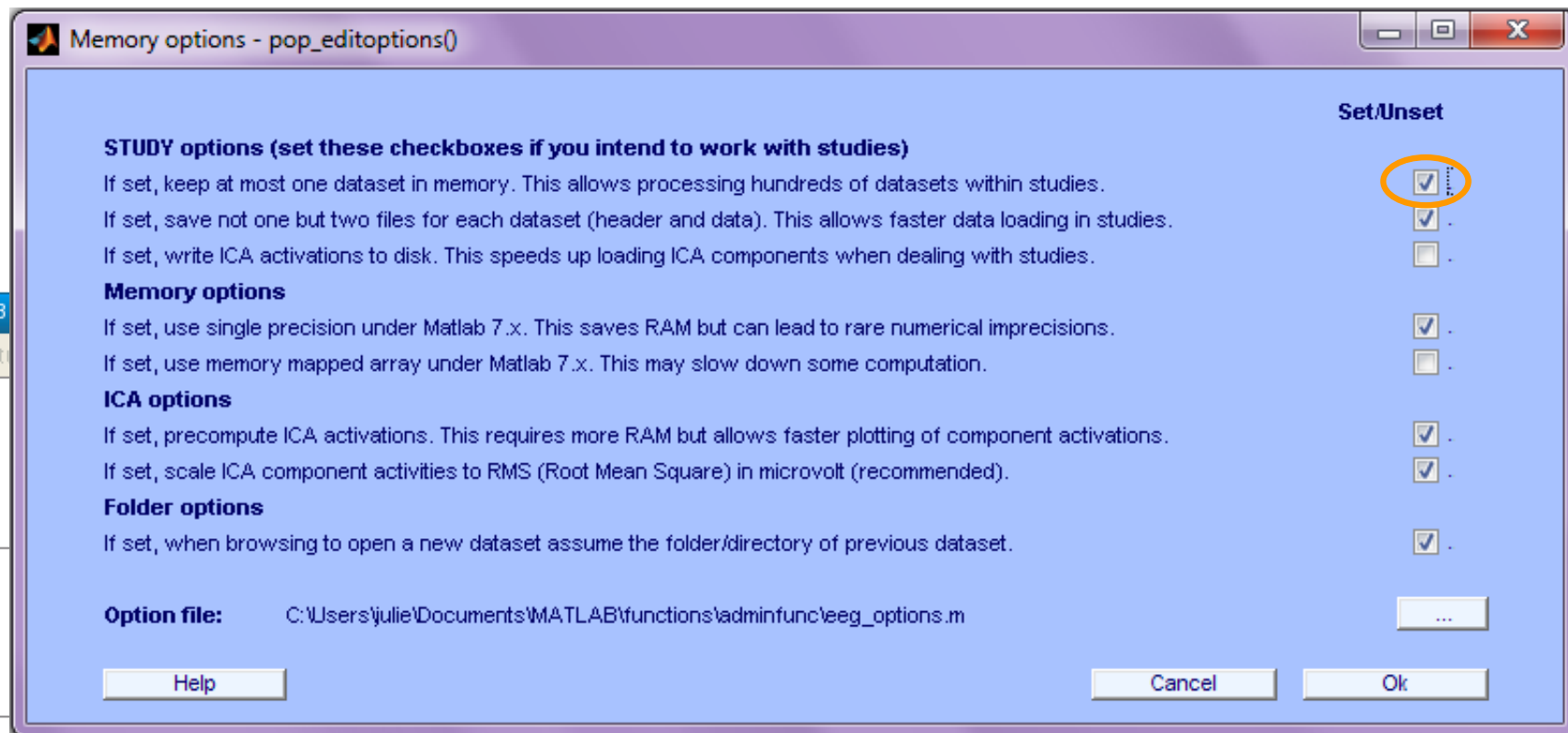
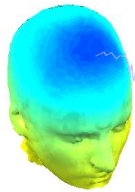
STEP 4

Plot the data

Exercise...

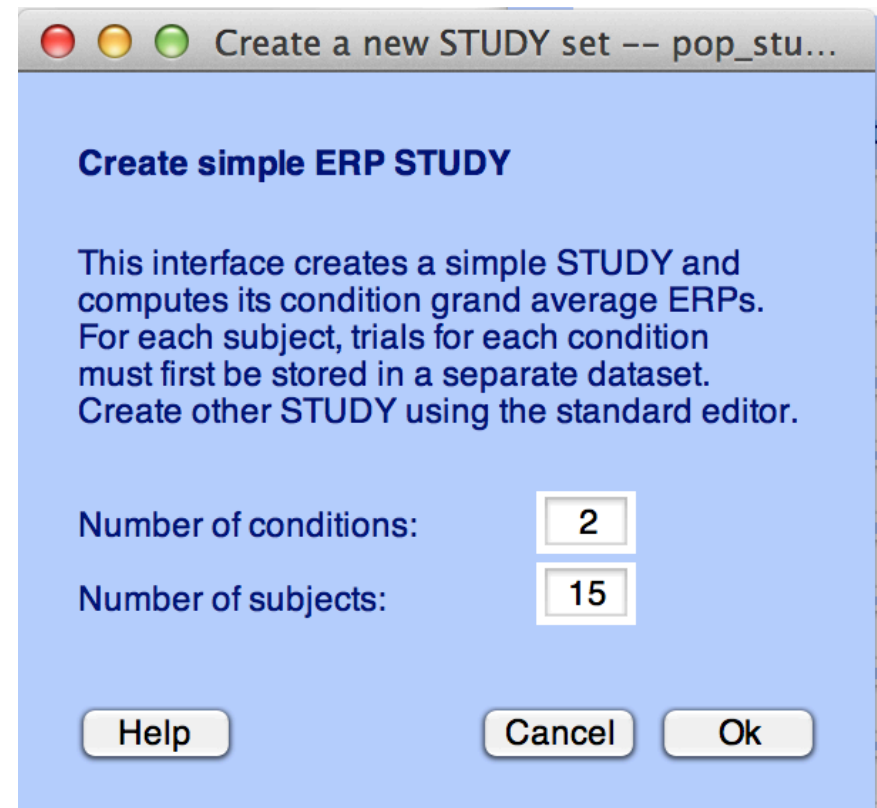
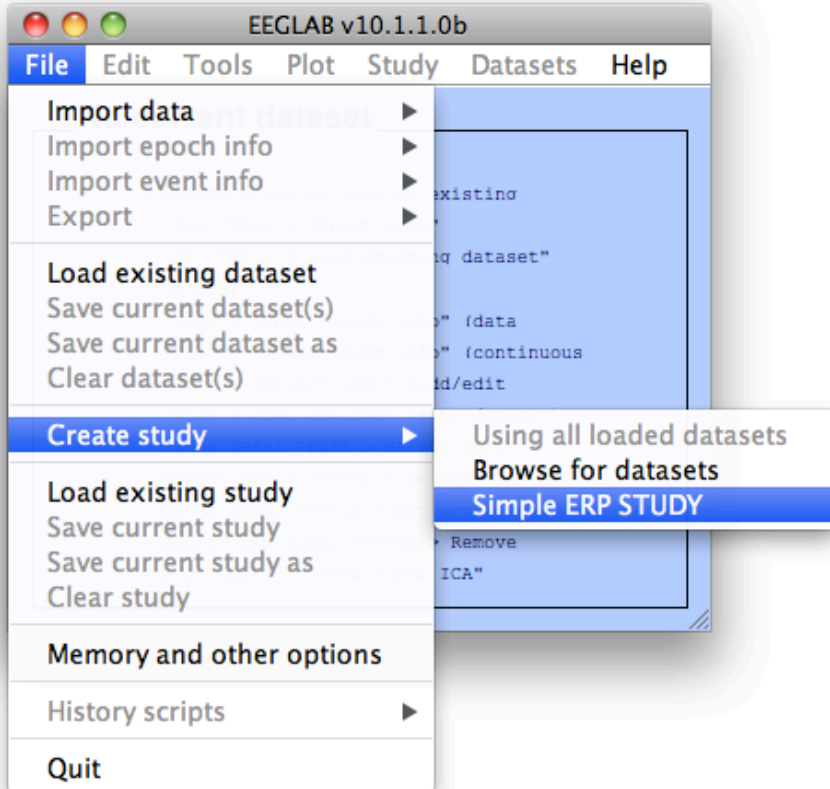
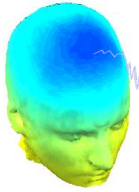


Memory options



**Memory options should change
when using STUDY vs single dataset**

Create simple ERP STUDY



Create a new STUDY set -- pop_studyerp()

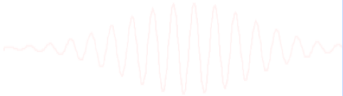
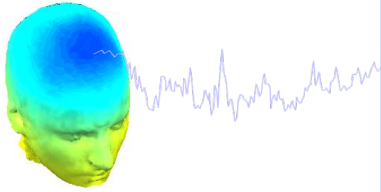
Create simple ERP STUDY

STUDY set name:

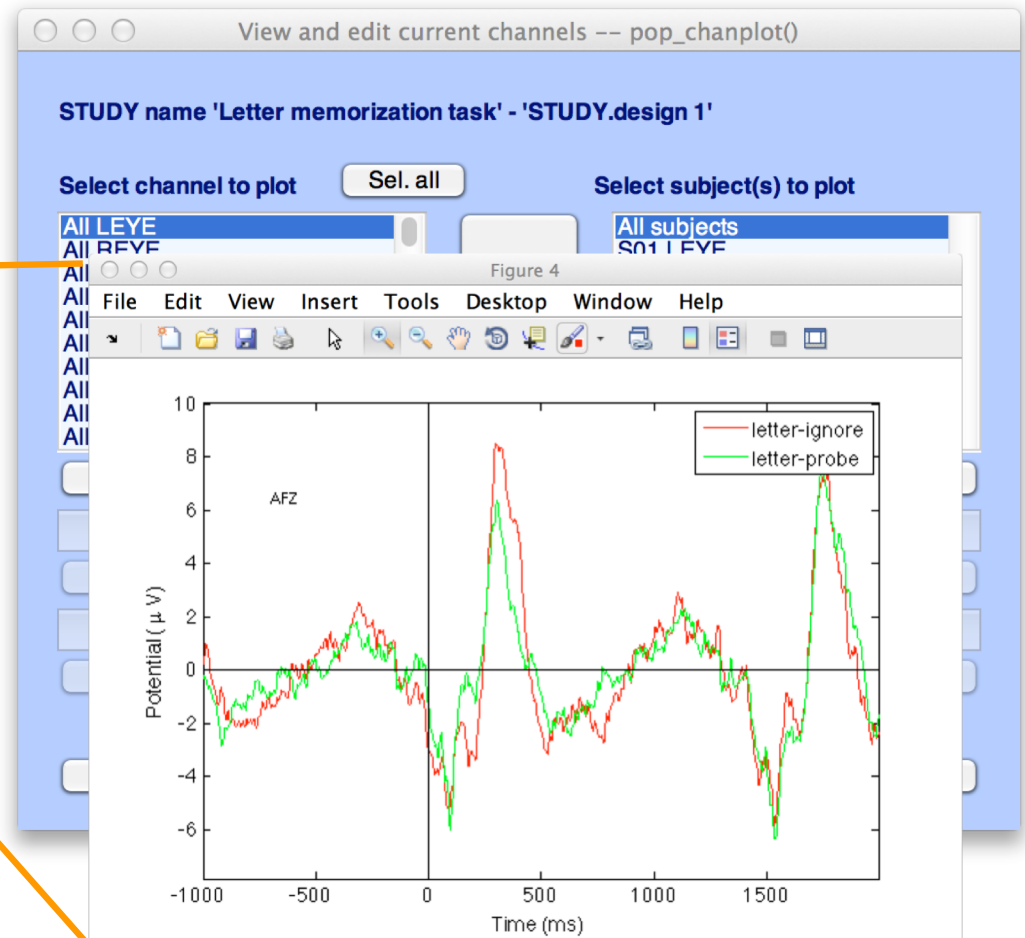
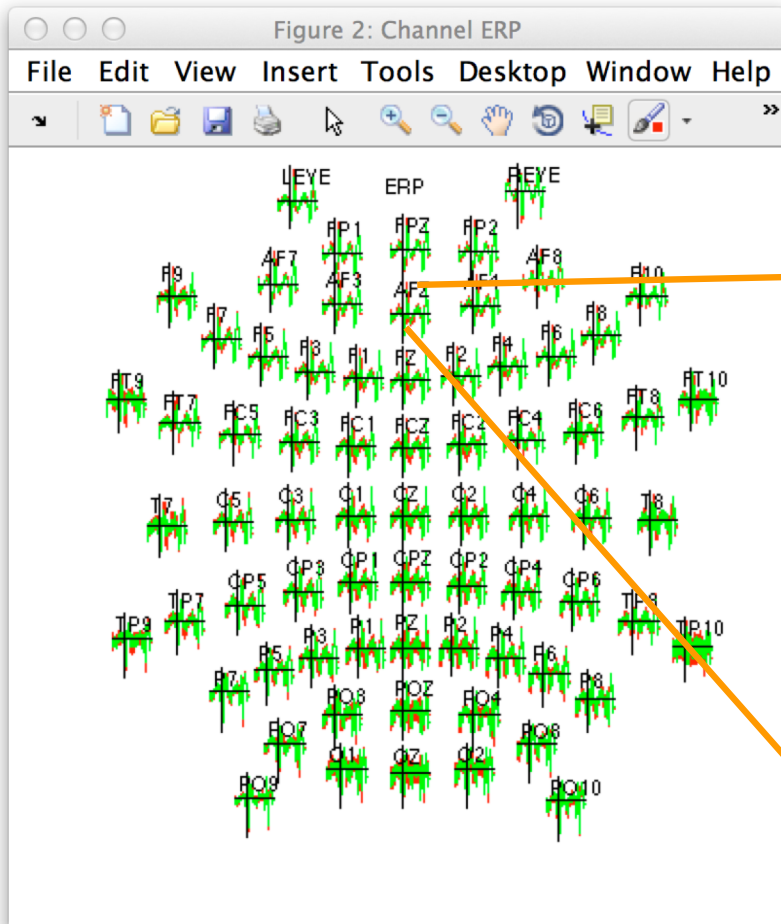
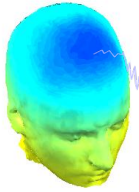
Condition 1 name: Condition 2 name:

Condition 1 datasets		Condition 2 datasets	
<input type="text" value="/data/STUDY/S01/Ignore.set"/>	<input type="button" value="..."/>	<input type="text" value="/data/STUDY/S01/Memorize.set"/>	<input type="button" value="..."/>
<input type="text" value="/data/STUDY/S02/Ignore.set"/>	<input type="button" value="..."/>	<input type="text" value="/data/STUDY/S02/Memorize.set"/>	<input type="button" value="..."/>
<input type="text" value="/data/STUDY/S03/Ignore.set"/>	<input type="button" value="..."/>	<input type="text" value="/data/STUDY/S03/Memorize.set"/>	<input type="button" value="..."/>
<input type="text"/>	<input type="button" value="..."/>	<input type="text"/>	<input type="button" value="..."/>
<input type="text"/>	<input type="button" value="..."/>	<input type="text"/>	<input type="button" value="..."/>
<input type="text"/>	<input type="button" value="..."/>	<input type="text"/>	<input type="button" value="..."/>
<input type="text"/>	<input type="button" value="..."/>	<input type="text"/>	<input type="button" value="..."/>
<input type="text"/>	<input type="button" value="..."/>	<input type="text"/>	<input type="button" value="..."/>
<input type="text"/>	<input type="button" value="..."/>	<input type="text"/>	<input type="button" value="..."/>
<input type="text"/>	<input type="button" value="..."/>	<input type="text"/>	<input type="button" value="..."/>
<input type="text"/>	<input type="button" value="..."/>	<input type="text"/>	<input type="button" value="..."/>
<input type="text"/>	<input type="button" value="..."/>	<input type="text"/>	<input type="button" value="..."/>
<input type="text"/>	<input type="button" value="..."/>	<input type="text"/>	<input type="button" value="..."/>
<input type="text"/>	<input type="button" value="..."/>	<input type="text"/>	<input type="button" value="..."/>
<input type="text"/>	<input type="button" value="..."/>	<input type="text"/>	<input type="button" value="..."/>
<input type="text"/>	<input type="button" value="..."/>	<input type="text"/>	<input type="button" value="..."/>
<input type="text"/>	<input type="button" value="..."/>	<input type="text"/>	<input type="button" value="..."/>
<input type="text"/>	<input type="button" value="..."/>	<input type="text"/>	<input type="button" value="..."/>

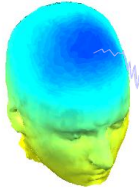
When using more than 1 condition, datasets on each line must correspond to the same subject.



Create simple ERP STUDY

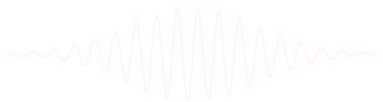


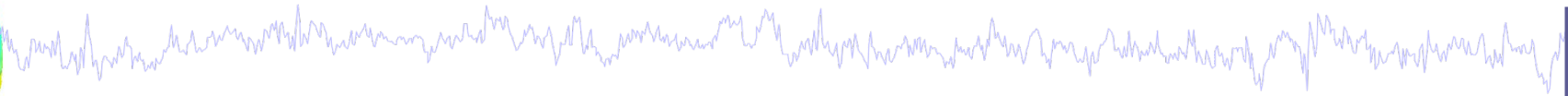
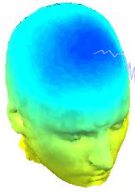
Exercises



Suggestion for exercise

1. From the GUI, select “File > Create STUDY > Simple ERP STUDY”
2. Enter 2 conditions “letter-ignore” and “letter-memorize”
3. In the column for “letter-ignore” select datasets “ignore.set” for 3 subjects S01, S02, S03 (in the STUDY folder)
4. In the column for “letter-memorize” select datasets “memorize.set” for 3 subjects S01, S02, S03 (in the STUDY folder)
5. Press OK.





EEGLAB v15.x (dev)

File Edit Tools Plot Study Datasets Help

- Import data **Sternberg**
- Import epoch info
- Import event info
- Export
- Load existing dataset
- Save current dataset(s)
- Save current dataset as
- Clear dataset(s)
- Create study**
 - Using all loaded datasets
 - Browse for datasets**
 - Simple ERP STUDY
 - to precluster
- Load existing study
- Save current study
- Save current study as
- Clear study / Clear all
- Memory and other options
- History scripts
- Manage EEGLAB extensions
- Quit

Create a new STUDY set -- pop_study()

Edit STUDY set information - remember to save changes

STUDY set name: Sternberg

STUDY set task name: Sternberg

STUDY set notes:

	dataset filename	browse	subject	session	condition	group	Select by r.v.	
1	/data/oral/EEGLAB/ASPET_2017/L	...	S01	1	memorize	1	Comp.: 3 5 ...	Clear
2	/data/oral/EEGLAB/ASPET_2017/L	...	S01	1	ignore	1	Comp.: 3 5 ...	Clear
3	/data/oral/EEGLAB/ASPET_2017/L	...	S01	1	probe	1	Comp.: 3 5 ...	Clear
4	/data/oral/EEGLAB/ASPET_2017/L	...	S02	1	memorize	1	Comp.: 5 6 ...	Clear
5	/data/oral/EEGLAB/ASPET_2017/L	...	S02	1	ignore	1	Comp.: 5 6 ...	Clear
6	/data/oral/EEGLAB/ASPET_2017/L	...	S02	1	probe	1	Comp.: 5 6 ...	Clear
7	/data/oral/EEGLAB/ASPET_2017/L	...	S03	1	memorize	1	Comp.: 6 8 ...	Clear
8	/data/oral/EEGLAB/ASPET_2017/L	...	S03	1	ignore	1	Comp.: 6 8 ...	Clear
9	/data/oral/EEGLAB/ASPET_2017/L	...	S03	1	probe	1	Comp.: 6 8 ...	Clear
10	/data/oral/EEGLAB/ASPET_2017/L	...	S04	1	memorize	1	Comp.: 1 2 ...	Clear

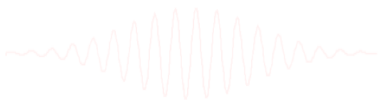
Important note: Removed datasets will not be saved before being deleted from EEGLAB memory

< Page 1 >

Dataset info (condition, group, ...) differs from study info. Iset1 = Overwrite dataset info for each dataset on disk.

Delete cluster information (to allow loading new datasets, set new components for clustering, etc.)

Help Cancel Ok



EEGLAB v9.0.0.0b

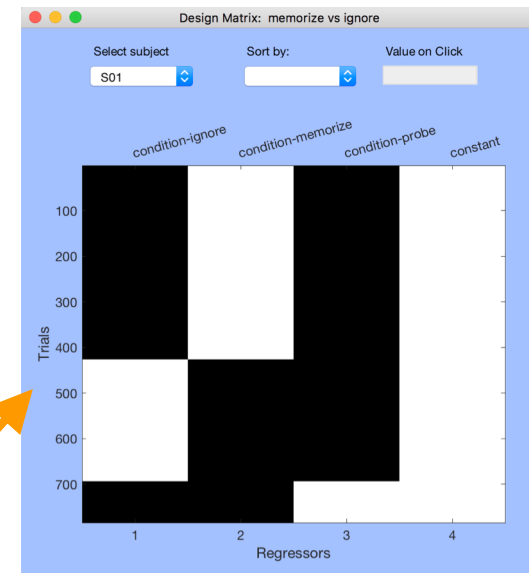
File Edit Tools Plot **Study** Datasets Help

STUDY set:

- Study filename: ...s/data
- Study task name
- Nb of subjects
- Nb of conditions
- Nb of sessions
- Nb of groups
- Epoch consistency
- Channels per frame 61
- Channel locations ves
- Clusters 1
- Status Pre-clustered
- Total size (Mb) 8.2

- Edit study info
- Select/Edit study design(s)
- Precompute channel measures
- Plot channel measures
- Precompute component measures
- Measure Product clustering
- PCA clustering (original)
- Edit/plot clusters

Create design



Edit STUDY design -- pop_studydesign()

Select STUDY design New Rename Delete **Design Matrix**

Comparing conditions
Memorize-Ignore -- Load
Probe Only -- Load
Design 4
Ignore+Memorize vs Probe
My design

Resave STUDY

Edit selected design

Independent variables New Import **Edit** Delete Subjects

Categorical variable: condition - Values (ignore - memo

S07
S08
S09
S10
S11
S12
S13

Delete all pre-computed datafiles for this STUDY design

Web help Cancel Ok

Add variable

Select independent variable

condition
duration
init_index
init_time
inset
load
pres_trial

This is a categorical var.

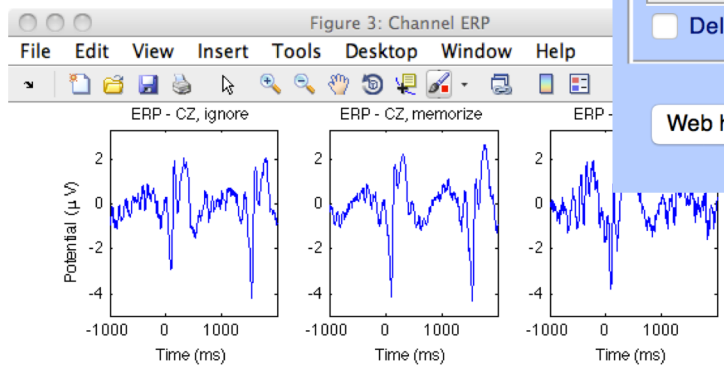
Select variable values

ignore
memorize
probe
ignore & memorize

Combine selected values

Cancel Ok

1x3 design



EEGLAB v7.1.7.18b

File Edit Tools Plot Study Datasets Help

Dataset info
Event fields
Event values
About this dataset
Channel locations
Select data
Select data using events
Select epochs or events
Copy current dataset
Append datasets
Delete dataset(s)
ICA weights
Dataset size (Mb)

70
610133
1
1303
250
0.000
2440.528
CZ
Yes
Yes
349

ntinuous -- Rere...

Edit event values -- pop_editeventvals()

Edit event field values (currently 1303 events)

Delete event

Number of event fields is unlimited

Trial	1
Event_Type	Picture
Type	nonWM
Latency (sec)	3.112
Time	0
Uncertainty	2
Duration	50283
Uncertainty2	3
ReqTime	0
ReqDur	50000
init_index	1
init_time	0.0227
Duration (sec)	0
Load	

Event Num

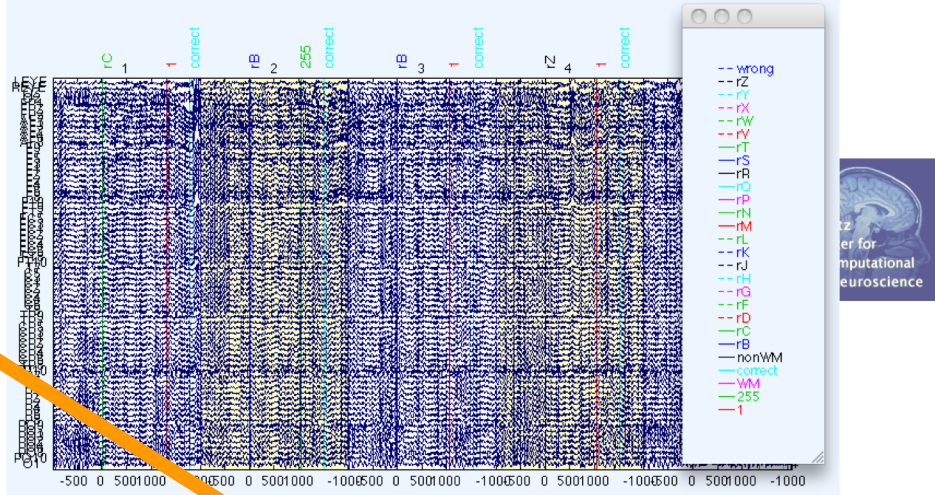
Insert event << < 1 > >> Append event

Re-order events (for review only)

Main sorting field: No field selected
Secondary sorting field: No field selected

Re-sort

Cancel Help Ok



Create a new STUDY set -- pop_study()

EDIT STUDY set information - remember to save changes

STUDY set name: Sternberg
STUDY set task name: Sternberg
STUDY set notes:

dataset filename	browse	subject	session	condition	group	Select by r.v.
1	C:\Users\julie\Documents\Wor...	S01		memorize		Comp.: 3 5 ... Clear
2	C:\Users\julie\Documents\Wor...	S01		ignore		Comp.: 3 5 ... Clear
3	C:\Users\julie\Documents\Wor...	S01		probe		Comp.: 3 5 ... Clear
4	C:\Users\julie\Documents\Wor...	S02		memorize		Comp.: 5 6 ... Clear
5	C:\Users\julie\Documents\Wor...	S02		ignore		Comp.: 5 6 ... Clear
6	C:\Users\julie\Documents\Wor...	S02		probe		Comp.: 5 6 ... Clear
7	C:\Users\julie\Documents\Wor...	S03		memorize		Comp.: 6 7 ... Clear
8	C:\Users\julie\Documents\Wor...	S03		ignore		Comp.: 6 7 ... Clear
9	C:\Users\julie\Documents\Wor...	S03		probe		Comp.: 6 7 ... Clear
10	C:\Users\julie\Documents\Wor...	S04		memorize		Comp.: 1 2 ... Clear

Important note: Removed datasets will not be saved before being deleted from EEGLAB memory

Page 1

Dataset info (condition, group, ...) differs from study info. [set] = Overwrite dataset info.
Delete cluster information (to allow loading new datasets, set new components for clustering, etc.)

Help Cancel Ok

Edit STUDY design -- pop_editstudydesign()

Add variable

Select STUDY design

Comparing conditions
Memorize-Ignore -- Load
Probe Only -- Load
Design 4
Ignore+Memorize vs Probe
My design

Resave STUDY

Select independent variable

condition
duration
init_index
init_time
inset
load
pres_trial

This is a categorical var.

Edit selected design

independent variables

Categorical variable: condition - Values (ig...)

ignore
memorize
probe
ignore & memorize

Delete all pre-computed datafiles for th...

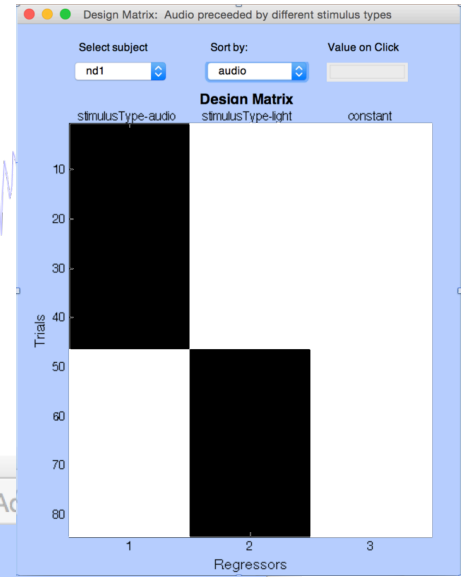
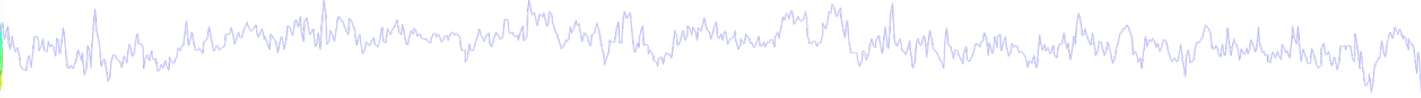
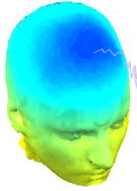
Combine selected values

Web help

Cancel Ok

Design independent of # of files per subject

Other design examples



Edit STUDY design -- pop_studydesign()

Select STUDY design New Rename Delete Design Matrix

- Audio versus light all subjects
- All stimulus type - non dual subjects only
- Blank versus other stimulus type - non dual subjects only
- Audio preceded by different stimulus types
- Audio versus light across sessions - non dual subjects only
- Audio versus light across presentation - non dual subjects only

Resave STUDY

Edit selected design

Independent variables New Import Edit Delete **Subjects**

Categorical variable: stimulusType - Values (audio - light)
Categorical variable: group - Values (control - nondual)

- nd2
- nd3
- nd4
- nd5
- nd6
- nd7
- nd8

Delete all pre-computed datafiles for this STUDY design

Web help Cancel Ok

Add variable

Select independent variable

- dataprob
- indexin session
- presentation
- preevent
- session
- type
- stimulusType

This is a categorical var. ▾

Select variable values

- audio
- blank
- both
- light
- audio & light

Combine selected values

Cancel Ok

Select independent variable

- group
- dataprob
- indexin session
- presentation
- preevent
- session
- type

This is a categorical var. ▾

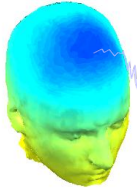
Select variable values

- control
- nondual

Combine selected values

Cancel Ok

Other design examples



Edit STUDY design -- pop_studydesign()

Select STUDY design New Rename Delete Design Matrix

- Audio versus light all subjects
- All stimulus type - non dual subjects only
- Blank versus other stimulus type - non dual subjects only
- Audio preceded by different stimulus types
- Audio versus light across sessions - non dual subjects only
- Audio versus light across presentation - non dual subjects only

Resave STUDY

Edit selected design

Independent variables New Import Edit Delete

Categorical variable: stimulusType - Values (audio - light)
 Categorical variable: session - Values (1 - 2)

Subjects

- c6
- c7
- c8
- nd1
- nd2
- nd3
- nd4

Delete all pre-computed datafiles for this STUDY design

Web help Cancel Ok

Add variable

Select independent variable

- datapro
- indexsession
- presentation
- prevent
- session
- type
- stimulusType

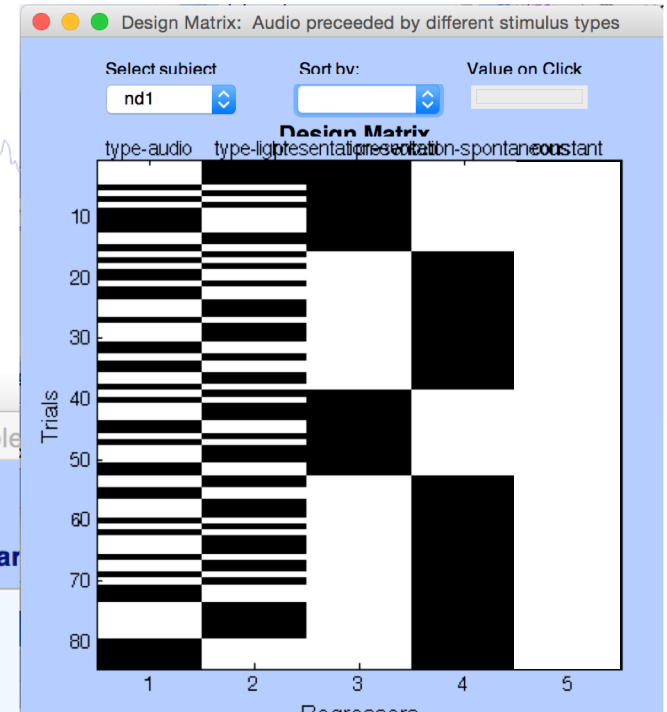
This is a categorical var. ▾

Select variable values

- audio
- blank
- both
- light
- audio & light

Combine selected values

Cancel Ok



Prevent

- session
- type

This is a categorical var. ▾

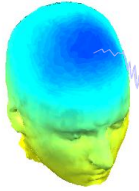
Select variable values

- evoked
- spontaneous

Combine selected values

Cancel Ok

STUDY design and plotting overview



STEP 1

Build a STUDY

STEP 2

Build design(s)

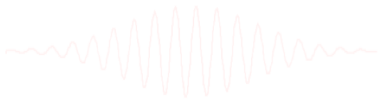
STEP 3

Precompute the data

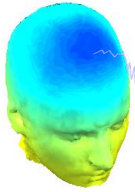
STEP 4

Plot the data

Exercise...



Precompute data measures



EEGLAB v13.x (dev)

File Edit Tools Plot **Study** Datasets Help

STUDY set: Sternberg

- Study filename: ...6/USB
- Study task name
- Nb of subjects
- Nb of conditions
- Nb of sessions
- Nb of groups
- Epoch consistency
- Channels per frame
- Channel locations
- Clusters: 1
- Status: Ready to precluster
- Total size (Mb): 229.4

Study menu options:

- Edit study info
- Select/Edit study design(s)
- Precompute channel measures**
- Plot channel measures
- Precompute component measures
 - PCA clustering (original)
 - Edit/plot clusters
 - Cluster components by correlation (CORRMAP)
 - std_ErpCalc

Select and compute component measures for later clustering -- pop_precomp()

Pre-compute channel measures for STUDY 'Sternberg' - 'STUDY.design 1'

Channel list (default:all) [text box] ...

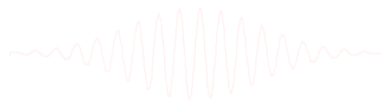
- Spherical interpolation of missing channels (performed after optional ICA removal below)
- Remove ICA artifactual components pre-tagged in each dataset
- Remove artifactual ICA cluster or clusters (hold shift key)

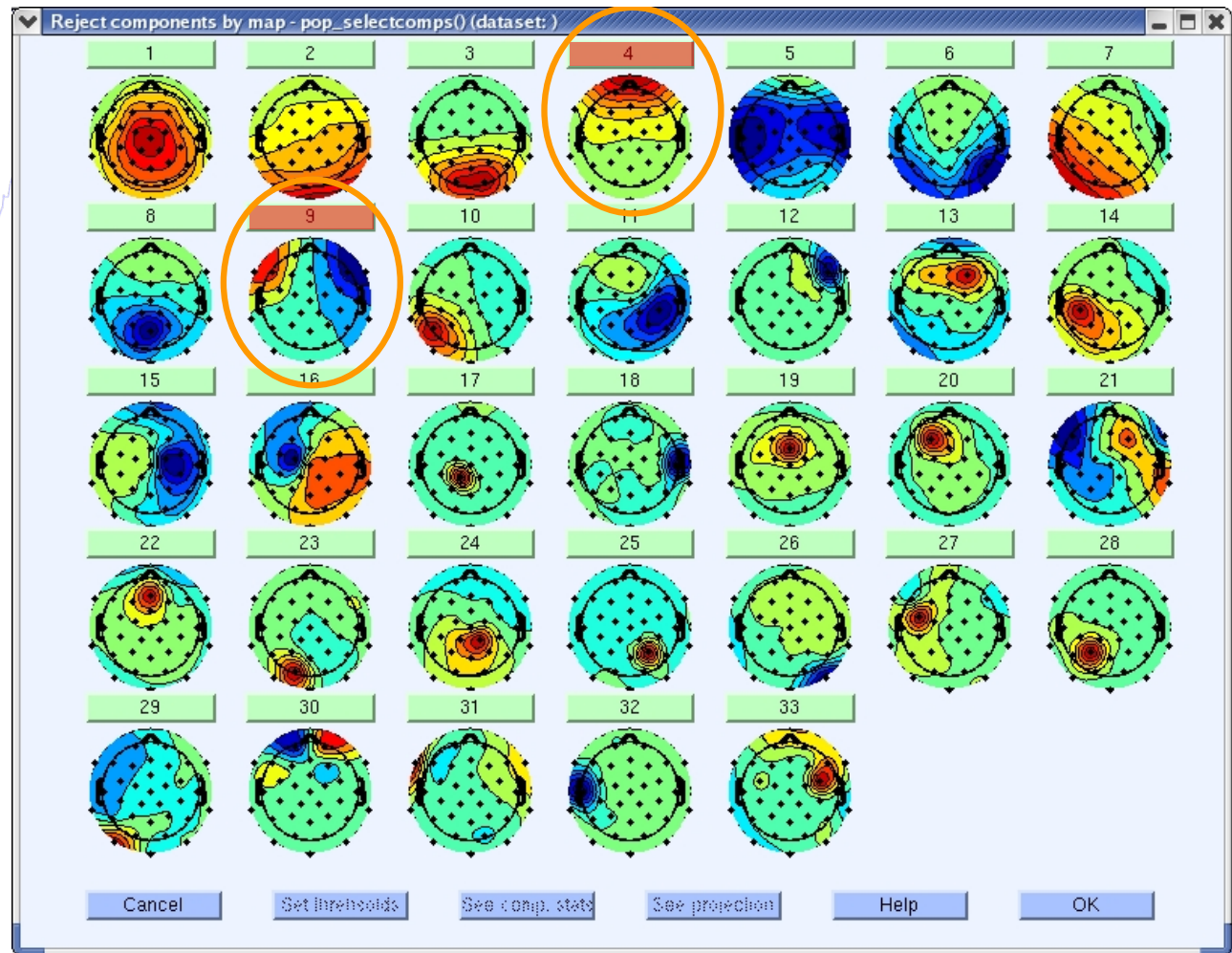
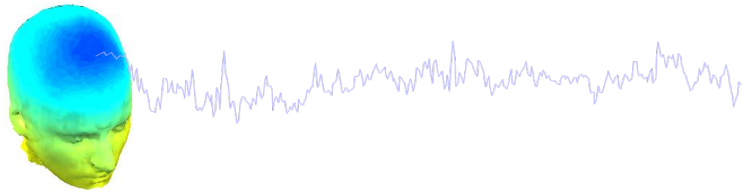
ParentCluster 1
Cis 2
Cis 3
Cis 4

List of measures to precompute

- ERPs Baseline ((min max] in ms) [text box]
- Power spectrum Spectopo parameters [text box: 'specmode', 'fft'] Test
- ERSPs } Time/freq. parameters [text box: 'cycles', [3 0.5], 'nfreqs', 100] Test
- ITCs }
- Save single-trial measures for single-trial statistics - requires disk space
- Recompute even if present on disk

Buttons: Help, Cancel, Ok





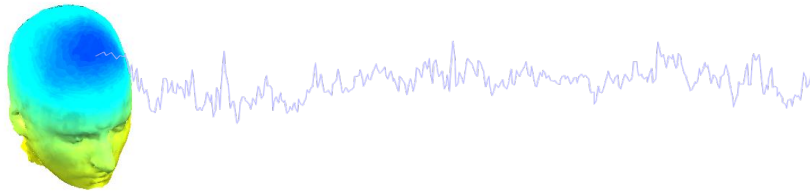
EEGLAB v9.0.3.4b

File Edit **Tools** Plot Study Datasets Help

- #3: S...
- Filename
- Channels
- Frames p...
- Epochs
- Events
- Sampling
- Epoch st...
- Epoch en...
- Referenc...
- Channel
- ICA weig...
- Dataset

- Change sampling rate
- Filter the data
- Re-reference
- Interpolate electrodes
- Reject continuous data by eye
- Extract epochs
- Remove baseline
- Run ICA
- Remove components
- Automatic channel rejection
- Automatic epoch rejection
- Reject data epochs
- Reject data using ICA
- Locate dipoles using DIPFIT 2.x
- Peak detection using EEG toolbox
- FMRIB Tools
- Locate dipoles using LORETA

- Reject components by map
- Reject data (all methods)
- Reject by inspection
- Reject extreme values
- Reject by linear trend/variance
- Reject by probability
- Reject by kurtosis
- Reject by spectra
- Export marks to data reject
- Reject marked epochs



View and edit current channels -- pop_chanplot()

Channel to plot: **Sel. all**

Select subject(s) to plot

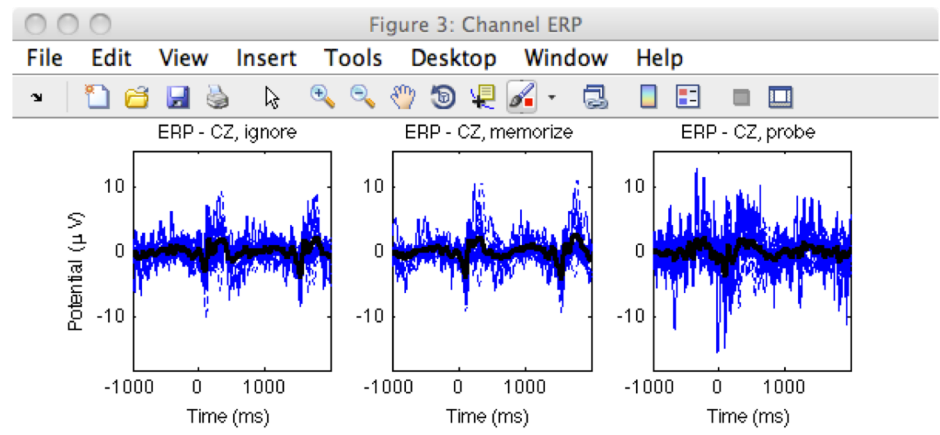
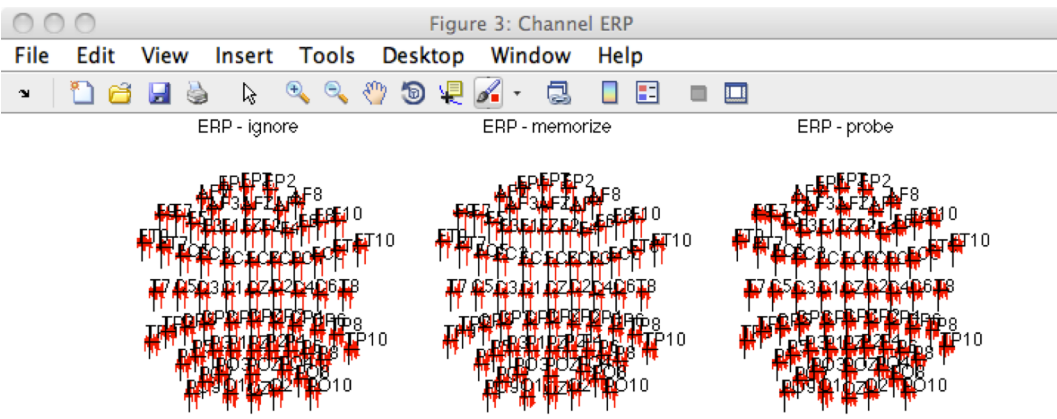
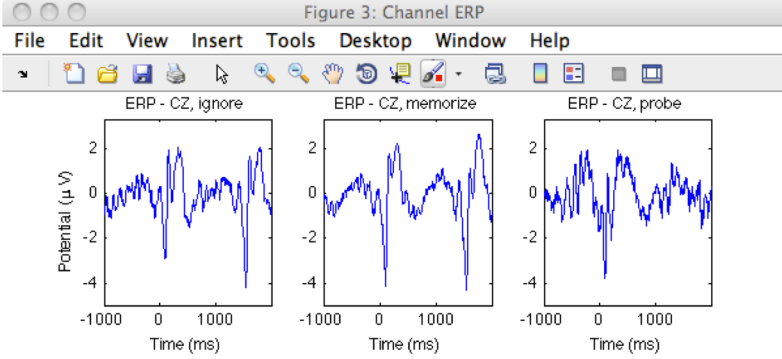
Channel list: All CZ, All C2, All C4, All C6, All T8, All TP9, All TP7, All CP5, All CP3, All CP1

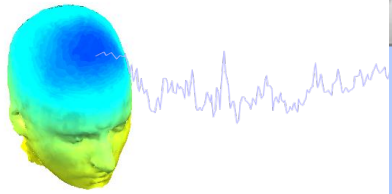
Subject list: All subjects, S01 CZ, S02 CZ, S03 CZ, S04 CZ, S05 CZ, S06 CZ, S07 CZ, S08 CZ, S09 CZ

Buttons: Plot ERPs, Plot spectra, Plot ERPimage, Plot ERSPs, Plot ITCs, Stats, Params, Plot ERP(s), Plot spectra, Plot ERPimage(s), Plot ERSP(s), Plot ITC(s), Help, Cancel, Ok

Choose which channel

Choose which subject





View and edit current channels -- pop_chanplot()

STUDY name 'Sternberg' - 'Comparing conditions'

Select channel to plot Sel. all Select subject(s) to plot

All CZ	STATS	All subjects
All C2		S01 CZ
All C4		S02 CZ
All C6		S03 CZ
All T8		S04 CZ
All TP9		S05 CZ
All TP7		S06 CZ
All CP5		S07 CZ
All CP3		S08 CZ
All CP1		S09 CZ

Plot ERPs Params Plot ERPs

Plot spectra Params Plot spectra

Plot ERPimage Params Plot ERPimage(s)

Plot ERSPs Params Plot ERSP(s)

Plot ITCs Params Plot ITC(s)

Cancel Ok

ERP plotting options -- pop_erppar...

ERP plotting options

Time limits (ms) [low high]

Plot limits [low high]

Lowpass plotted data [Hz]

ERP plotting format

Plot first variable on the same panel

Plot second variable on the same panel

Multiple channels selection

Plot channels in scalp array

Plot topography at time (ms)

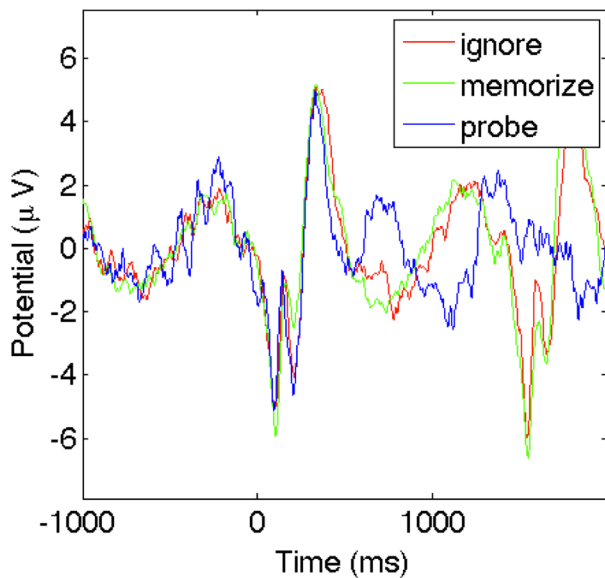
Average selected channels

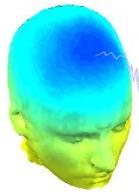
Cancel Ok

Figure 4: Channel ERP

File Edit View Insert Tools Desktop Window Help

ERP - CZ





View and edit current channels -- pop_chan...

STUDY name 'Sternberg' - 'Comparing conditions'

Select channel to plot Sel. all

All P6
All P8
All PO9
All PO7
All PO3
All POZ
All PO4
All PO8
All PO10
All O1

STATS

All subjects
S01 All
S02 All
S03 All
S04 All
S05 All
S06 All
S07 All
S08 All
S09 All

Plot ERPs	Params	Plot ERPs
Plot spectra	Params	Plot spectra
Plot ERPimage	Params	Plot ERPimage(s)
Plot ERSPs	Params	Plot ERSP(s)
Plot ITCs	Params	Plot ITC(s)

Help Cancel Ok

ERP plotting options -- pop_erppar...

ERP plotting options

Time limits (ms) [low high]

Plot limits [low high]

Lowpass plotted data [Hz]

ERP plotting format

Plot first variable on the same panel

Plot second variable on the same panel

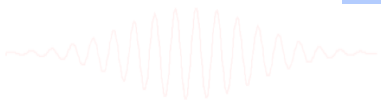
Multiple channels selection

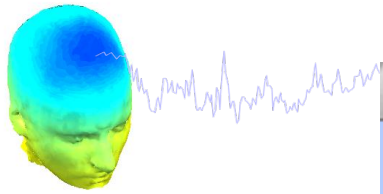
Plot channels in scalp array

Plot topography at time (ms) 200 300

Average selected channels

Cancel Ok





View and edit current channels -- pop_chan...

STUDY name 'Sternberg' - 'Comparing conditions'

Select channel to plot Sel. all

- All P6
- All P8
- All PO9
- All PO7
- All PO3
- All POZ
- All PO4
- All PO8
- All PO10
- All O1

Select subject(s)

- All subjects
- S01 All
- S02 All
- S03 All
- S04 All
- S05 All
- S06 All
- S07 All
- S08 All
- S09 All

STATS

Plot ERPs

Params

Plot spectra

Params

Plot ERPimage

Params

Plot ERPimage(s)

ERP plotting options

Time limits (ms) [low high]

Plot limits [low high]

Lowpass plotted data [Hz]

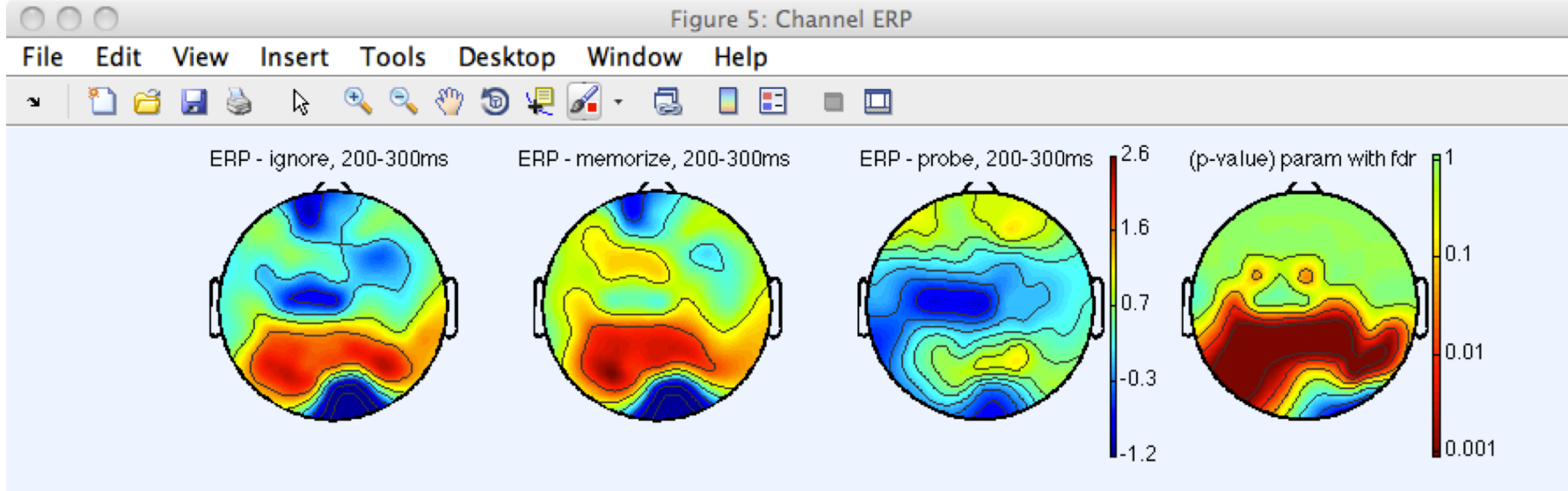
ERP plotting format

- Plot first variable on the same panel
- Plot second variable on the same panel

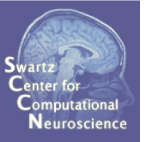
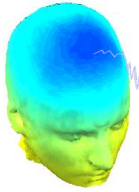
Multiple channels selection

- Plot channels in scalp array
- Plot topography at time (ms)
- Average selected channels

Cancel Ok



Computing Spectrum



Select and compute component measures for later clustering -- pop_precomp()

Pre-compute channel measures for STUDY 'Sternberg' - 'STUDY.design 1'

Channel list (default:all) ...

Spherical interpolation of missing channels (performed after optional ICA removal below)

Remove ICA artifactual components pre-tagged in each dataset

Remove artifactual ICA cluster or clusters (hold shift key)

ParentCluster 1
Cls 2
Cls 3
Cls 4

List of measures to precompute

ERPs Baseline ([min max] in ms)

Power spectrum Spectopo parameters **'specmode', 'fft'** Test

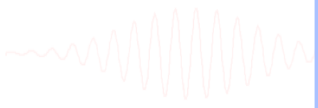
ERSPs } Time/freq. parameters 'cycles', [3 0.5], 'nfreqs', 100 Test

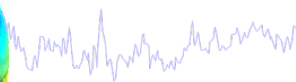
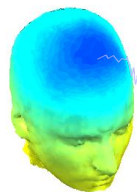
ITCs }

Save single-trial measures for single-trial statistics - requires disk space

Recompute even if present on disk

Help Cancel Ok





Choose which channel

View and edit current channels -- pop_chanplot()

STUDY name 'Sternberg' - 'STUDY.design 1'

Select channel to plot **Sel. all**

- All F08
- All FT8
- All FT10
- All T7
- All C5
- All C3
- All C1
- All CZ**
- All C2
- All C4
- All C6

Select subject(s) to plot

- All subjects**
- S01 CZ
- S02 CZ
- S03 CZ
- S04 CZ
- S05 CZ
- S06 CZ
- S07 CZ
- S08 CZ
- S09 CZ

Buttons: Plot ERP(s), Plot spectra, Plot ERSP(s), Plot ITC(s)

Choose which subject

Figure 4: Channel Spectrum

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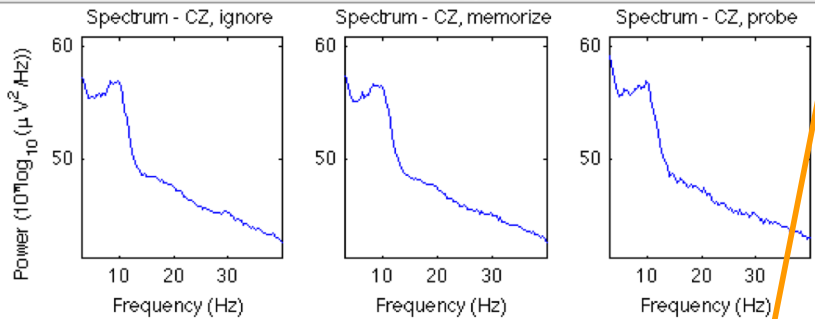


Figure 5: Channel Spectrum

File Edit View Insert Tools Desktop Window Help

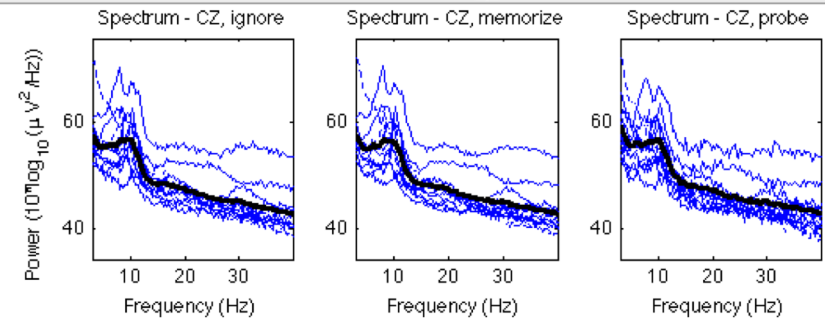


Figure 6: Channel Spectrum

File Edit View Insert Tools Desktop Window Help

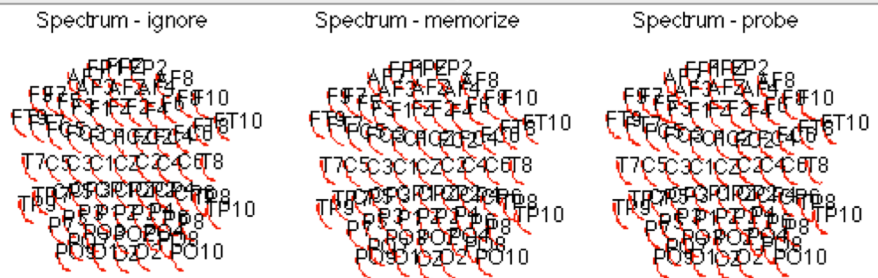
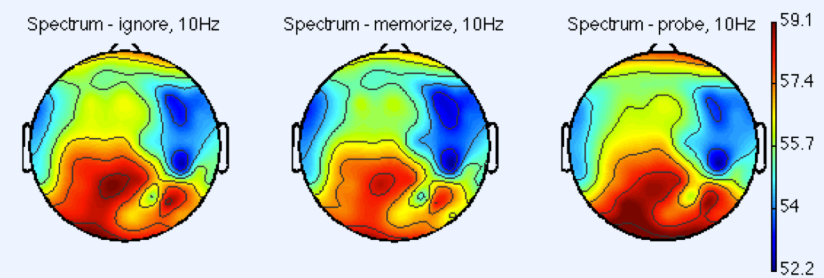
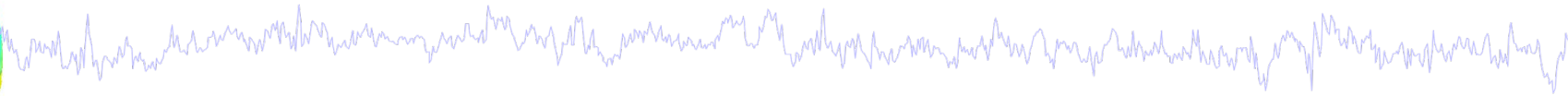
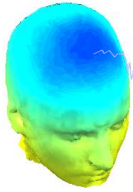


Figure 4: Channel Spectrum

File Edit View Insert Tools Desktop Window Help



Computing ERSP



Select and compute component measures for later clustering -- pop_precomp()

Pre-compute channel measures for STUDY 'Sternberg' - 'Design 2'

Channel list (default:all) ...

- Spherical interpolation of missing channels (performed after optional ICA removal below)
- Remove ICA artifactual components pre-tagged in each dataset
- Remove artifactual ICA cluster or clusters (hold shift key)

ParentCluster 1
Cls 2
Cls 3
Cls 4

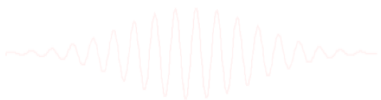
List of measures to precompute

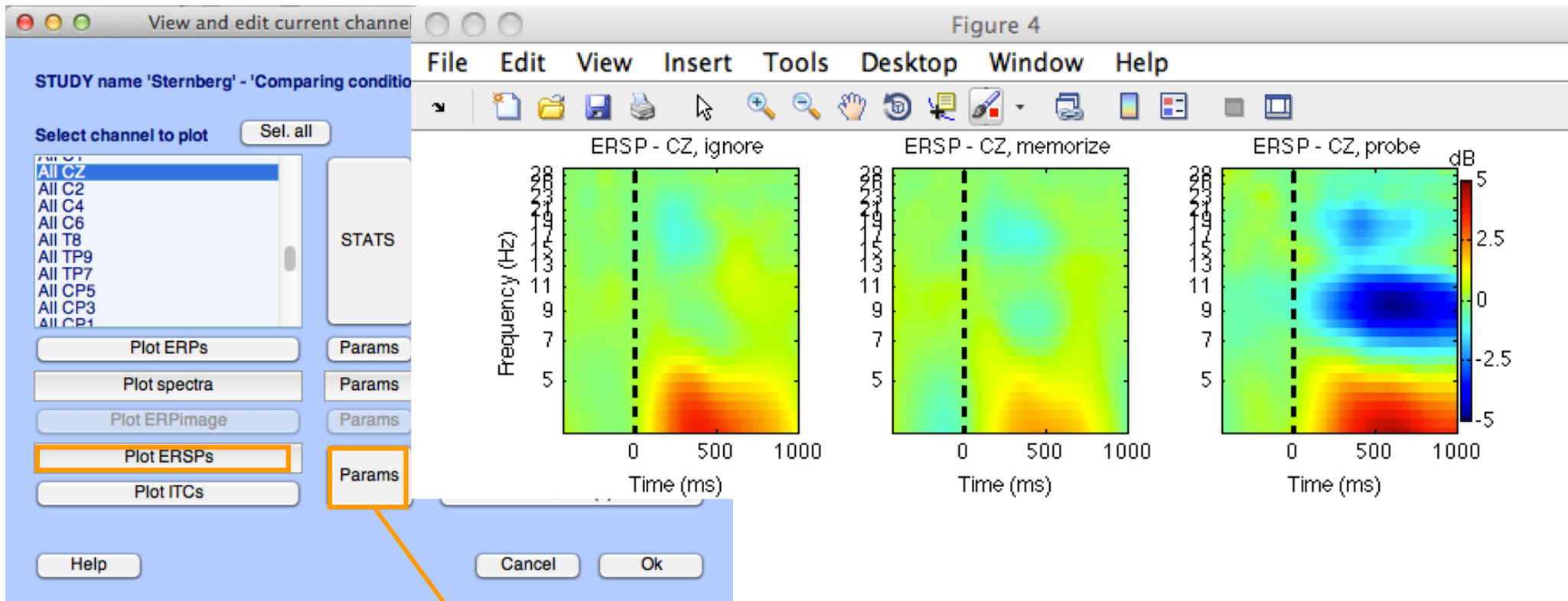
- ERPs Baseline ([min max] in ms)
- Power spectrum Spectopo parameters Test
- ERSPs Time/freq. parameters Test
- ITCs

- Save single-trial measures for single-trial statistics - requires disk space
- Recompute even if present on disk

Help Cancel Ok

'cycles', [3 0.8], 'nfreqs', 50, 'ntimesout', 100





Set ERSP/ITC plotting parameters -- pop_erspparams()

ERSP/ITC plotting options

Time range in ms [Low High]

Freq. range in Hz [Low High]

Power limits in dB [Low High]

Compute common ERSP baseline (assumes additive baseline)

Plot scalp map at time [ms]

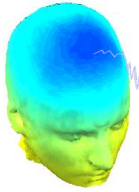
Plot scalp map at freq. [Hz]

ITC limit (0-1) [High]

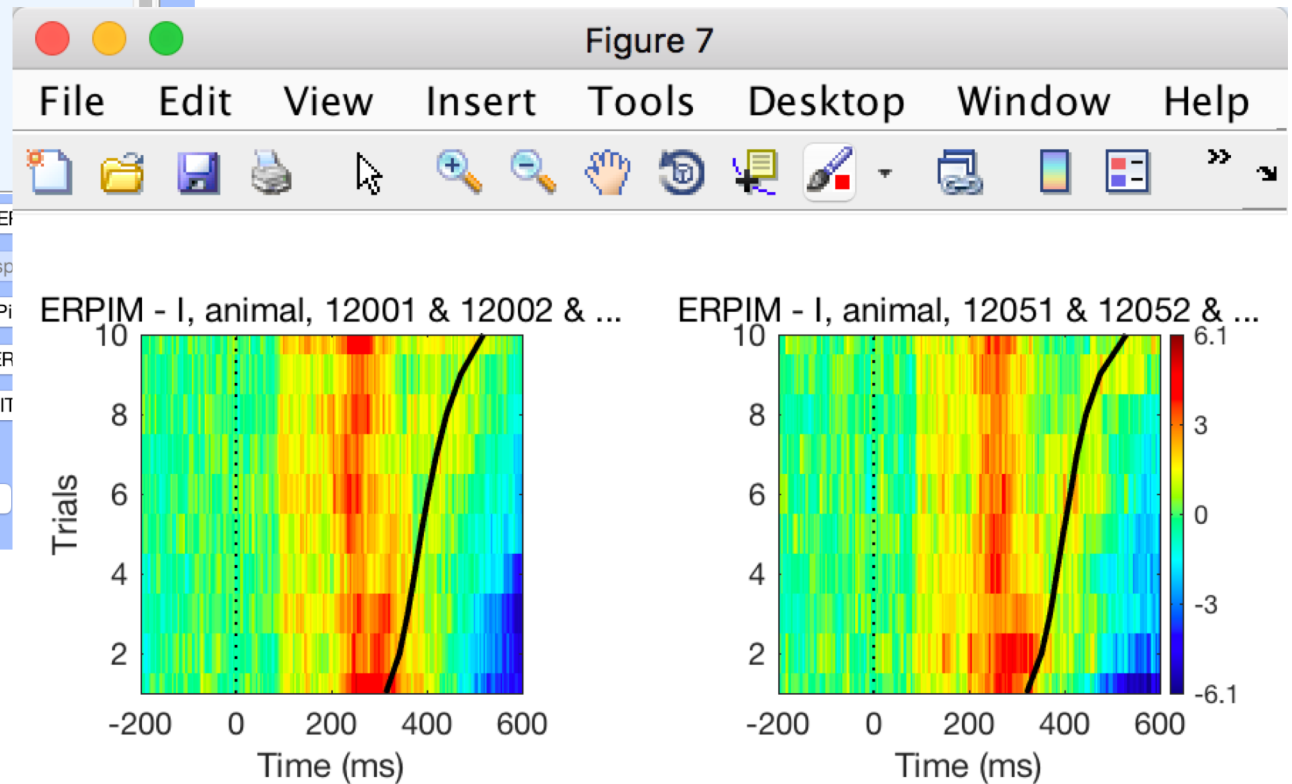
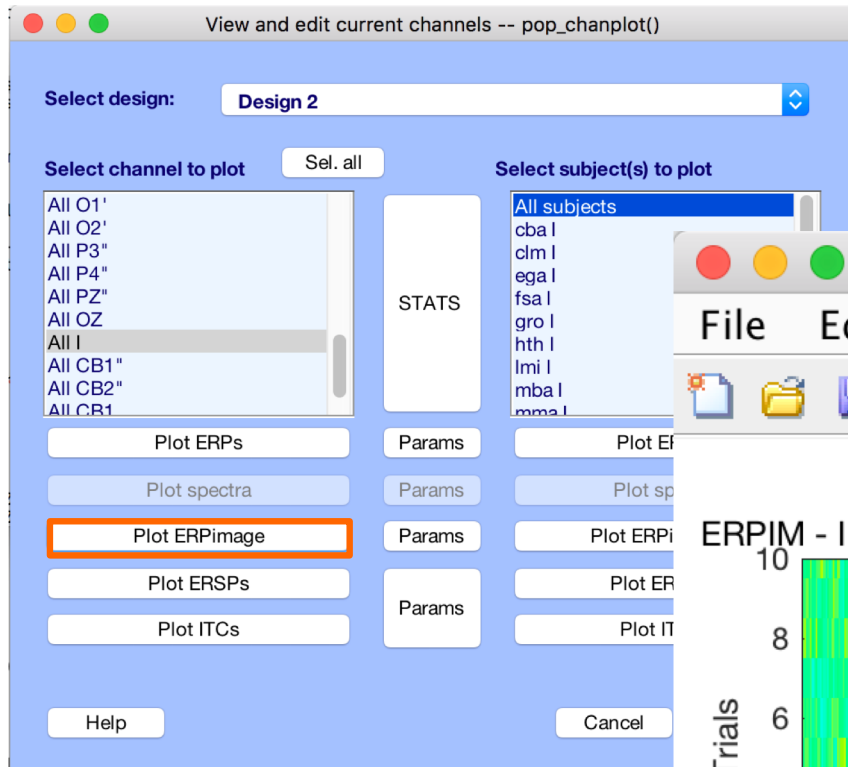
Cancel

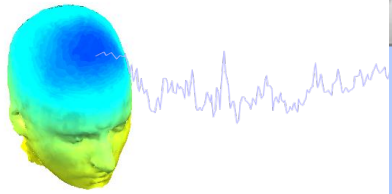
Ok

ERP-image across subjects



Delorme, A., Miyakoshi, M., Jung, T.P., Makeig, S. (2014) **Grand average ERP-image plotting and statistics: A method for comparing variability in event-related single-trial EEG activities across subjects and conditions.** J Neurosci Methods. 2014 Oct 22. pii: S0165-0270(14)00363-X. doi: 10.1016/j.jneumeth.2014.10.003





View and edit current channels -- pop_chanplot()

STUDY name 'Sternberg' - 'Comparing conditions'

Select channel to plot Sel. all Select subject(s) to plot

- All CZ
- All C2
- All C4
- All C6
- All T8
- All TP9
- All TP7
- All CP5
- All CP3
- All CP1

Plot ERPs Params Plot ERP(s)

Plot spectra

Plot ERPimage

STATS

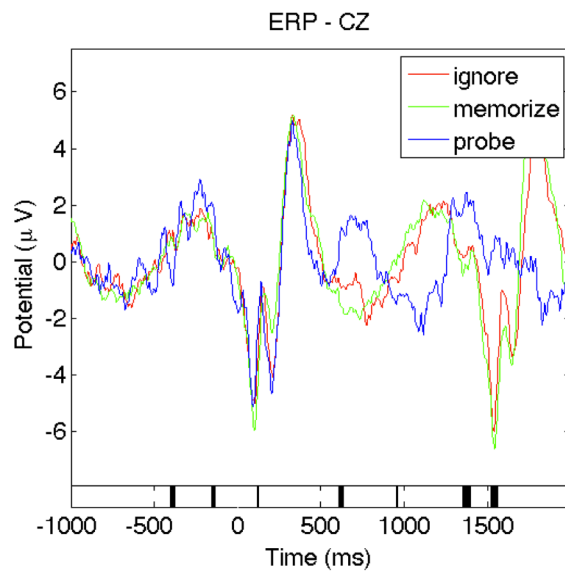
Set statistical parameters -- pop_statparams()

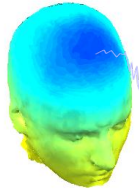
General statistical parameters

- Compute 1st independent variable statistics
- Compute 2nd independent variable statistics
- Use single trials (when available)
- Use EEGLAB statistics
 - Use parametric statistics Statistical threshold (p-value)
 - Use FDR correction Randomization (n)
- Use Fieldtrip statistics
 - Use analytic/parametric statistics Statistical threshold (p-value)
 - Do not correct for multiple comparisons Randomization (n)
 - CC channel neighbor parameters
 - CC clustering parameters

Figure 4: Channel ERP

File Edit View Insert Tools Desktop Window Help





View and edit current channels -- pop_chanplot()

STUDY name 'Sternberg' - 'Comparing conditions'

Select channel to plot Sel. all

Select subject(s) to plot

- All P6
- All P8
- All PO9
- All PO7
- All PO3
- All POZ
- All PO4
- All PO8
- All PO10
- All O1

STATS

Params

Params

Params

- All subjects
- S01 All
- S02 All
- S03 All
- S04 All
- S05 All
- S06 All
- S07 All
- S08 All
- S09 All

Plot ERPs

Plot spectra

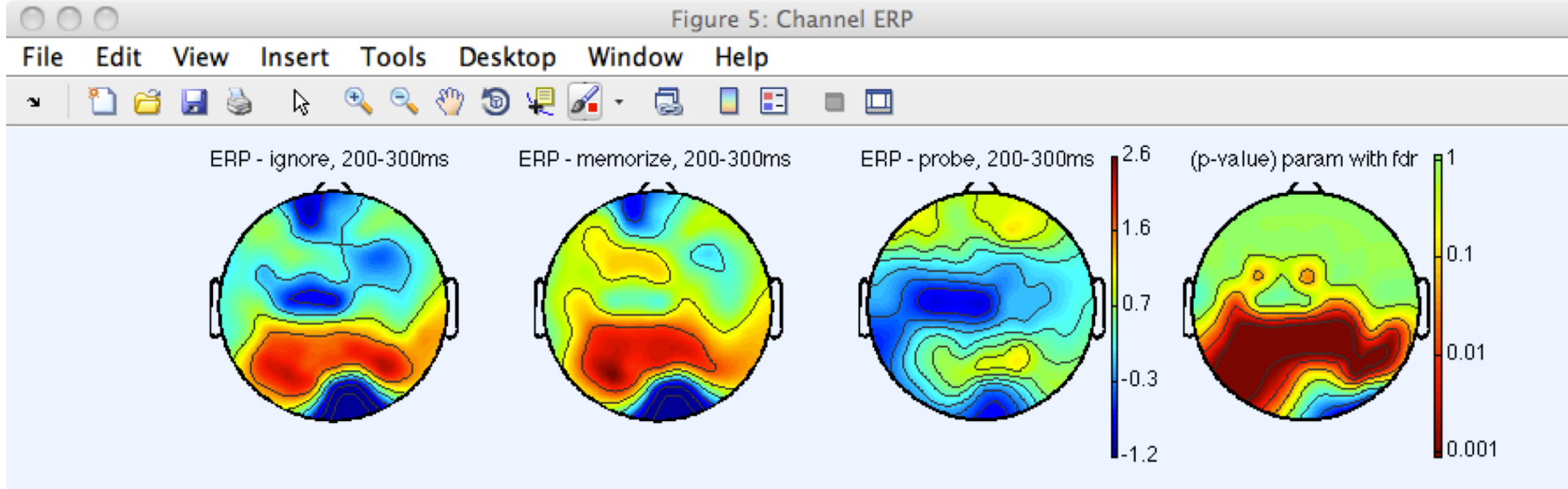
Plot ERPimage

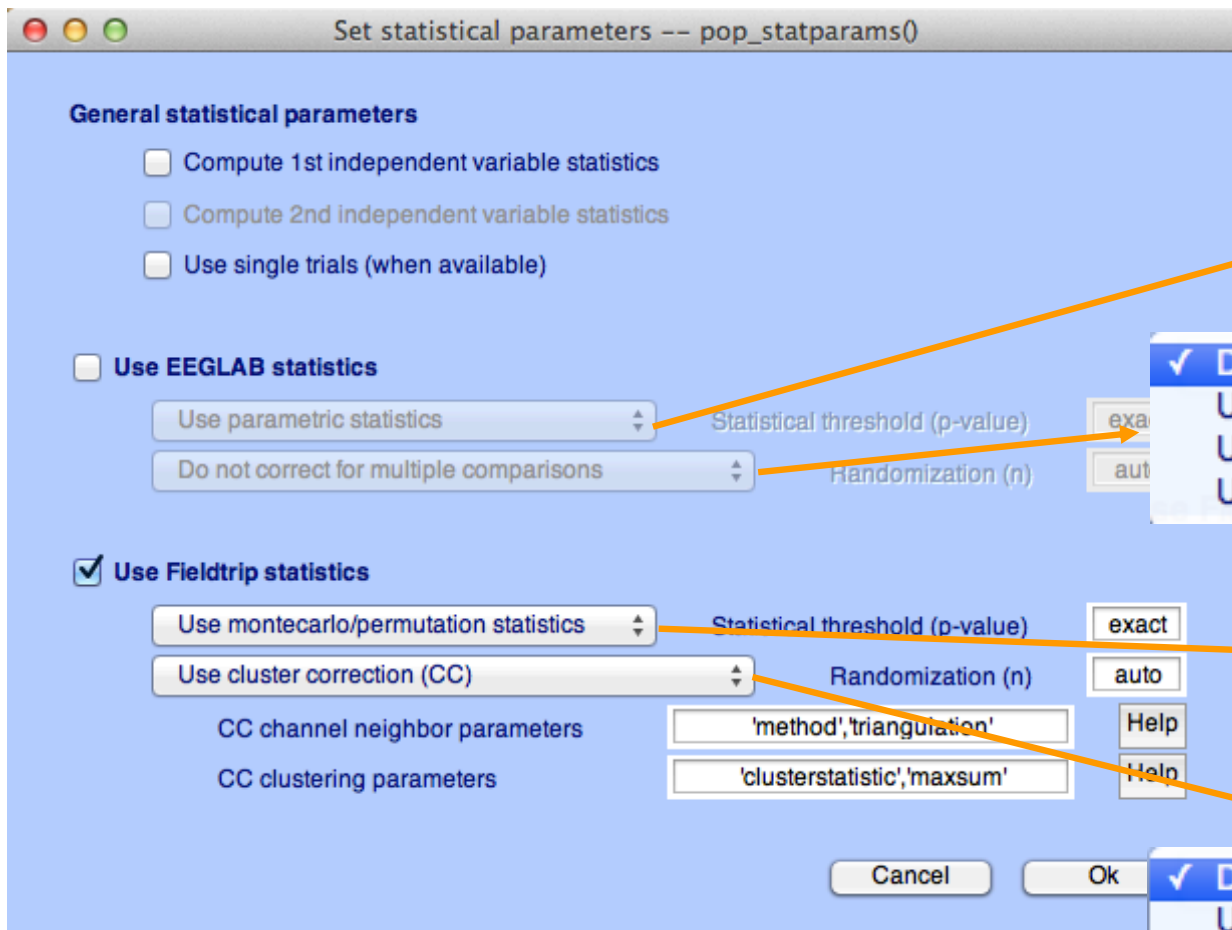
Plot ERP(s)

Plot spectra

Plot ERPimage(s)

Figure 5: Channel ERP



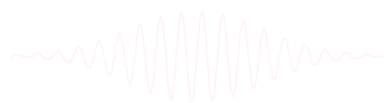


- ✓ Use parametric statistics
- Use permutation statistics
- Use bootstrap statistics

- ✓ Do not correct for multiple comparisons
- Use Bonferoni correction
- Use Holms correction
- Use FDR correction

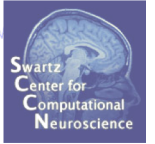
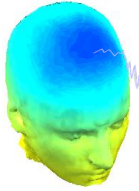
- ✓ Use analytic/parametric statistics
- Use montecarlo/permutation statistics

- ✓ Do not correct for multiple comparisons
- Use Bonferoni correction
- Use Holms correction
- Use FDR correction
- Use max correction
- Use cluster correction (CC)



std_stat() function in EEGLAB

Exercises



1. Load “stern.study” file in STUDY folder
2. Edit STUDY design and delete current variable(s)
3. Create a new indep. Variable design to compare Ignore vs. Memorize letter
4. Recompute spectrum and ERP.
5. Plot spectrum and ERP for electrode Fz
6. Plot scalp topography at 10 Hz (spectrum) and 200-300 ms (ERP) for both conditions
7. Spectrum for electrode Fz within 1 to 50 Hz and compute parametric statistics (with and without FDR correction)
8. Plot scalp topography at 10Hz for both conditions using permutation statistics cluster correction (Fieldtrip – statistics)