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 should change when using STUDY vs single dataset.
Build a STUDY
Build a STUDY, cont'd
Edit dataset info

## Edit STUDY set information - remember to save changes

<table>
<thead>
<tr>
<th>STUDY set name:</th>
<th>Sternberg</th>
</tr>
</thead>
<tbody>
<tr>
<td>STUDY set task name:</td>
<td>Sternberg</td>
</tr>
<tr>
<td>STUDY set notes:</td>
<td></td>
</tr>
</tbody>
</table>

### Dataset information

<table>
<thead>
<tr>
<th>dataset filename</th>
<th>browse</th>
<th>subject</th>
<th>session</th>
<th>condition</th>
<th>group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volumes/donnees/data/STUD1</td>
<td>...</td>
<td>S01</td>
<td></td>
<td>memorize</td>
<td>All comp.</td>
</tr>
<tr>
<td>Volumes/donnees/data/STUD2</td>
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<td>ignore</td>
<td>All comp.</td>
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<tr>
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<td>probe</td>
<td>All comp.</td>
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<tr>
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<td>S02</td>
<td></td>
<td>memorize</td>
<td>All comp.</td>
</tr>
<tr>
<td>Volumes/donnees/data/STUD5</td>
<td>...</td>
<td>S02</td>
<td></td>
<td>ignore</td>
<td>All comp.</td>
</tr>
<tr>
<td>Volumes/donnees/data/STUD6</td>
<td>...</td>
<td>S02</td>
<td></td>
<td>probe</td>
<td>All comp.</td>
</tr>
<tr>
<td>Volumes/donnees/data/STUD7</td>
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<td>S03</td>
<td></td>
<td>memorize</td>
<td>All comp.</td>
</tr>
<tr>
<td>Volumes/donnees/data/STUD8</td>
<td>...</td>
<td>S03</td>
<td></td>
<td>ignore</td>
<td>All comp.</td>
</tr>
<tr>
<td>Volumes/donnees/data/STUD9</td>
<td>...</td>
<td>S03</td>
<td></td>
<td>probe</td>
<td>All comp.</td>
</tr>
<tr>
<td>Volumes/donnees/data/STUD10</td>
<td>...</td>
<td>S04</td>
<td></td>
<td>memorize</td>
<td>All comp.</td>
</tr>
</tbody>
</table>

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]
Experimental design

1x2 unpaired
Patients
Group A
Controls
Group B

1x2 paired
Stim A
Stim B

2x2 unpaired
Patients
Old
Group A
Group B
Controls
Young
Group C
Group D

2x2 paired
Stim A
Stim B

Drug A
Drug B

2x2 paired & unpaired
Patients
Drug A
Controls
Drug B
Create design

1x3 design
Build a STUDY, alternative method
## Edit dataset info

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<th>group</th>
<th>Select by T.N.</th>
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</thead>
<tbody>
<tr>
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<td>S01</td>
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<td></td>
<td>Clear</td>
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<tr>
<td>/Volumes/donnee/data/STU2</td>
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<td>S02</td>
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<td></td>
<td></td>
<td>Clear</td>
</tr>
<tr>
<td>/Volumes/donnee/data/STU3</td>
<td>...</td>
<td>S03</td>
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<td></td>
<td></td>
<td>Clear</td>
</tr>
<tr>
<td>/Volumes/donnee/data/STU4</td>
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<td>S04</td>
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<td>Clear</td>
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<td>Clear</td>
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<td>S09</td>
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<td>Clear</td>
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<td>S10</td>
<td></td>
<td></td>
<td></td>
<td>Clear</td>
</tr>
</tbody>
</table>

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

- Update dataset info - datasets stored on disk will be overwritten (onset = Keep study info separate).
- Delete cluster information (to allow loading new datasets, set new components for clustering, etc.)

[Help] [Cancel] [Ok]
Create design

Select STUDY design
- Ignore vs. Memorize vs. Probe

Subjects
- S01, S02, S03, S04, S05, S06, S07, S08, S09, S10, S11, S12, S13

Independent variable 1
- stimulus type
- uncertainty1

Independent variable 2
- duration
- init_index
- init_time
- insert
- load

Use only specific datasets/trials
- Delete all data files associated with this STUDY design
- Save the STUDY

1x3 design

Figure 3: Channel ERP
- ERP - O2, ignore
- ERP - O2, memorize
- ERP - O2, probe
STUDY design and plotting overview

STEP 1
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Exercise...
Precompute data measures
Choose which channel

Choose which subject
Computing Spectrum

Use ‘timerange’ option to select time range, see “help std_spec”
Choose which channel

Choose which subject
Computing ERSP

'cycles', [3 0.8], 'nfreqs', 50, 'ntimesout', 100
2. Pre-compute measures
3. Cluster components
View and edit clusters
Plot cluster data

Choose which cluster

Plot mean scalp maps for easy reference
Plot cluster data

Choose which cluster

Choose which components
Plot cluster data
Exercises

Suggestion for exercises:

Load stern.study in STUDY folder

From the GUI, plot grand average ERP for all channels. Experiment with statistics.

Build a STUDY design to compare Ignore letter grouped with Memorize letter with Probe letters. Recompute spectrum and plot spectrum for electrode Fz using statistics. Do the same for the frontal midline component cluster (cluster 19).