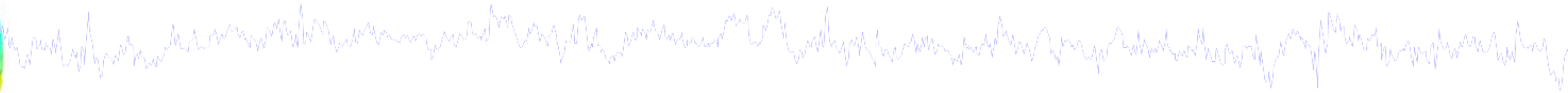
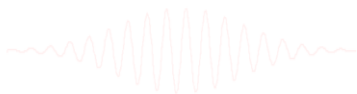


# Using EEGLAB history for basic scripting



- 1. 'EEG' structure**
- 2. Scripting with EEGLAB 'eegh'**
- 3. Matlab functions**
- 4. Search EEG.event structure**
- 5. Converting from 'pop' functions**

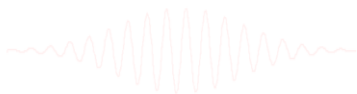




# Using EEGLAB history for basic scripting



- 1. 'EEG' structure**
- 2. Scripting with EEGLAB 'eegh'**
- 3. Matlab functions**
- 4. Search EEG.event structure**
- 5. Converting from 'pop' functions**

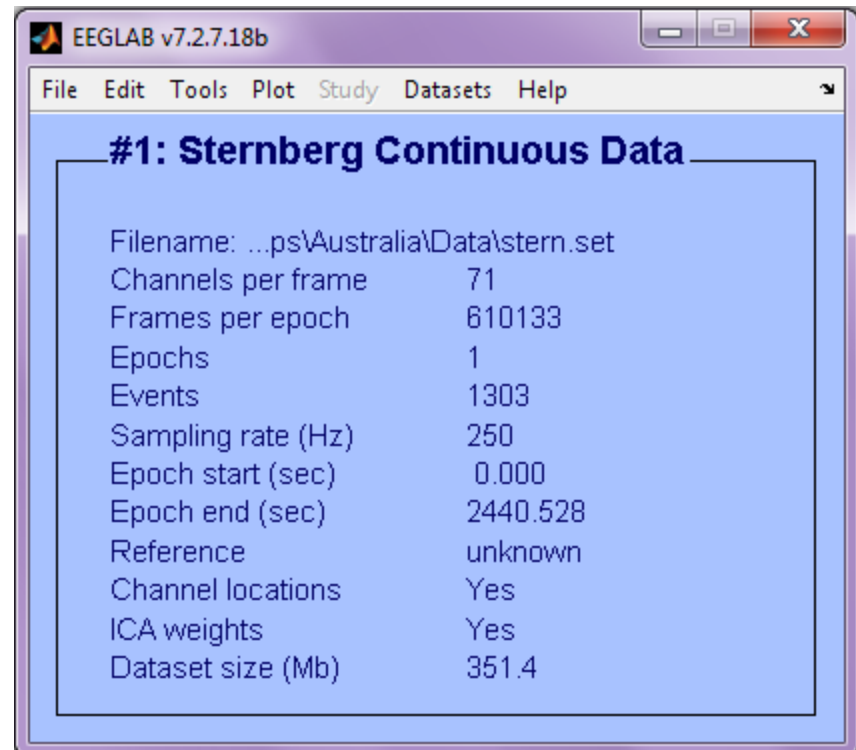
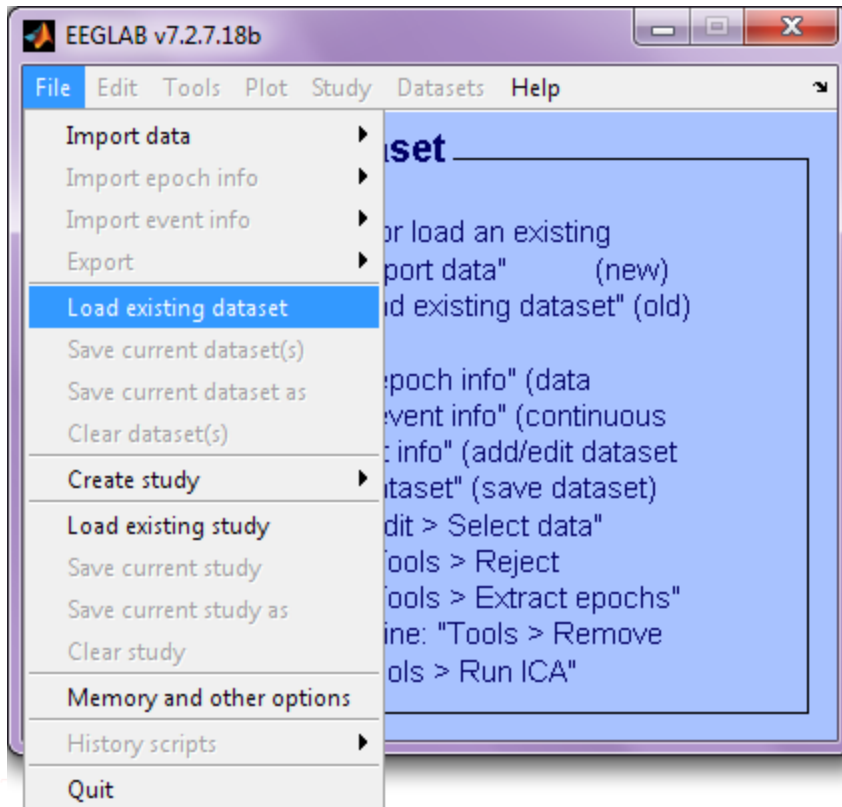


# Create a script from 'eegh' output

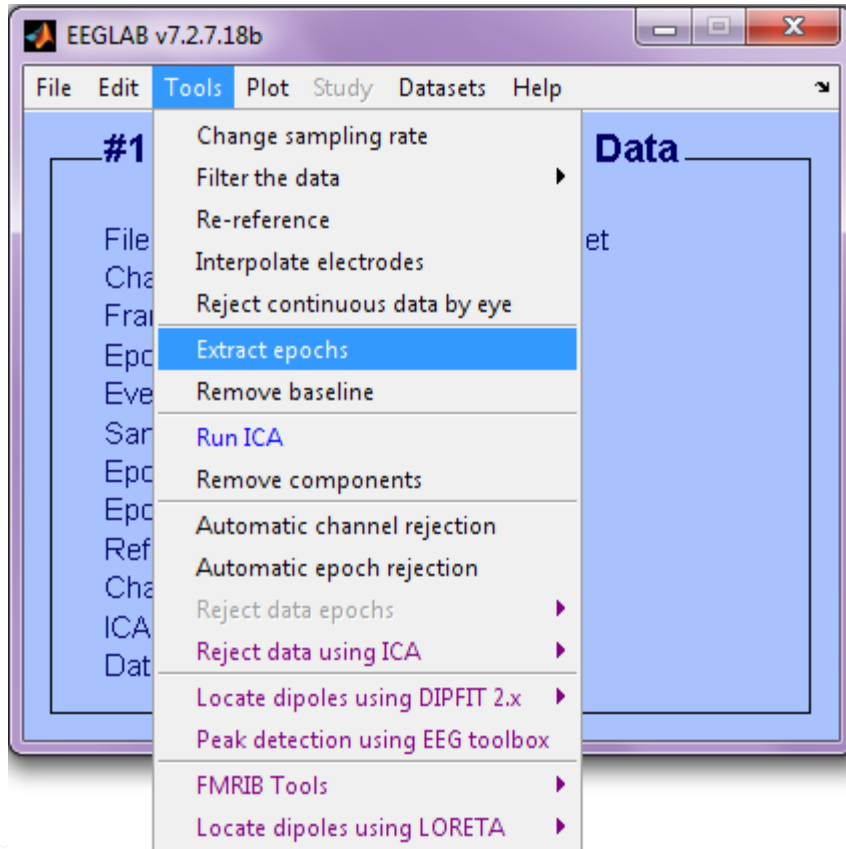


Perform a procedure through the GUI:

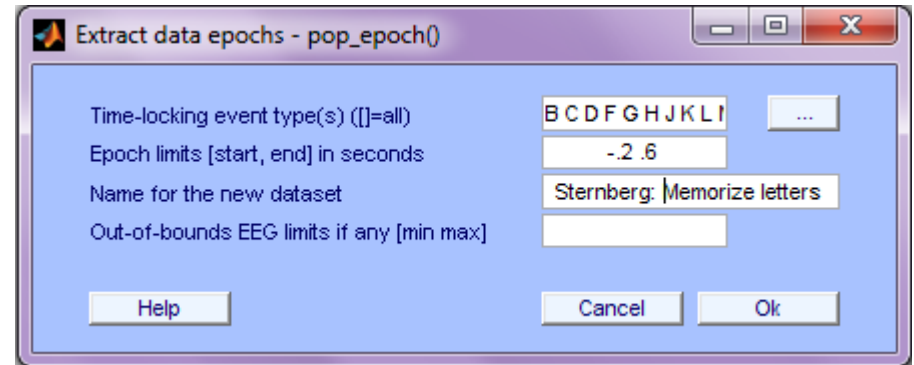
## 1) Load a continuous dataset



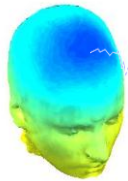
# Create a script from 'eegh' output



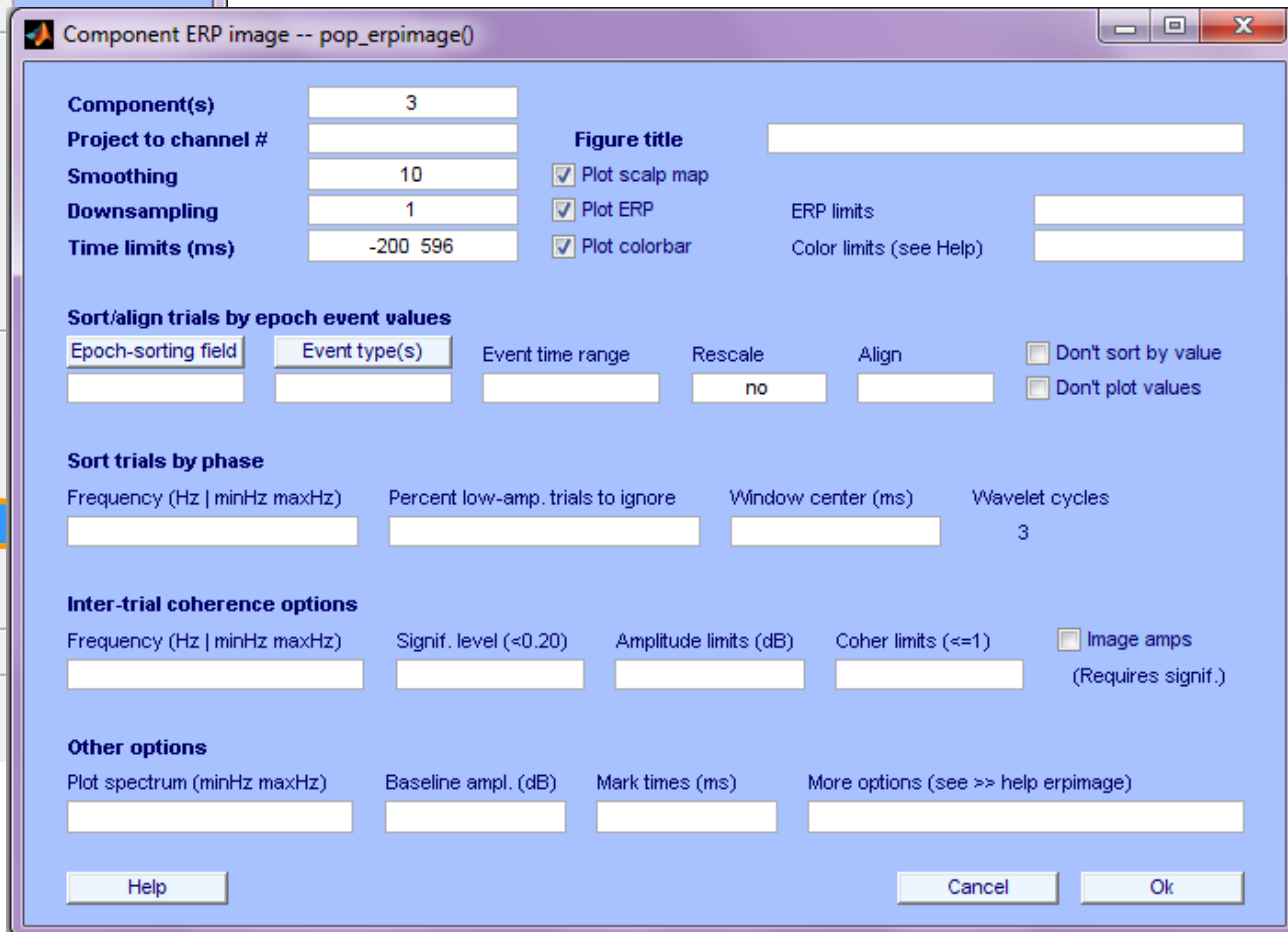
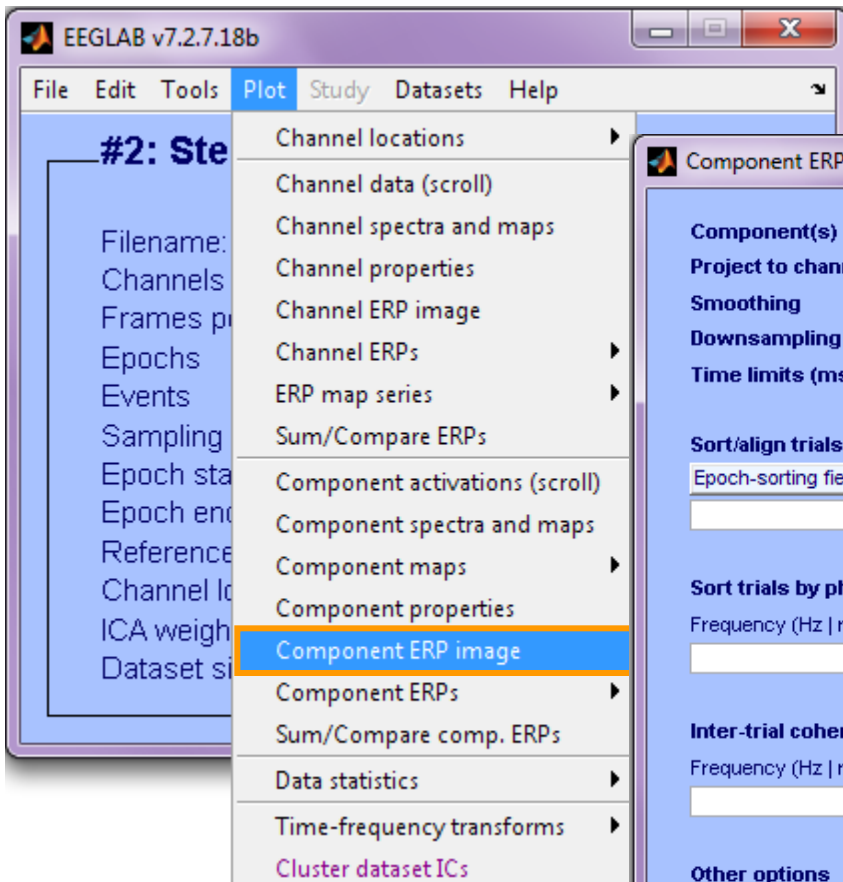
## 2) Epoch on Memorize letters



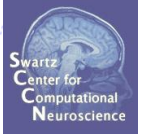
# Create a script from 'eegh' output



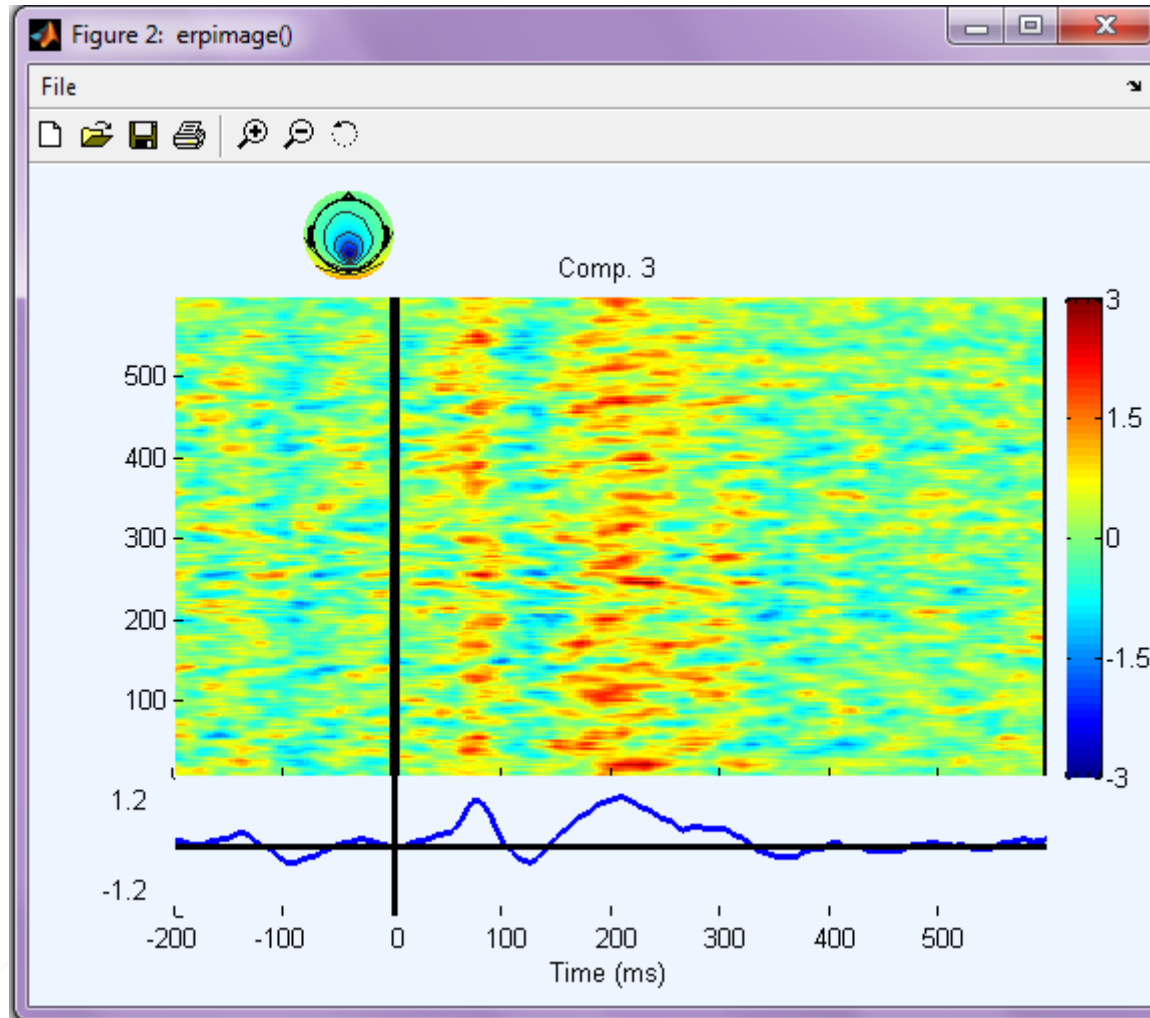
## 3) Plot an IC ERP image



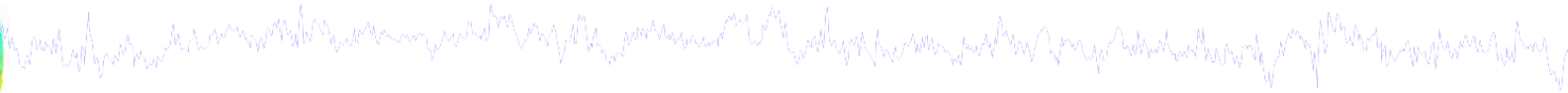
# Create a script from 'eegh' output



Result:

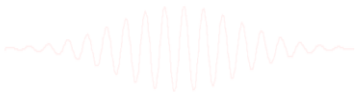


# Retrieve commands from eegh



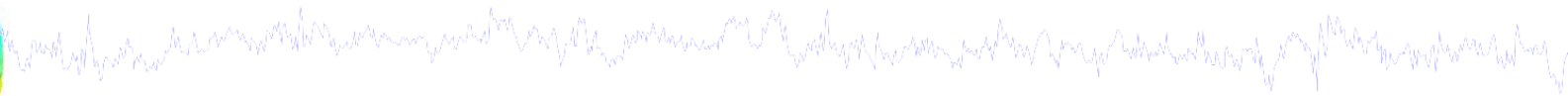
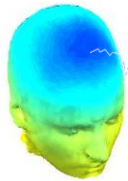
Write a script to do this:

```
>> eegh
```





# Retrieve commands from eegh



```
>> eegh
```

```
[ALLEEG EEG CURRENTSET ALLCOM] = eeglab;
```

```
EEG = pop_loadset('filename', 'stern.set', 'filepath', '...\Data\');
```

```
[ALLEEG EEG CURRENTSET] = pop_newset(ALLEEG, EEG, 0);
```

```
EEG = pop_epoch( EEG, {'B' 'C' 'D' ...}, [-0.2 0.6],...
```

```
    'newname', ,Memorize epochs', 'epochinfo', 'yes');
```

```
[ALLEEG EEG CURRENTSET] = pop_newset(ALLEEG, EEG, 1);
```

```
EEG = pop_rmbase( EEG, [-200 0]);
```

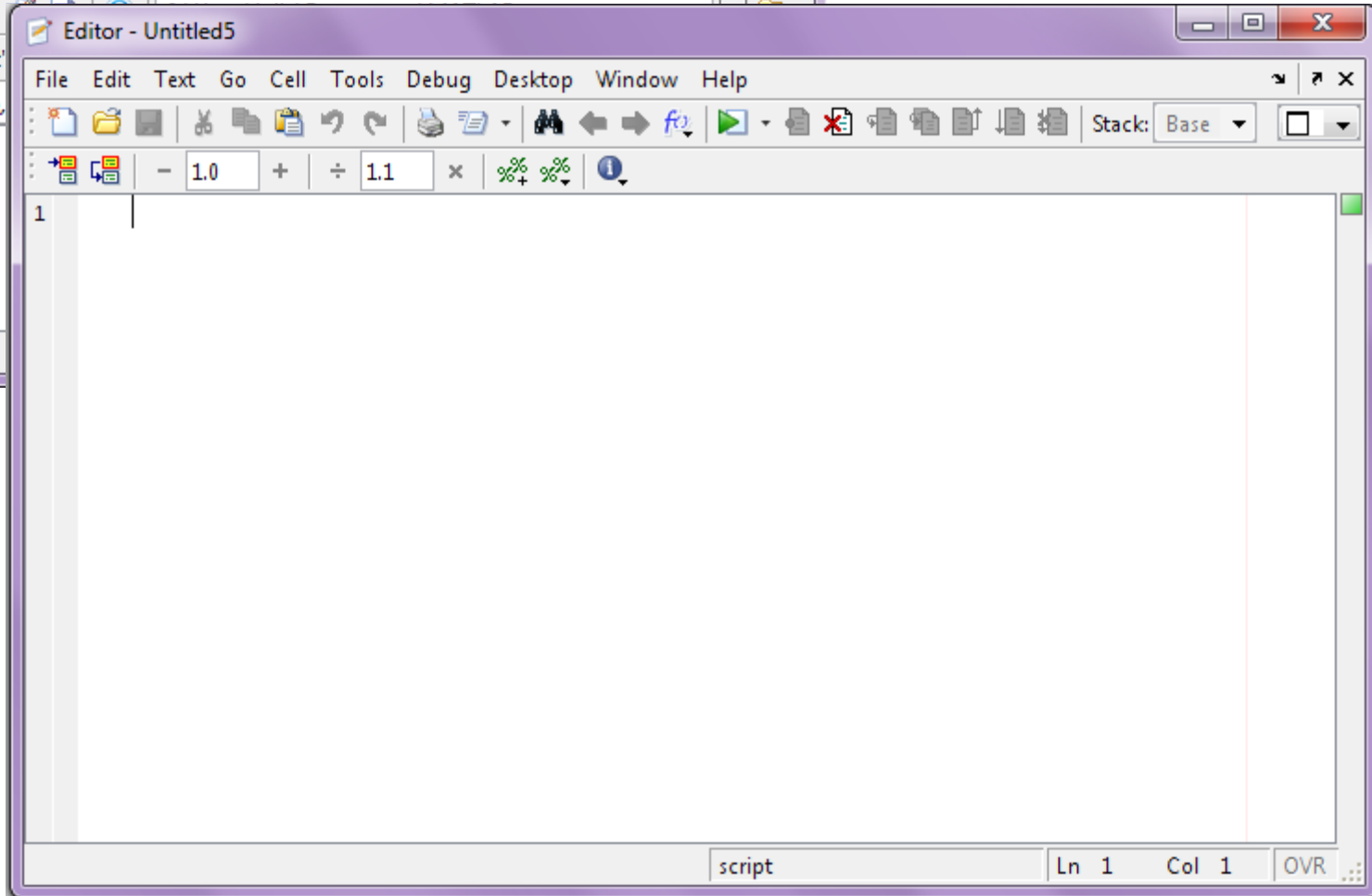
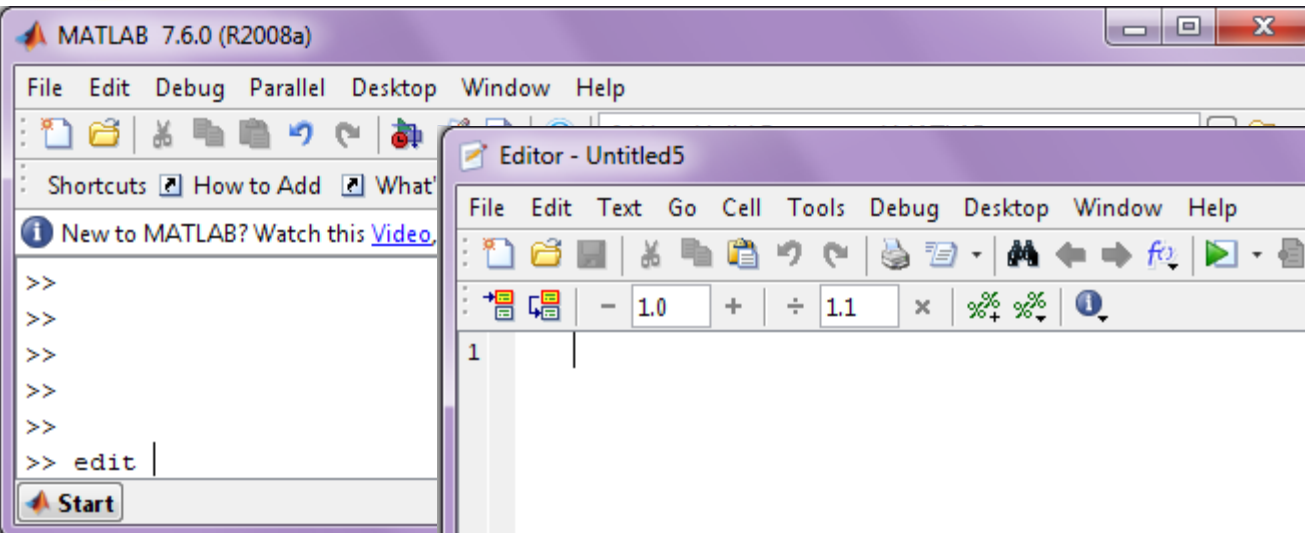
```
[ALLEEG EEG] = eeg_store(ALLEEG, EEG, CURRENTSET);
```

```
figure; pop_erpimage(EEG,0, [3],[],,Comp. 3',10,1,{}],[],...
```

```
    ','yerplabel', '', 'erp', 'on', 'cbar', 'on', 'topo',...
```

```
{mean(EEG.icawinv(:,[3]),2) EEG.chanlocs EEG.chaninfo });
```

# Create a Matlab script



Open  
Matlab  
editor

# Create a Matlab script

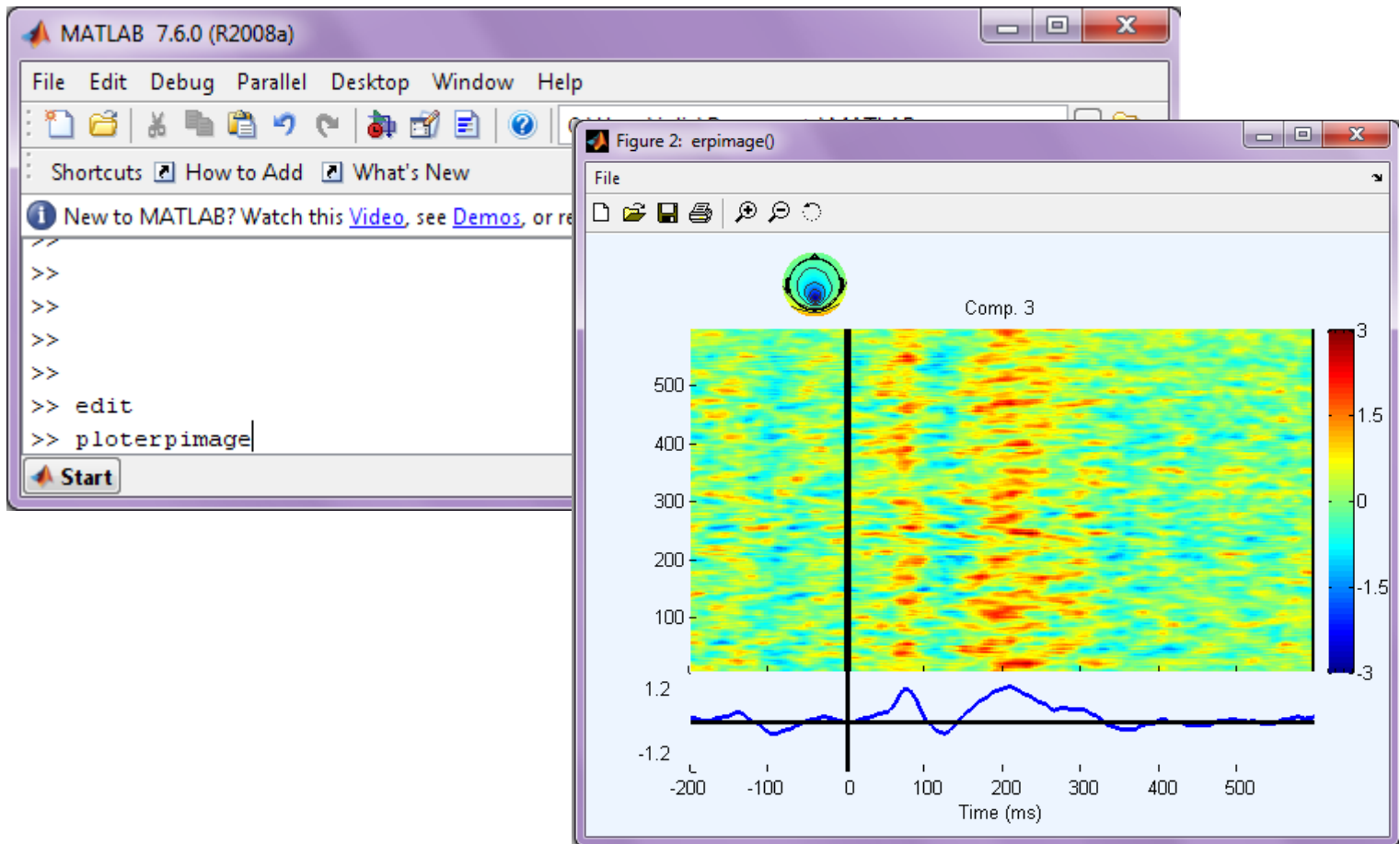


Copy and paste from Matlab command window:

```
Editor - Untitled5*
File Edit Text Go Cell Tools Debug Desktop Window Help
[Icons] Stack: Base
- 1.0 + ÷ 1.1 x % % !
1 [ALLEEG EEG CURRENTSET ALLCOM] = eeglab;
2 EEG = pop_loadset('filename','stern.set','filepath','C:\\Users\\julie\\Docum
3 [ALLEEG, EEG, CURRENTSET] = eeg_store( ALLEEG, EEG, 0 );
4 EEG = pop_epoch( EEG, { 'B' 'C' 'D' 'F' 'G' 'H' 'J' 'K' 'L' 'M' 'N'
5 [ALLEEG EEG CURRENTSET] = pop_newset(ALLEEG, EEG, 1, 'gui', 'off');
6 EEG = pop_rmbase( EEG, [-200 0]);
7 [ALLEEG EEG] = eeg_store(ALLEEG, EEG, CURRENTSET);
8 figure; pop_erpimage(EEG,0, [3],[],'Comp. 3',10,1,{},[],'', 'yerplabel','', 'er
script Ln 7 Col 51 OVR
```

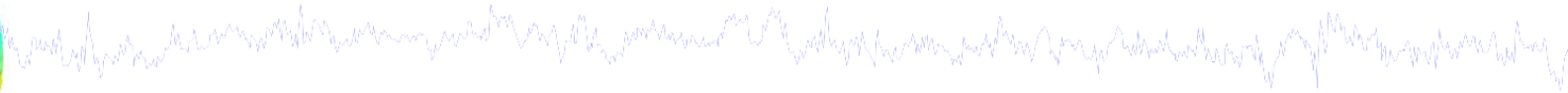
Save as 'ploterpimage.m'  
In MATLAB folder

# Run your new script

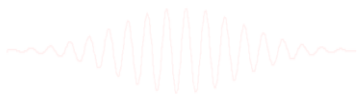


(Must add script's folder to Matlab paths)

# Using EEGLAB history for basic scripting



- 1. 'EEG' structure**
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- 5. Converting from 'pop' functions**

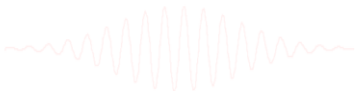


# Write a Matlab function



## Matlab functions:

1. Take arguments
2. Can return variables
3. Do not draw variables from the local workspace  
(Need all variables assigned internally or passed as arguments)



# Example function

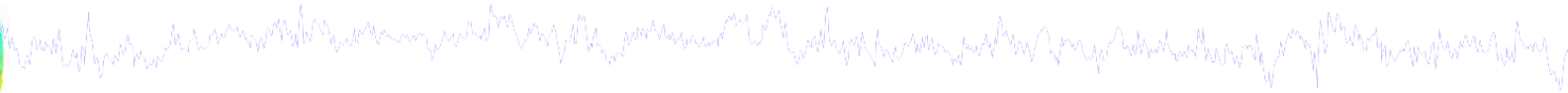


```
Editor - Untitled8*
File Edit Text Go Cell Tools Debug Desktop Window Help
[Icons] Stack: Base
1.0 + ÷ 1.1 x % %
1 function ploterpfunc(dataset,datapath,epochletts,datsetname,comp);
2
3
4 [ALLEEG EEG CURRENTSET ALLCOM] = eeglab;
5 EEG = pop_loadset('filename', dataset,'filepath',_datapath);
6 [ALLEEG EEG CURRENTSET] = pop_newset(ALLEEG, EEG, 0);
7 EEG = pop_epoch( EEG, epochletts , [-0.2 0.6],...
8 'newname', datsetname, 'epochinfo', 'yes');
9 [ALLEEG EEG CURRENTSET] = pop_newset(ALLEEG, EEG, 1);
10 EEG = pop_rmbase( EEG, [-200 0]);
11 [ALLEEG EEG] = eeg_store(ALLEEG, EEG, CURRENTSET);
12 figure; pop_erpimage(EEG,0, [comp],[],'Comp.',int2str(comp)),...
13 10,1,{},[],[],'', 'yerplabel', '', 'erp', 'on', 'cbar', 'on',...
14 'topo',{mean(EEG.icawinv(:,[comp]),2),EEG.chanlocs EEG.chaninfo });
15
16
```

Ln 14 Col 5 OVR

Save as 'ploterpfunc.m'  
in MATLAB folder

# Example function



```
% Variables-----
```

```
dataset = 'stern.set';
```

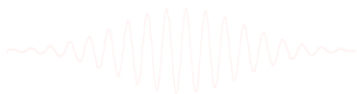
```
datapath = '...\EEGLAB_Workshop\Data\';
```

```
epochletts = {'B' 'C' 'D' ...};
```

```
datsetname = 'Memorize epochs';
```

```
comp = 3;
```

```
ploterfunc(dataset, datapath, epochletts, datsetname, comp);
```





# Run your function in Matlab

A screenshot of the MATLAB 7.6.0 (R2008a) interface. The window title is "MATLAB 7.6.0 (R2008a)". The menu bar includes File, Edit, Debug, Parallel, Desktop, Window, and Help. The toolbar contains various icons for file operations and execution. The current directory is "C:\Users\julie\Documents\MATLAB". A message box says "New to MATLAB? Watch this Video, see Demos, or read Getting Started." The command window shows the following code:

```
>> dataset = 'stern.set';  
>> datapath = 'C:\\Users\\julie\\Documents\\Workshops\\Australia\\Data\\';  
>> epochletts = { 'B' 'C' 'D' 'F' 'G' 'H' 'J' 'K' 'L' 'M' 'N'  
'P' 'Q' 'R' 'S' 'T' 'V' 'W' 'WM' 'X' 'Y' 'Z' };  
>> datsetname = 'Memorize epochs';  
>> comp = [3];  
>> ploterfunc (dataset,datapath,epochletts,datsetname,comp);
```

The "Start" button is visible at the bottom left, and "OVR" is at the bottom right.

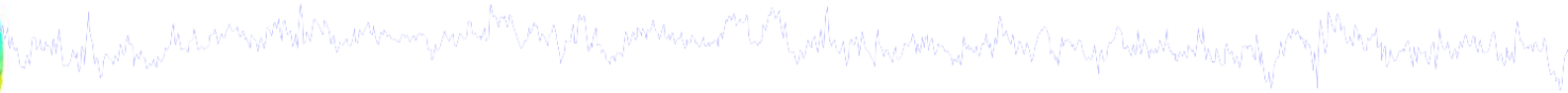
Loop through a set  
of components

A screenshot of the MATLAB 7.6.0 (R2008a) interface. The window title is "MATLAB 7.6.0 (R2008a)". The menu bar includes File, Edit, Debug, Parallel, Desktop, Window, and Help. The current directory is "rogram Files\Common Files\Adobe\". A message box says "New to MATLAB? Watch this Video, see Demos, or read Getting Started." The command window shows the following code:

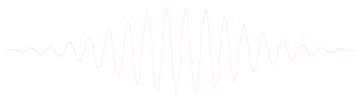
```
>>  
>> for comp = 1:15  
    ploterfunc (dataset,datapath,epochletts,datsetname,comp);  
end;
```

The "Start" button is visible at the bottom left, and "OVR" is at the bottom right. The status bar shows "Continue entering statement".

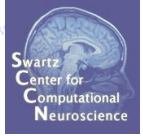
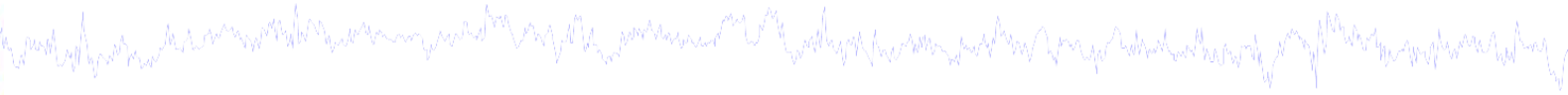
# Using EEGLAB history for basic scripting



- 1. 'EEG' structure**
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# Search events for specific event type



```
% OBJECTIVES:
```

```
% 1) Find all Memorize letters that were preceded by an ignore letter
```

```
% 2) Find all Memorize letters that were preceded by a memorize letter
```

```
%-----
```

```
% hint: 'memorize' event codes are single letters
```

```
epochidxM = []; % Mem preceded by a mem letter
```

```
epochidxG = []; % Mem preceded by an ignore letter
```

```
for ev = 2:length(EEG.event)
```

```
    if length(EEG.event(ev).type)==1 & length(EEG.event(ev-1).type)==1
```

```
        epochidxM = [epochidxM, ev]; % save this event
```

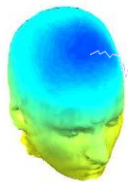
```
    elseif length(EEG.event(ev).type)==1 & EEG.event(ev-1).type(1)=='g'
```

```
        epochidxG = [epochidxG, ev]; % save this event
```

```
    end;
```

```
end;
```

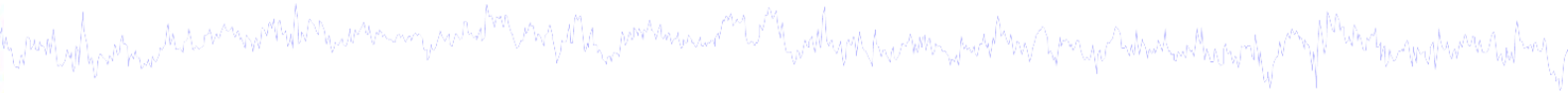
# Epoch on selected events



```
% Epoch continuous data around selected events
```

```
%-----  
[EEG, indices] = pop_epoch( EEG, [], [-2 2], 'eventindices', epochidxG);  
[ALLEEG EEG CURRENTSET] = pop_newset(ALLEEG, EEG, 1, ...  
  'setname', 'Mem after Ignore letter', 'gui', 'off');  
EEG = pop_autorej(EEG, 'nogui', 'on'); % Auto-reject noisy epochs  
[ALLEEG EEG CURRENTSET]=pop_newset(ALLEEG, EEG, CURRENTSET, 'retrieve', 1);  
  
[EEG, indices] = pop_epoch( EEG, [], [-2 2], 'eventindices', epochidxM);  
[ALLEEG EEG CURRENTSET] = pop_newset(ALLEEG, EEG, 1, ...  
  'overwrite', 'on', 'setname', 'Mem after Mem letter', 'gui', 'off');  
EEG = pop_autorej(EEG, 'nogui', 'on'); % Auto-reject noisy epochs  
eeglab redraw
```

# Confirm datasets contain expected epochs



```
>> [ALLEEG EEG CURRENTSET] = pop_newset(ALLEEG, EEG, CURRENTSET, 'retrieve',1);
```

```
>> EEG.epoch(2) %--- Select several random epochs, check if correct
```

```
ans =
```

```
event: [4 5 6]
```

```
eventlatency: {[-1.4400e+003] [0] [1.4440e+003]}
```

```
eventload: {[1] [2] [3]}
```

```
eventtype: {'R' 'N' 'Z'}
```

```
eventurevent: {[5] [6] [7]}
```

```
>> [ALLEEG EEG CURRENTSET] = pop_newset(ALLEEG, EEG, 2, 'retrieve',2);
```

```
>> EEG.epoch(2)
```

```
ans =
```

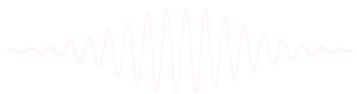
```
event: [4 5 6]
```

```
eventlatency: {[-1.4400e+003] [0] [1.4440e+003]}
```

```
eventload: {[0] [0] [1]}
```

```
eventtype: {'gC' 'Z' 'L'}
```

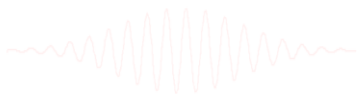
```
eventurevent: {[15] [16] [17]}
```



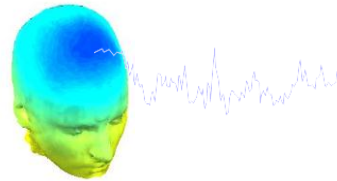
# Using EEGLAB history for basic scripting



- 1. 'EEG' structure**
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# Converting from 'pop' functions



Plot component time frequency -- pop\_newtimef()

Component number	13
Sub epoch time limits [min max] (msec)	-1000 1996
Frequency limits [min max] (Hz) or sequence	3 50
Baseline limits [min max] (msec) (0->pre-stim.)	0
Wavelet cycles [min max/fact] or sequence	3 0.5
ERSP color limits [max] (min=-max)	
ITC color limits [max]	
Bootstrap significance level (Ex: 0.01 -> 1%)	.01
Optional newtimef() arguments (see Help)	

Plot Event Related Spectral Power

see log power (set)

plot ITC phase (set)

FDR correct (set)

Log spac...

No baseli...

Use FFT

Use 200 time points

Use limits, padding 2

Use divisive baseline

Use limits

Help

EEGLAB v10.2.2.1b

File Edit Tools Plot Study

#1: jo74

Filename: Channels Frames p Epochs Events Sampling Epoch sta Epoch end Reference Channel lo ICA weigh Dataset si

Channel Channel Channel Channel Channel Channel ERP ma Sum/Co

Compo Compo

Component maps

Component properties

Component ERP image

Component ERPs

Sum/Compare comp. ERPs

Data statistics

Time-frequency transforms

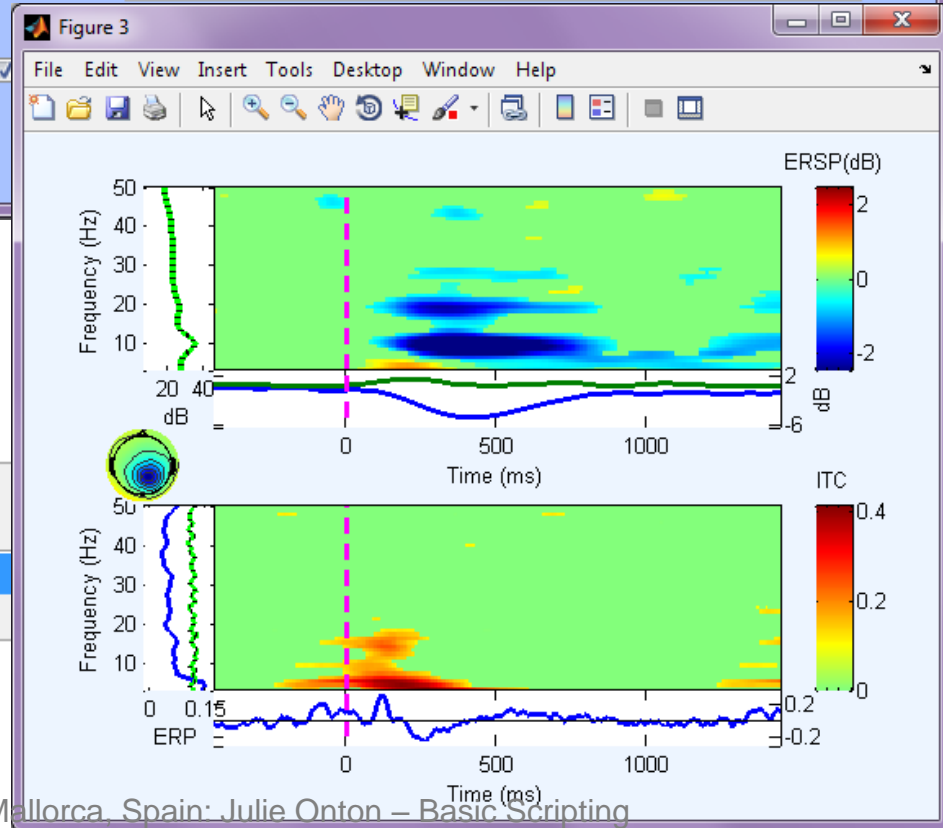
Cluster dataset ICs

Channel time-frequency

Channel cross-coherence

Component time-frequency

Component cross-coherence



How can I get ERSP/ITC values from this plot?

# Converting from 'pop' functions

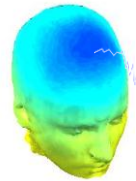


```
MATLAB 7.6.0 (R2008a)
File Edit Debug Parallel Desktop Window Help
C:\Users\julie\Documents\Workshops\Mallorca\Scripts
Shortcuts How to Add What's New
New to MATLAB? Watch this Video, see Demos, or read Getting Started.
Bootstat function: shuffling along dimension 2 only
Processing permutation statistics for ERSF (naccu=200):47 94 141 188 235
Permutation statistics baseline length is 47 (out of 200) points
Bootstat function: shuffling along dimension 2 only
Processing permutation statistics for ITC (naccu=200):47 94 141 188 235
Computing the mean baseline spectrum
Note: Add output variables to command line call in history to
      retrieve results and use the tftopo function to replot them
>> eegh
[ALLEEG EEG CURRENTSET ALLCOM] = eeglab;
EEG =
pop_loadset('filename','memorize.set','filepath','C:\\Users\\julie\\Documents\\MatlabData\\E
EGdata\\sternberg\\jo74\\');
[ALLEEG, EEG, CURRENTSET] = eeg_store( ALLEEG, EEG, 0 );
figure; pop_newtimef( EEG, 0, 13, [-1000 1996], [3          0.5] , 'topovec',
EEG.icawinv(:,13), 'elocs', EEG.chanlocs, 'chaninfo', EEG.chaninfo, 'baseline',[0],
'alpha',.01, 'freqs', [3 50], 'plotphase', 'off', 'pdratio', 2);
>>
```

Where are the outputs?...  
Need to use base function: *newtimef()*



# Converting from 'pop' functions



get help for  
base function:  
remove 'pop\_'  
from eegh  
function name

Example usage:  
lists possible  
output variables

```
MATLAB 7.6.0 (R2008a)
File Edit Debug Parallel Desktop Window Help
C:\Users\julie\Documents\Workshops\Mallorca\Scripts
Shortcuts How to Add What's New
New to MATLAB? Watch this Video, see Demos, or read Getting Started.
>> help newtimef
newtimef() - Return estimates and plots of mean event-related (log) spectral
             perturbation (ERSP) and inter-trial coherence (ITC) events
             across event-related trials (epochs) of a single input time series.

* Also can compute and statistically compare transforms for two time
  series. Use to compare ERSP and ITC means in two conditions.

* Uses either fixed-window, zero-padded FFTs (fastest), wavelet
  0-padded DFTs. FFT uses Hanning tapers; wavelets use similar Morlet
  tapers.

* For the wavelet and FFT methods, output frequency spacing
  is the lowest frequency ('srate'/'winsize') divided by 'padratio'.
  NaN input values (such as returned by eventlock()) are ignored.

* If 'alpha' is given (see below), permutation statistics are computed
  (from a distribution of 'naccu' surrogate data trials) and
  non-significant features of the output plots are zeroed out
  (and plotted in green).

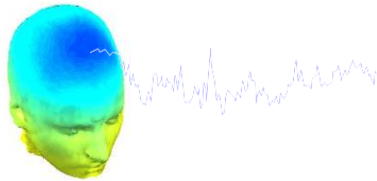
* Given a 'topovec' topo vector and 'elocs' electrode location file,
  the figure also shows a topoplot() view of the specified scalp map.

* Note: Left-click on subplots to view and zoom in separate windows.

Usage with single dataset:
>> [ersp,itc,powbase,times,freqs,erspboot,itcboot] = ...
    newtimef(data, frames, tlimits, srate, cycles,...
             'key1',value1, 'key2',value2, ... );

Example to compare two condition (channel 1 EEG versus ALLEEG(2)):
>> [ersp,itc,powbase,times,freqs,erspboot,itcboot] = ...
    newtimef({EEG.data(1,:,:) ALLEEG(2).data(1,:,:)}, ...,
             EEG.pnts, [EEG.xmin EEG.xmax]*1000, EEG.srate, cycles);
```

# Converting from 'pop' functions



```
MATLAB 7.6.0 (R2008a)
File Edit Debug Parallel Desktop Window Help
C:\Users\julie\Documents\Workshops\Mallorca\Scripts
Shortcuts How to Add What's New
New to MATLAB? Watch this Video, see Demos, or read Getting Started.

'vert' = [times_vector] -> plot vertical dashed lines at specified times
        in ms. (default: none)
'newfig' = ['on'|'off'] Create new figure for difference plots {'on'}
'outputformat' = ['old'|'plot'] for compatibility with script that used the
                old output format, set to 'old' (mbase in absolute amplitude (not
                dB) and real itc instead of complex itc). 'plot' returns
                the plotted result (default: 'plot')

Outputs:
    ersp = (nfreqs,timeout) matrix of log spectral diffs from baseline
           (in dB log scale or absolute scale). Use the 'plot' output format
           above to output the ERSP as shown on the plot.
    itc = (nfreqs,timeout) matrix of complex inter-trial coherencies.
          itc is complex -- ITC magnitude is abs(itc); ITC phase in radians
          is angle(itc), or in deg phase(itc)*180/pi.
    powbase = baseline power spectrum. Note that even, when selecting the
             the 'trialbase' option, the average power spectrum is
             returned (not trial based). To obtain the baseline of
             each trial, recompute it manually using the tfdata
             output described below.
    times = vector of output times (spectral time window centers) (in ms).
    freqs = vector of frequency bin centers (in Hz).
    erspboot = (nfreqs,2) matrix of [lower upper] ERSP significance.
    itcboot = (nfreqs) matrix of [upper] abs(itc) threshold.
    tfdata = optional (nfreqs,timeout,trials) time/frequency decomposition
             of the single data trials. Values are complex.

Plot description:
    Assuming both 'plotersp' and 'plotitc' options are 'on' (= default).
    The upper panel presents the data ERSP (Event-Related Spectral Perturbation)
    in dB, with mean baseline spectral activity (in dB) subtracted. Use
    "baseline" = N to prevent time(f) from removing the baseline
```

Output variables described at the end of help message

# Converting from 'pop' functions



```
Editor - Untitled*
File Edit Text Go Cell Tools Debug Desktop Window Help
- 1.0 + ÷ 1.1 × %>% %>% !
1 figure; pop_newtimef( EEG, 0, 13, [-1000 1996], [3 0.5], ...
2 'topovec', EEG.icawinv(:,13), 'elocs', EEG.chanlocs, 'chaninfo', ...
3 EEG.chaninfo, 'baseline',[0], 'alpha',.01, 'freqs', [3 50], ...
4 'plotphase', 'off', 'padratio', 2);
5
6
7 [ersp,itc,powbase,times,freqs,erspboot,itcboot] = ...
8 newtimef(data, frames, tlimits, srate, cycles, ...
9 'key1',value1, 'key2',value2, ... );
```

Copy your eegh function call  
and the help message for base  
function into a Matlab script  
  
(notice inputs are different)

# Converting from 'pop' functions



```
1 %figure; pop_newtimef( EEG, 0, 13, [-1000 1996], [3 0.5] ,...
2 % 'topovec', EEG.icawinv(:,13), 'elocs', EEG.chanlocs, 'chaninfo',...
3 % EEG.chaninfo, 'baseline',[0], 'alpha',.01, 'freqs', [3 50],...
4 % 'plotphase', 'off', 'pdratio', 2);
5
6 comp = 13;
7 cycles = [3 0.5];
8 freqs = [3 50];
9 pratio = 2;
10
11 [ersp,itc,powbase,times,freqs,erspboot,itcboot] = ...
12     newtimef(EEG.icaact(comp, :, :), EEG.pnts, [EEG.xmin EEG.xmax]*1000,...
13     EEG.srate, cycles, 'pdratio', pratio, 'freqs',freqs);
14
15
16 %[ersp,itc,powbase,times,freqs,erspboot,itcboot] = ...
17 % newtimef({EEG.data(1, :, :) ALLEEG(2).data(1, :, :)},...
18 % EEG.pnts, [EEG.xmin EEG.xmax]*1000, EEG.srate, cycles);
19
```

Customize the function call with your EEG data and other parameters

script Ln 1 Col 1 OVR

# Converting from 'pop' functions



```
MATLAB 7.6.0 (R2008a)
File Edit Debug Parallel Desktop Window Help
C:\Users\julie\Documents\Workshops\Mallorca
Shortcuts How to Add What's New
New to MATLAB? Watch this Video, see Demos, or read Getting Started.
>> whos
Name              Size              Bytes  Class      Attributes
ALLCOM            1x4                1346   cell       global
ALLEEG            1x1              402084830 struct    global
CURRENTSET        1x1                  8   double    global
CURRENTSTUDY      1x1                  8   double    global
EEG                1x1              402085286 struct    global
LASTCOM           1x227              454   char       global
STUDY              0x0                  0   double    global
ans                1x1                192   cell
comp               1x1                  8   double
cycles            1x2                 16   double
ersp              48x200             76800   double
erspboot          0x0                  0   double
freqs             1x48                384   double
itc               48x200            153600   double    complex
itcboot           0x0                  0   double
powbase           1x48                384   double
pratio            1x1                  8   double
times             1x200              1600   double
>>
```

Run the new function call, then check variables saved to local workspace

# Converting from 'pop' functions



```
Editor - Untitled*
File Edit Text Go Cell Tools Debug Desktop Window Help
- 1.0 + ÷ 1.1 x % % !
1 %figure; pop_newtimef( EEG, 0, 13, [-1000 1996], [3 0.5] ,...
2 % 'topovec', EEG.icawinv(:,13), 'elocs', EEG.chanlocs, 'chaninfo',...
3 % EEG.chaninfo, 'baseline',[0], 'alpha',.01, 'freqs', [3 50],...
4 % 'plotphase', 'off', 'padratio', 2);
5
6
7     comps = [1:13];
8     cycles = [3 0.5];
9     freqs = [3 50];
10    pratio = 2;
11
12    for c = 1:length(comps)
13        figure;
14        [ersp(:, :, c), itc(:, :, c), powbase(c, :), times, freqs, erspboot, itcboot] = ...
15        newtimef(EEG.icaact(comps(c), :, :), EEG.pnts, [EEG.xmin EEG.xmax]*1000, ...
16        EEG.srate, cycles, 'padratio', pratio, 'freqs', freqs);
17    end
18
19    %[ersp, itc, powbase, times, freqs, erspboot, itcboot] = ...
20    % newtimef({EEG.data(1, :, :) ALLEEG(2).data(1, :, :)}, ...
21    % EEG.pnts, [EEG.xmin EEG.xmax]*1000, EEG.srate, cycles);
```

Make a list of components to process and collect output for all

# Exercise



- **Novice**

- Create a Matlab script by copying eegh output (for example load data, epoch, plot something)

- > Convert your script into a Matlab 'function'

- **Intermediate**

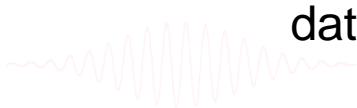
- Write a script to load data, epoch and then loop through ICs and plot an ERSP for each

- > Try the same using *newtimef()* and collect output

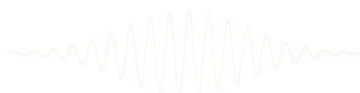
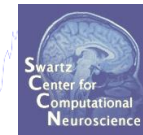
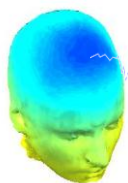
- **Advanced**

- Using `stern.set` (continuous data), write a script to find all Memorize letters *preceded* by another Memorize letter and create a dataset with only these epochs. Then find Memorize letters preceded by an Ignore letter and create a second dataset with only these epochs.

- > Create plots to compare these conditions



# Supplementary lessons





# Matlab basics -- Briefly



**Variable** = word with an assigned value (type 'whos')

**Examples:**

**% vector of numbers:**

```
mynumbers = [1, 2, 3, 5:10];
```

*(Square brackets: concatenate anything within)*

**% access vector elements:**

```
>> mynumbers(2)
```

```
ans =
```

```
2
```

**% cell array of strings:**

```
mylabels = {'stimulus', 'response'};
```

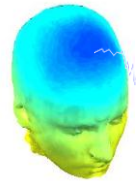
**% access cell array elements:**

```
>> mylabels{2}
```

```
ans =
```

```
response
```

# Parameterize a script



```
>> eegh
```

Red = values to make into variables



```
[ALLEEG EEG CURRENTSET ALLCOM] = eeglab;
```

```
EEG = pop_loadset('filename', 'stern.set', 'filepath', ...  
    '\EEGLAB_Workshop\Data\');
```

```
[ALLEEG EEG CURRENTSET] = pop_newset(ALLEEG, EEG, 0);
```

```
EEG = pop_epoch( EEG, {'B' 'C' 'D' ...}, [-0.2 0.6], ...  
    'newname', 'Memorize epochs', 'epochinfo', 'yes');
```

```
[ALLEEG EEG CURRENTSET] = pop_newset(ALLEEG, EEG, 1);
```

```
EEG = pop_rmbase( EEG, [-200 0]);
```

```
[ALLEEG EEG] = eeg_store(ALLEEG, EEG, CURRENTSET);
```

```
figure; pop_erpimage(EEG, 0, [3], [], 'Comp. 3', 10, 1, {}, [], ...  
    '', 'yerplabel', '', 'erp', 'on', 'cbar', 'on', 'topo', ...  
    {mean(EEG.icawinv(:, [3]), 2) EEG.chanlocs EEG.chaninfo });
```

# Parameterize a script



**% Variables-----**

```
dataset = 'stern.set';
```

```
datpath = 'C:\MATLAB\...\EEGLAB_Workshop\Data\';
```

```
epochletts = {'B' 'C' 'D' ...};
```

```
datsetname = 'Memorize epochs';
```

```
comp = 3; % End variables-----
```

```
[ALLEEG EEG CURRENTSET ALLCOM] = eeglab;
```

```
EEG = pop_loadset('filename', dataset, 'filepath', datpath);
```

```
[ALLEEG EEG CURRENTSET] = pop_newset(ALLEEG, EEG, 0);
```

```
EEG = pop_epoch( EEG, epochletts , [-0.2 0.6], ...
```

```
'newname', datsetname, 'epochinfo', 'yes');
```

```
[ALLEEG EEG CURRENTSET] = pop_newset(ALLEEG, EEG, 1);
```

```
EEG = pop_rmbase( EEG, [-200 0]);
```

```
[ALLEEG EEG] = eeg_store(ALLEEG, EEG, CURRENTSET);
```

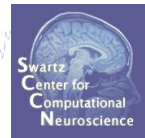
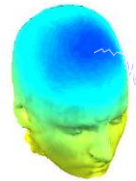
```
figure; pop_erpimage(EEG,0, [comp], [], ['Comp.', int2str(comp)], ...
```

```
10,1, {}, [], '', 'yerplabel', '', 'erp', 'on', 'cbar', 'on', 'topo', ...
```

```
{mean(EEG.icawinv(:, [comp ]), 2), EEG.chanlocs EEG.chaninfo});
```



# Create a new Matlab script with variables



```
Editor - C:\Users\julie\Documents\Workshops\Mallorca\Scripts\ExampleMfiles\ploterpimageswithv...
File Edit Text Go Cell Tools Debug Desktop Window Help
+ - 1.0 + ÷ 1.1 x % % + % - !
1 % Variables-----
2 - dataset = 'stern.set';
3 - datpath = 'C:\MATLAB\...\EEGLAB_Workshop\Data\';
4 - epochletts = {'gB' 'gC' 'gD' 'gF' 'gG' 'gH' 'gJ' 'gK'...
5 'gL' 'gM' 'gN' 'gP' 'gQ' 'gR' 'gS' 'gT' 'gV' 'gW'...
6 'gX' 'gY' 'gZ'};
7 - datsetname = 'Memorize epochs';
8 - comp = 3; % End variables-----
9 - [ALLEEG EEG CURRENTSET ALLCOM] = eeglab;
10 - EEG = pop_loadset('filename', dataset, 'filepath', datpath);
11 - [ALLEEG EEG CURRENTSET] = pop_newset(ALLEEG, EEG, 0);
12 - EEG = pop_epoch( EEG, epochletts , [-0.2 0.6],...
13 'newname', datsetname, 'epochinfo', 'yes');
14 - [ALLEEG EEG CURRENTSET] = pop_newset(ALLEEG, EEG, 1);
15 - EEG = pop_rmbase( EEG, [-200 0]);
16 - [ALLEEG EEG] = eeg_store(ALLEEG, EEG, CURRENTSET);
17 - figure; pop_erpimage(EEG,0, comp, [], ['Comp.',int2str(comp)],...
18 10,1,{}, [], '', 'yerplabel', '', 'erp', 'on', 'cbar', 'on', 'topo',...
19 {mean(EEG.icawinv(:,[comp ]),2),EEG.chanlocs EEG.chaninfo});
20
```

same result as ploterpimage.m but easier to change variables at the top

Save as 'ploterpimagewithvars.m' In MATLAB folder

# Run your new script

