

Raw EEG data were first run through the preproc.m script. Then, the epoched data were processed through the ERP PCA Toolkit using the following settings.

EP Toolkit Preprocess Preferences Pane:

Setting	Value
No Figure	<input type="checkbox"/>
Moving Window	80
Chan Min-Max	100
% Bad Channel	10
# Neigh Chans	6
Neigh Diff $\mu$ v	30
Bad Chan Corr	0.400
Blink Corr	0.900
% Bad Trial	20
Size of Chunks	200000000
Warn Trials/Cell	6
Bad Neighbors	<input type="checkbox"/>
$\mu$ v Move Fac	200
Move Corr Facs	20
EMG Ratio	9
EMG Threshold	15
EOG channels	
Spike Pot	2.000
Saturation	1000
fMRI correct	fMRIb O...
Blink Rotation	Infomax
Saccade Method	regression
SP Rotation	vector

Cancel Done

EOG channels will be manually set for each electrode montage.  
(e.g., EOG channels for the 128-channel MagStim EGI sensor layout would be [25 8 127 126 128 125]);

## Preprocess Pane:

The screenshot shows the 'Preprocess Data' dialog box in EEGLAB. It features a title bar with standard macOS window controls and a close button. The dialog is organized into several sections: input/output settings, processing options, and reference settings. The 'In' field is set to 'EEGlab (.set/.study)', 'Type' to 'single\_trial', 'Mont' to 'Adult Hydrocel 128-...', and 'Out' to 'EP (.ept)'. Under 'Points', the 'Baseline' is set to '1:20'. Several checkboxes are present: 'fMRI', 'Detrend', 'EMG', 'alpha', and 'SP', all of which are currently unchecked. The 'Edit Mode' is set to 'both', and 'Eye Mode' is set to 'ICA'. For 'Blinks' and 'Saccades', the mode is set to 'both'. 'Bad Chan' is set to 'replace' and 'Movement' is set to 'fix'. The 'O Ref' and 'C Ref' fields are both set to '1-2 refs' and '129'. A 'Single File Mode' checkbox is located at the bottom of the main settings area. At the very bottom of the dialog are three buttons: 'Template', 'Run', and 'Main'.

**Preprocess Data**

EP

In: EEGlab (.set/.study)

Type: single\_trial

Mont: Adult Hydrocel 128-...

Out: EP (.ept)

Points: Baseline 1:20

fMRI

Detrend

EMG

alpha

SP

Edit Mode: both

Eye Mode: ICA

Blinks: both

Saccades: both

Bad Chan: replace

Movement: fix

O Ref: 1-2 refs 129

C Ref: 1-2 refs 129

☐ Single File Mode

Template Run Main

The Montage, O Ref (original reference), and C Ref (current reference) will be adjusted to fit the incoming dataset.

Data-specific blink and saccade templates will be made for each data format. Templates automatically generated for each individual file will also be used.

## Transform Pane:

**Transform Data**

EP

In: EP (.ept)

Type: average

Mont: Generic 10-05

Out: EP (.ept)

Data mode: EEG

Rereference EEG: Traditional

Reference Channel(s): 57 100

☐ Detrend

Prestim: 400 Baseline: -400 Mains: -200

none 0 delay

Two-Pass Butterworth 6

FFT: no change

Method: none

Smooth: 1

Transform Main

The channels used for referencing to algebraically-linked mastoids will be changed for each montage.