

Net Station File Import & Export

EGI Summer School, 2014

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Net Station File Export

Export Format Options

Net Station Simple Binary: *EEGLab, Vision Analyzer and BESA*

Tab-delimited Tex: Excel etc.

MATLAB MAT-file: Matlab

Persyst: Clinical review software from Persyst

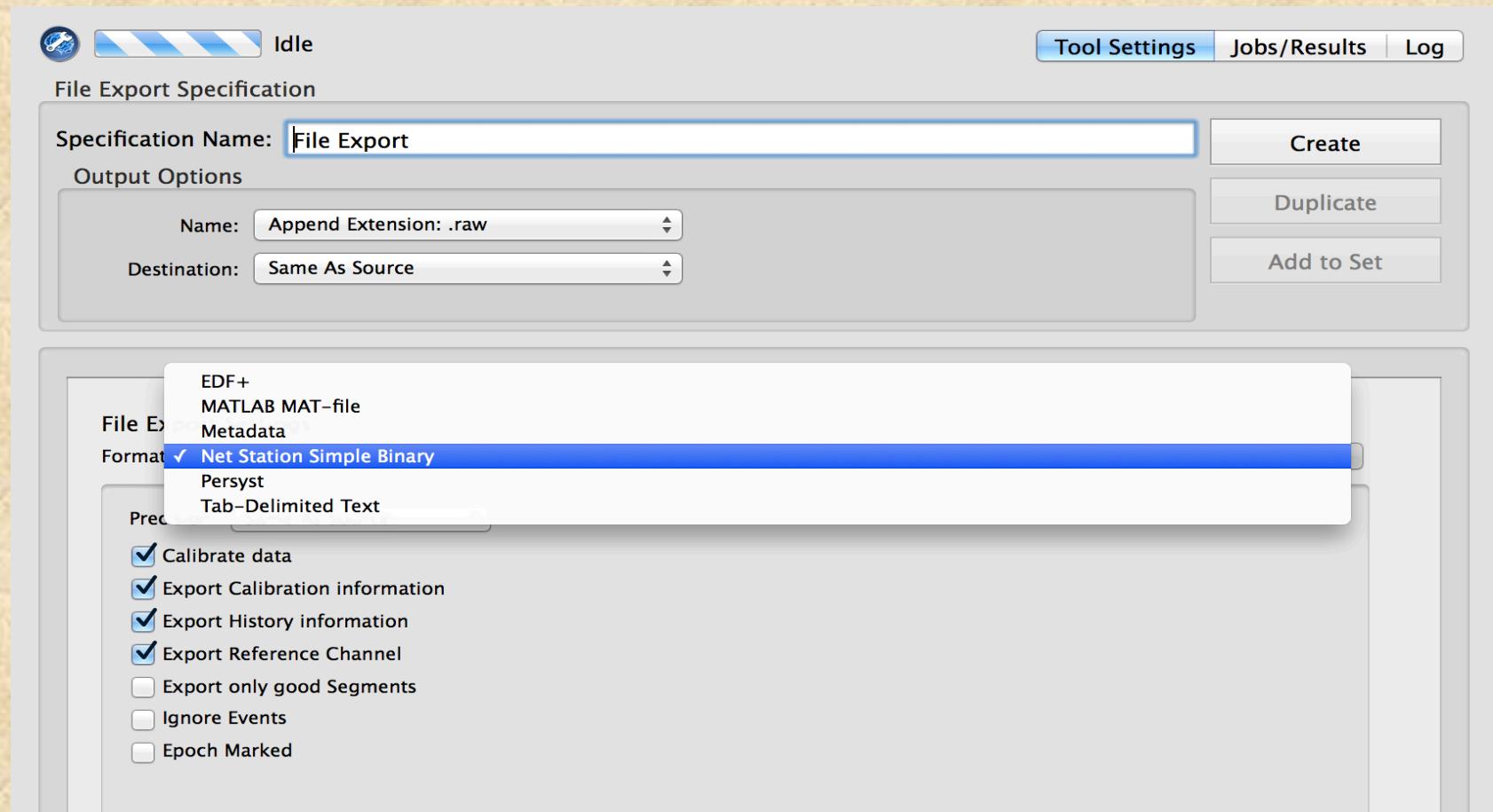
EDF+: any EEG software that reads EDF/EDF+

Metadata: exporting the calibration, history and segment information
in text

Net Station File Export

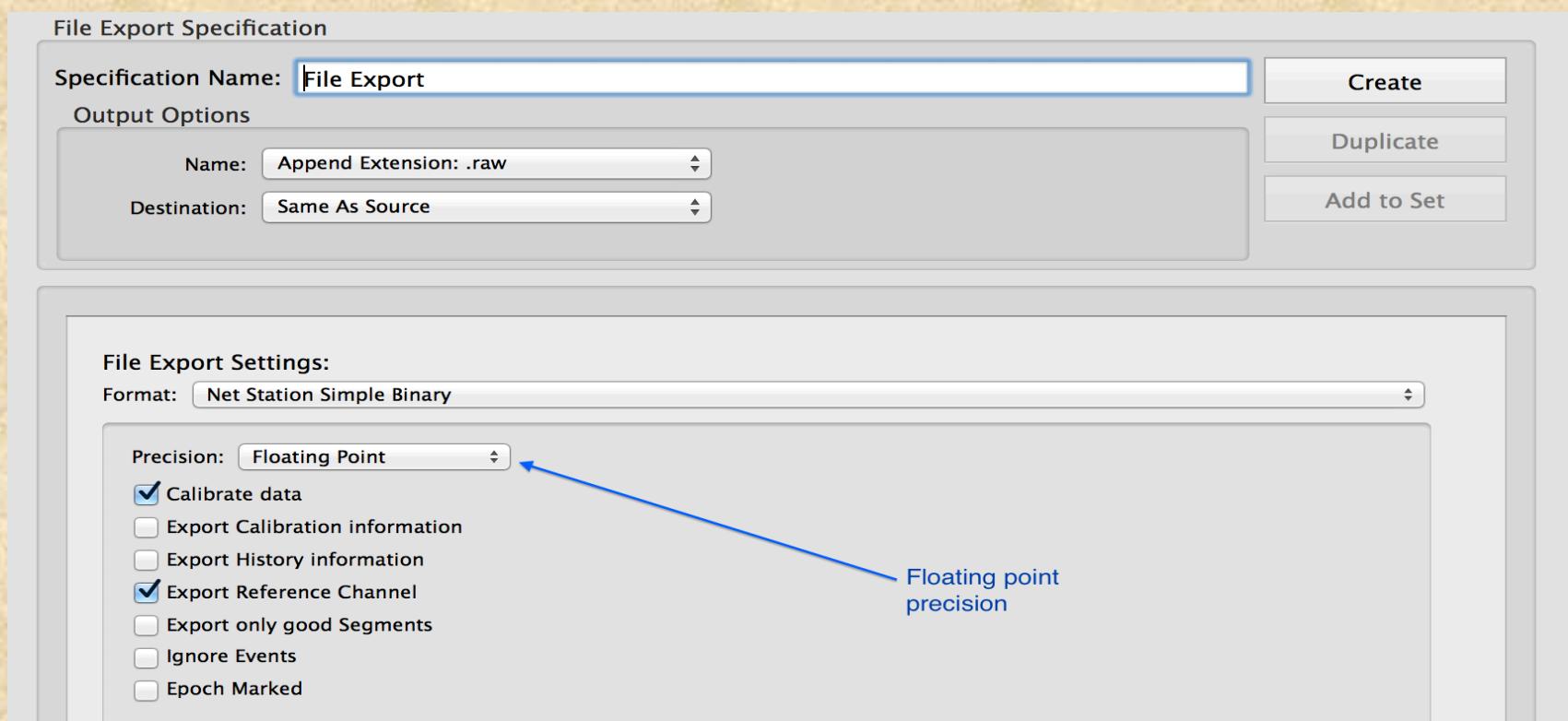
File Export Waveform Tool Interface

- Net Station Tools > Create > File Export



Net Station File Export

- Data collected with Net Amp 300/400 must be exported in floating point precision.



Sharing Data with BESA

- Exporting unprocessed continuous data to simple binary for use in BESA
- Exporting averaged ERP data to simple binary for use in BESA

The image displays three separate instances of the BESA 'File Export Specification' dialog box, each showing different export settings.

Top Dialog (Continuous Data):

- Specification Name:** Export Continuous to BESA
- Output Options:**
 - Name: Append Extension: .raw
 - Destination: Same As Source
- Buttons:** Create, Duplicate, Add to Set

Middle Dialog (Continuous Data Settings):

- File Export Settings:**
 - Format: Net Station Simple Binary
- Precision:** Floating Point
- Checkboxes (selected):** Calibrate data, Epoch Marked
- Unselected Checkboxes:** Export Calibration information, Export History information, Export Reference Channel, Export only good Segments, Ignore Events

Bottom Dialog (Averaged ERP Data):

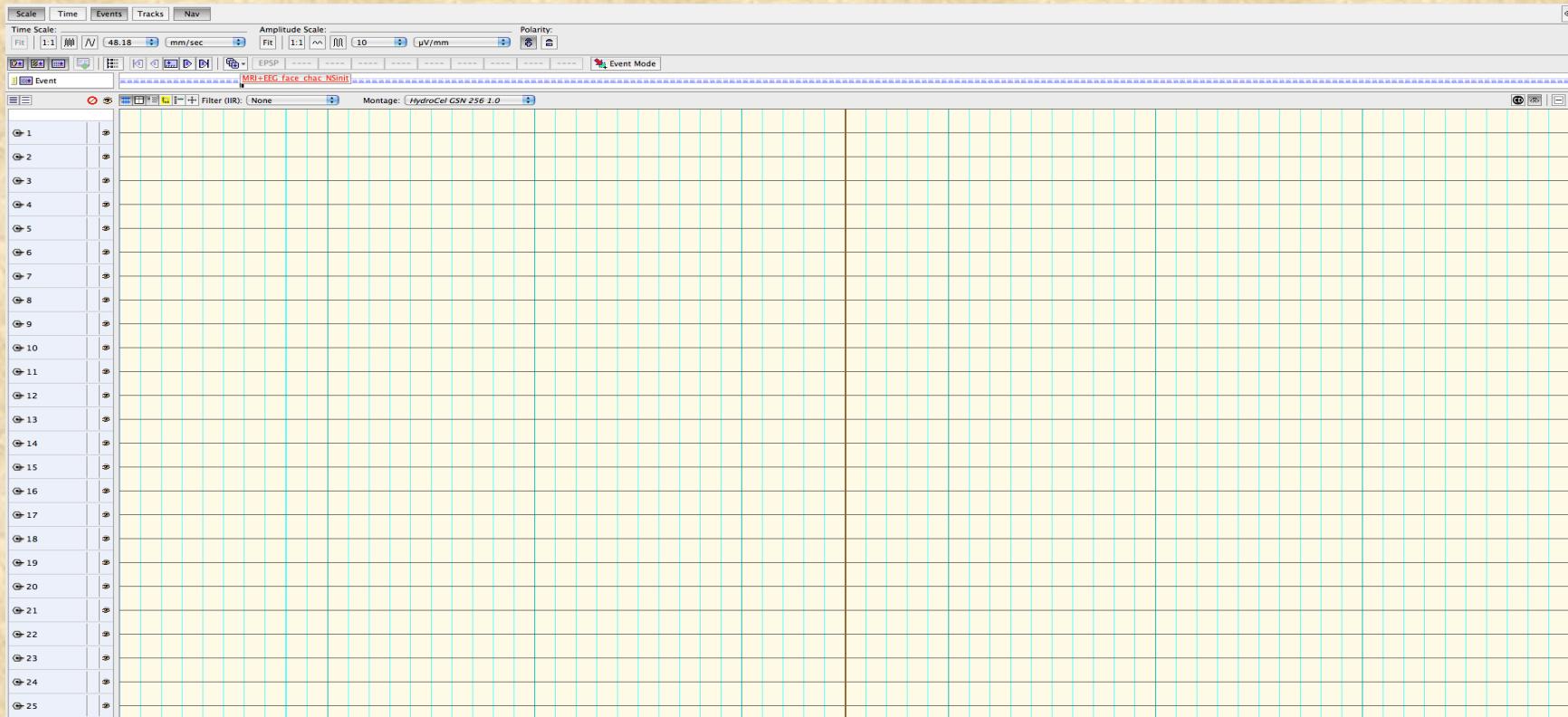
- Specification Name:** Export Averaged ERP to BESA
- Output Options:**
 - Name: Append Extension: .raw
 - Destination: Same As Source
- Buttons:** Create, Duplicate, Add to Set

Middle Dialog (Averaged ERP Data Settings):

- File Export Settings:**
 - Format: Net Station Simple Binary
- Precision:** Floating Point
- Checkboxes (selected):** Calibrate data, Export Reference Channel, Epoch Marked
- Unselected Checkboxes:** Export Calibration information, Export History information, Export only good Segments, Ignore Events

Exporting Data to EDF+

For data collected in Net Amp 300/400, the data MUST run through a highpass filter (0.1~Hz) first before exporting to EDF+, or you will see following:



Exporting Data to EDF+

- Run 0.1Hz or similar highpass filter:

Filtering Specification

Specification Name: **0.10 Hz Highpass**

Create Duplicate Add to Set

Output Options

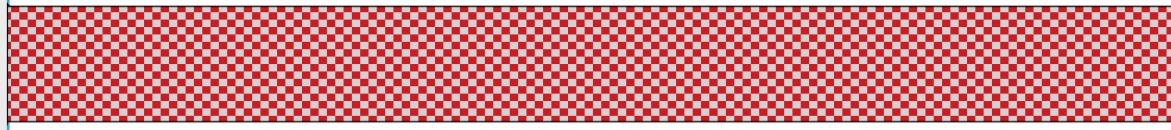
Name: Append Operation Name: _fil

Destination: Same As Source

Include video if appropriate

Filtering Settings:

Auto set name: **0.10 Hz Highpass**

Highpass  0.10

Lowpass

Notch

Options

Exporting Data to EDF+

- Then export filtered data (DC removed) to EDF+

File Export Specification

Specification Name:	Export to EDF+	Create
Output Options		Duplicate
Name:	Append Extension: .edf	Add to Set
Destination:	Same As Source	

File Export Settings:

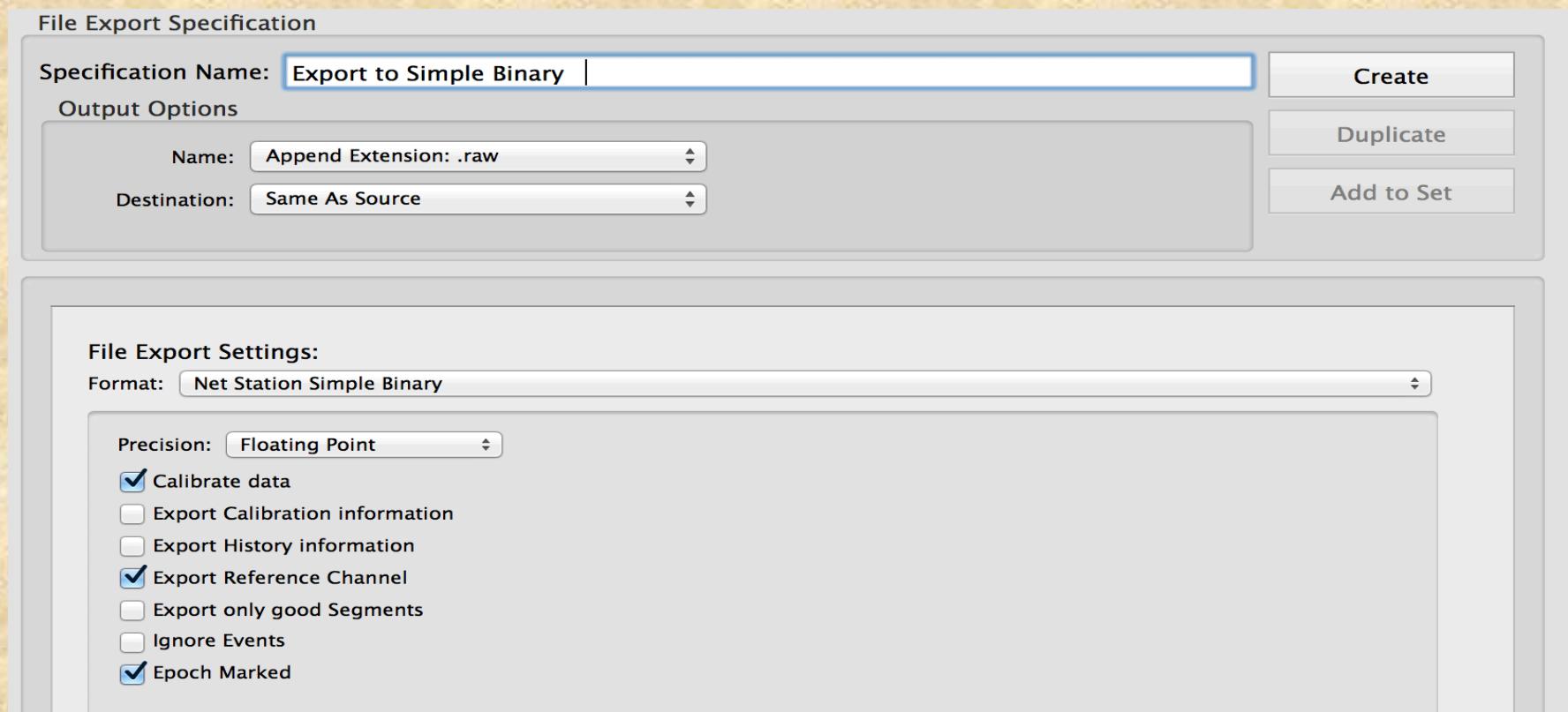
Format:	EDF+
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Exporting Data to EDF+

- EDF+ file generated by Net Station can be opened in Net Station 4.5.x Data viewer, or EDF browsers such as EDFbrowser:
[http://homepage3.nifty.com/sunset-literat/EEG_analysis_and_more/
EDFbrowser on Mac.html](http://homepage3.nifty.com/sunset-literat/EEG_analysis_and_more/EDFbrowser_on_Mac.html)
- Net Station 5.0 Reviewer does not support EDF file.
- Net Station 4.5.x does not support non-EGI derived EDF files.

Sharing Data With EEGLab

- EEGLab supports Net Station simple binary format (.raw) with events



Sharing Data With EEGLab

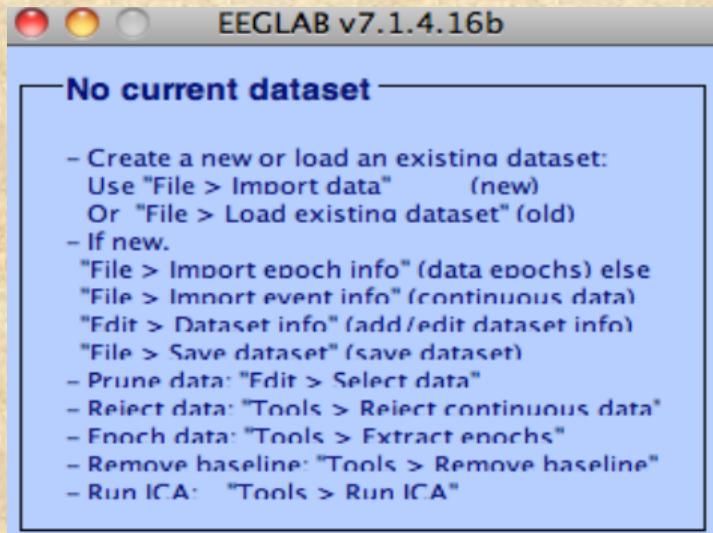
- EEGLab does not recognize breaks in recording (Epoch breaks) when reading .raw files.
- To avoid recording breaks with EPrime for experiment control, add “false” to the end of parameter line in NSInit object, such as following:
`c, “on”, CellList, “socket”, “10.0.0.42”, false`
do not put NSStopRecording object except at the end of experiment.

Sharing Data With EEGLab

- Open simple binary data in EEGLab in the Matlab terminal, type:

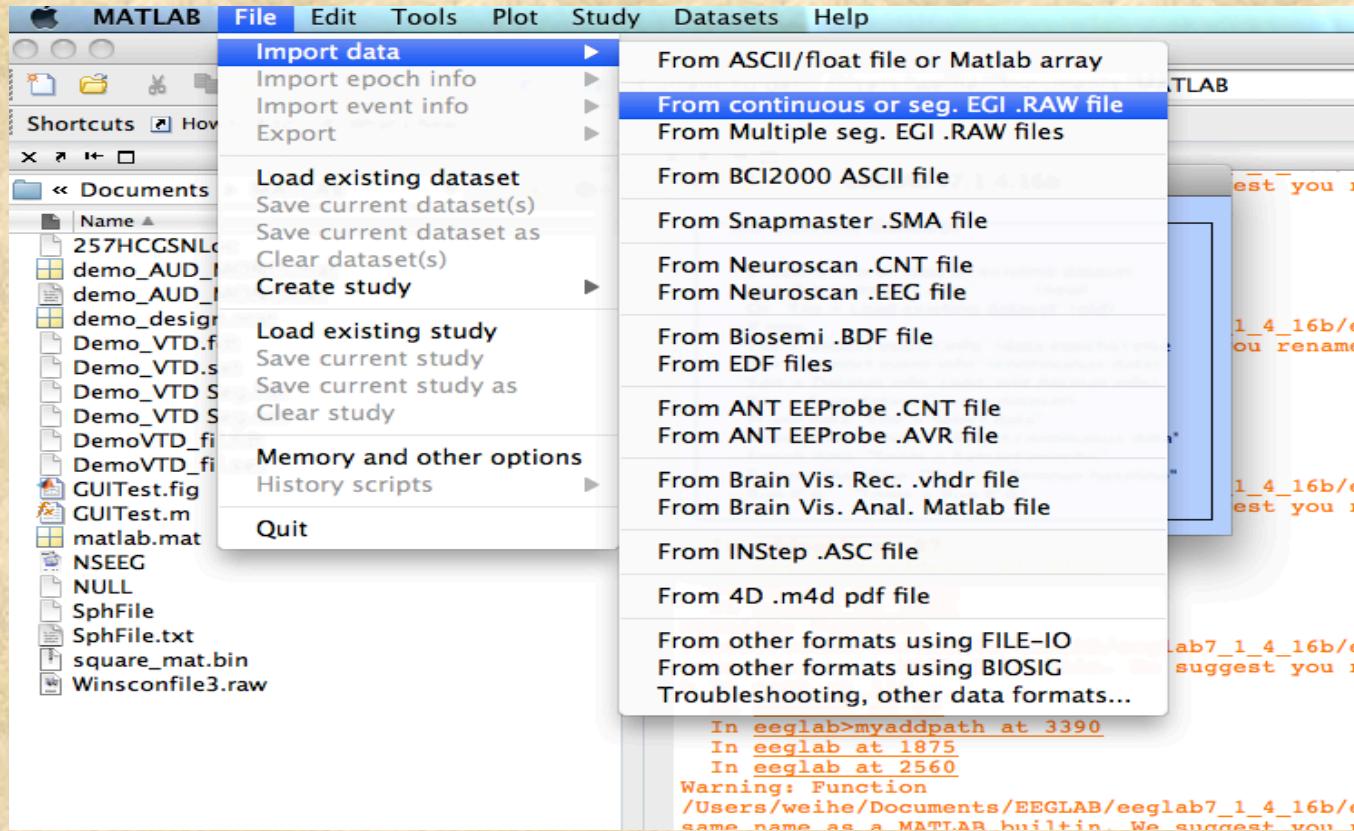
> eeglab [enter]

EEGLab startup menu shows up as below:



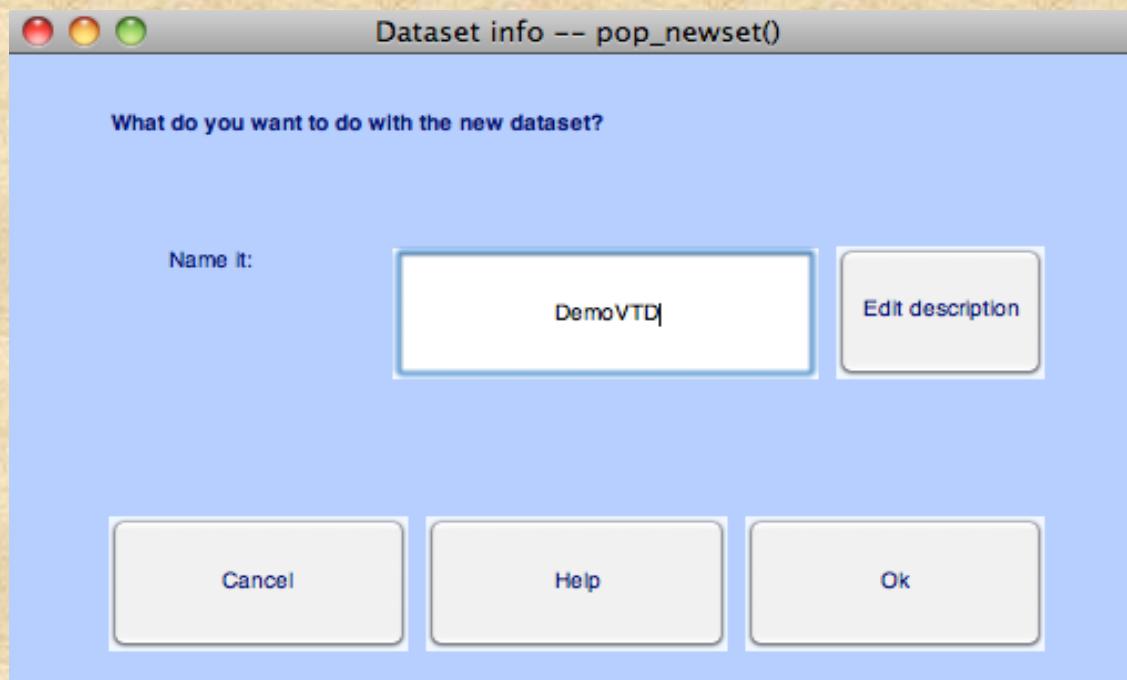
Sharing Data With EEGLab

- On Matlab menu bar, choose File > Import Data > From continuous or seg. EGI .RAW file



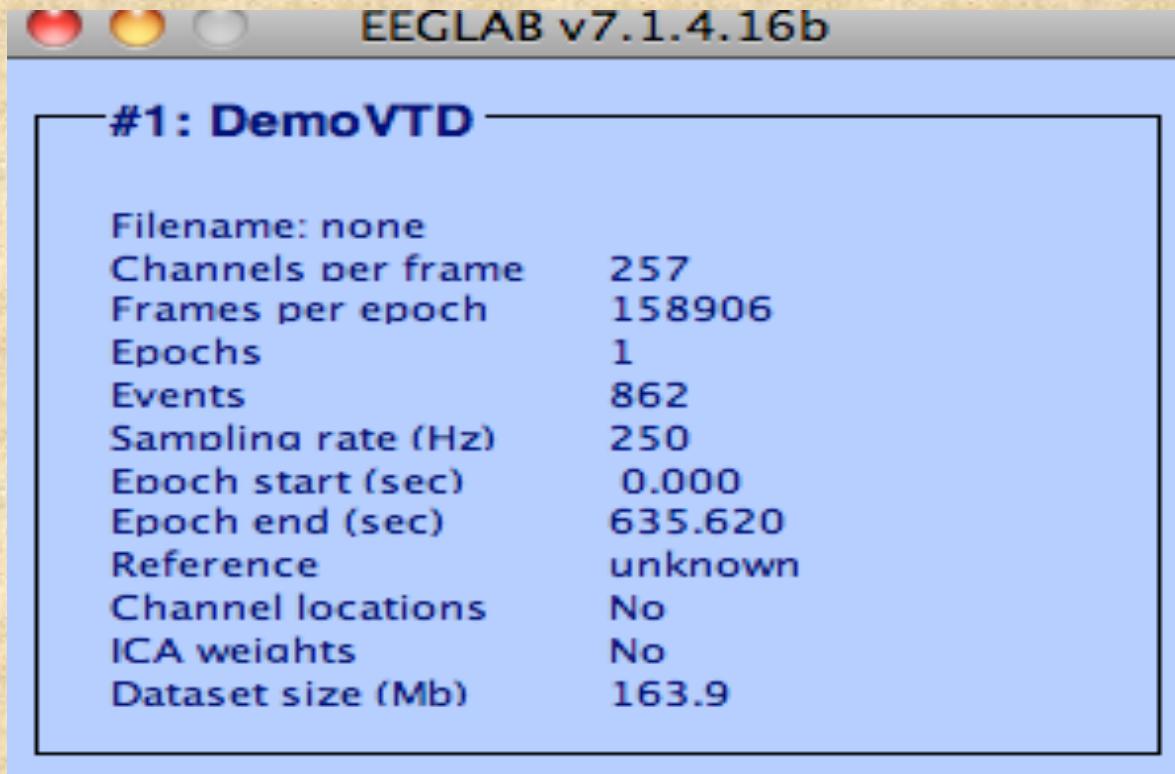
Sharing Data With EEGLab

- Navigate to the .raw data that needs to be imported, and click Ok
- A dataset popup window will appear as below, assign a name for the dataset, in this case, DemoVTD, click OK.



Sharing Data With EEGLab

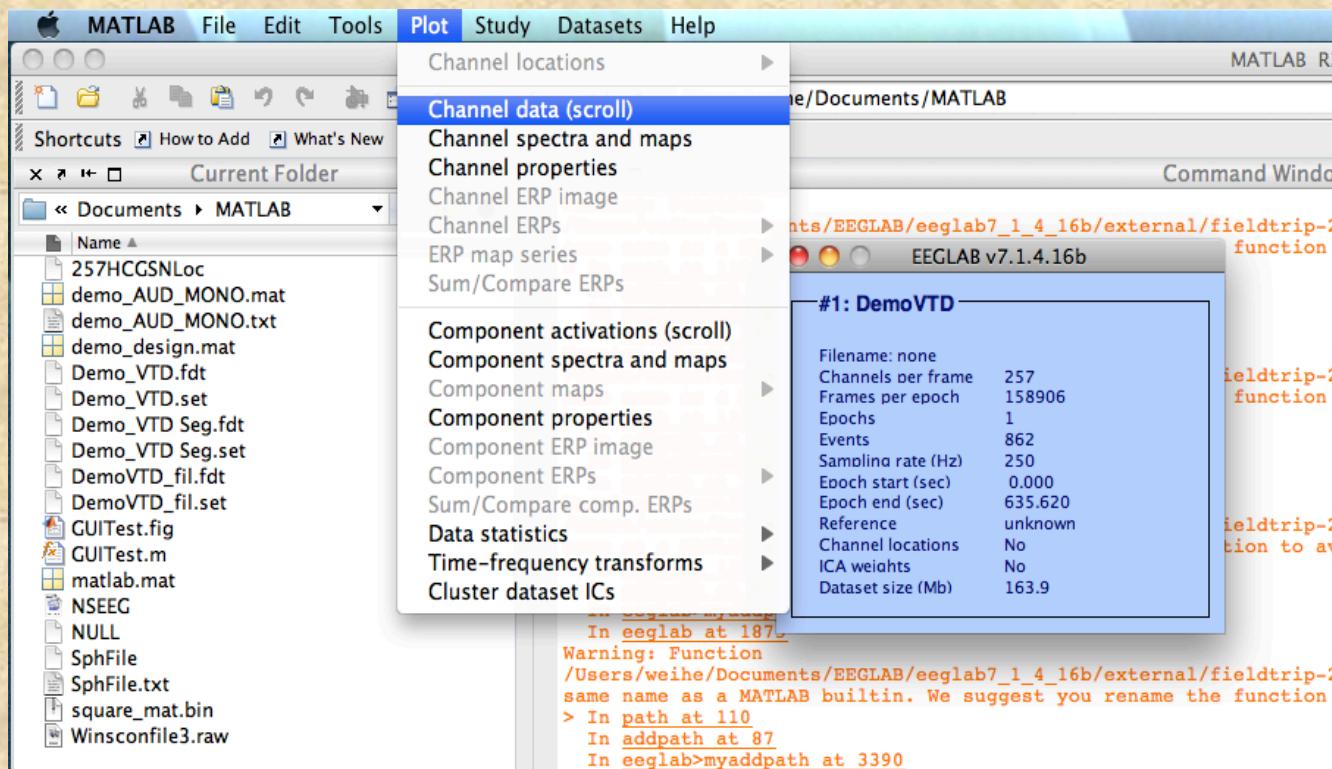
- Once data is correctly loaded, the dataset popup window will update its information fields. Verify these information. They should matches the specifications from the original data recording.



Sharing Data With EEGLab

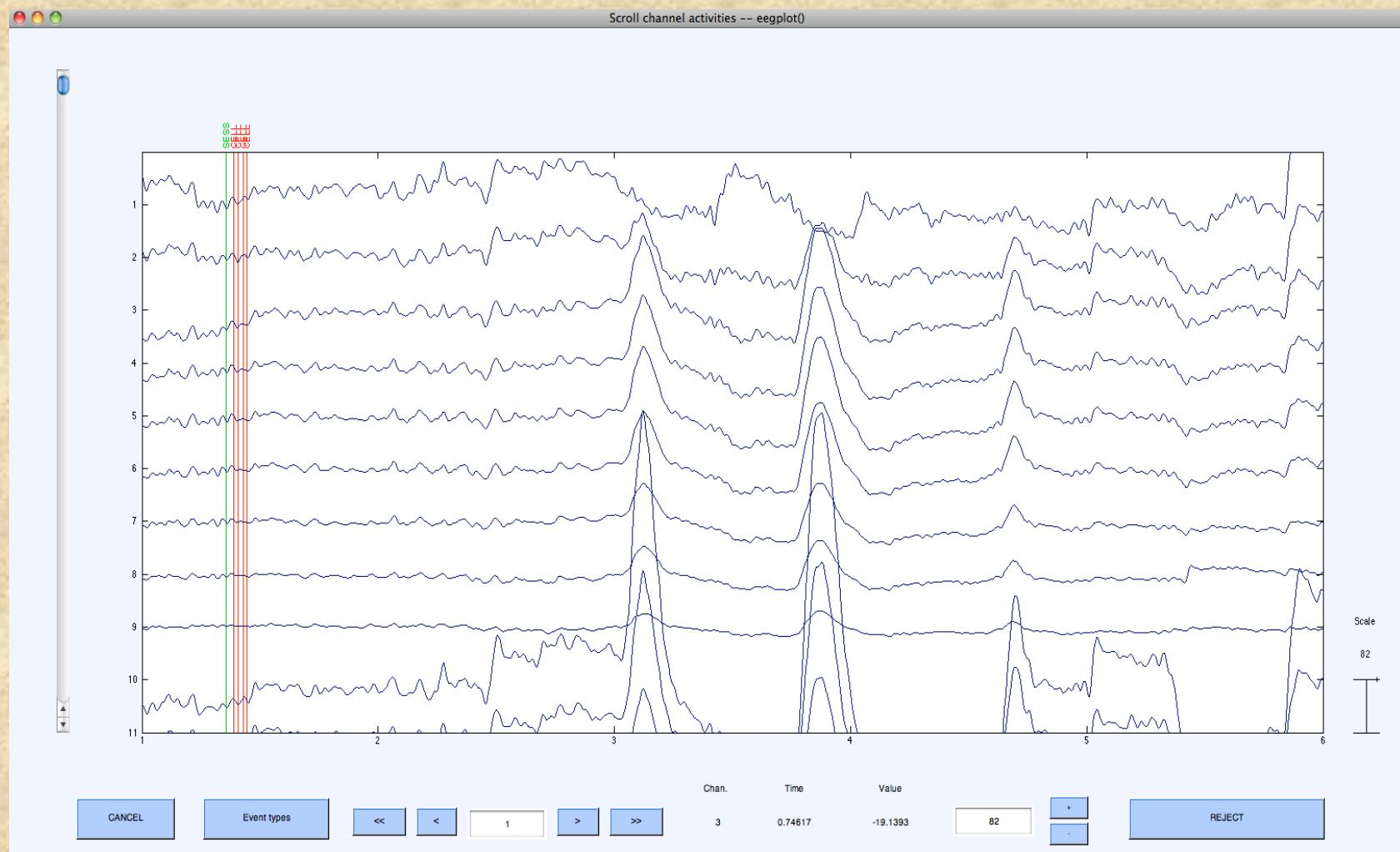
- Now you can work on the dataset in EEGLab for further processing.

To plot data in Chart View, Plot > Channel Data (scroll)



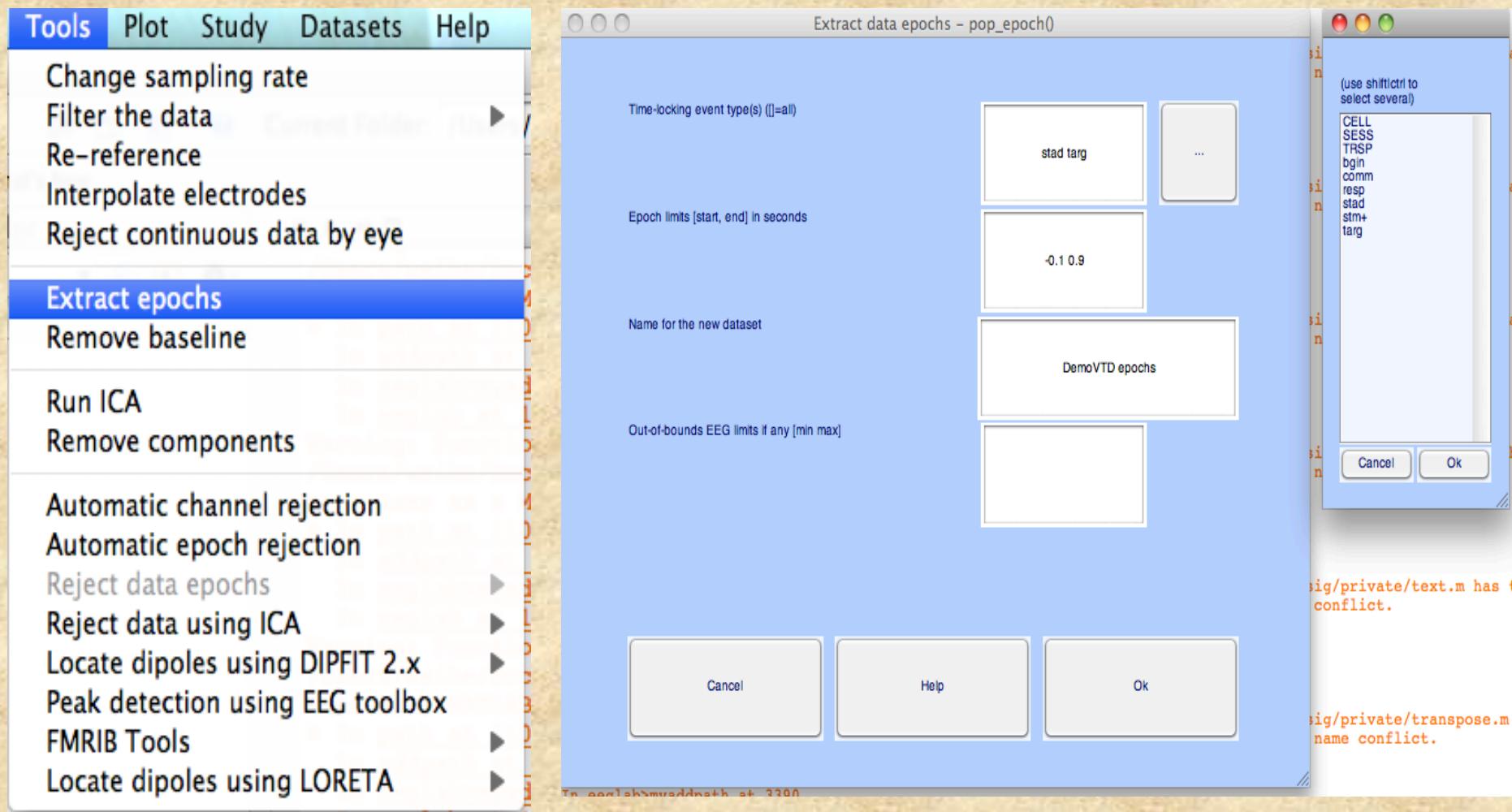
Sharing Data With EEGLab

Chart view in EEGLab



Sharing Data With EEGLab

You can segmenting data (in EEGLab, it is called Extract epochs) using the cell events created by Segmentation Markup tool



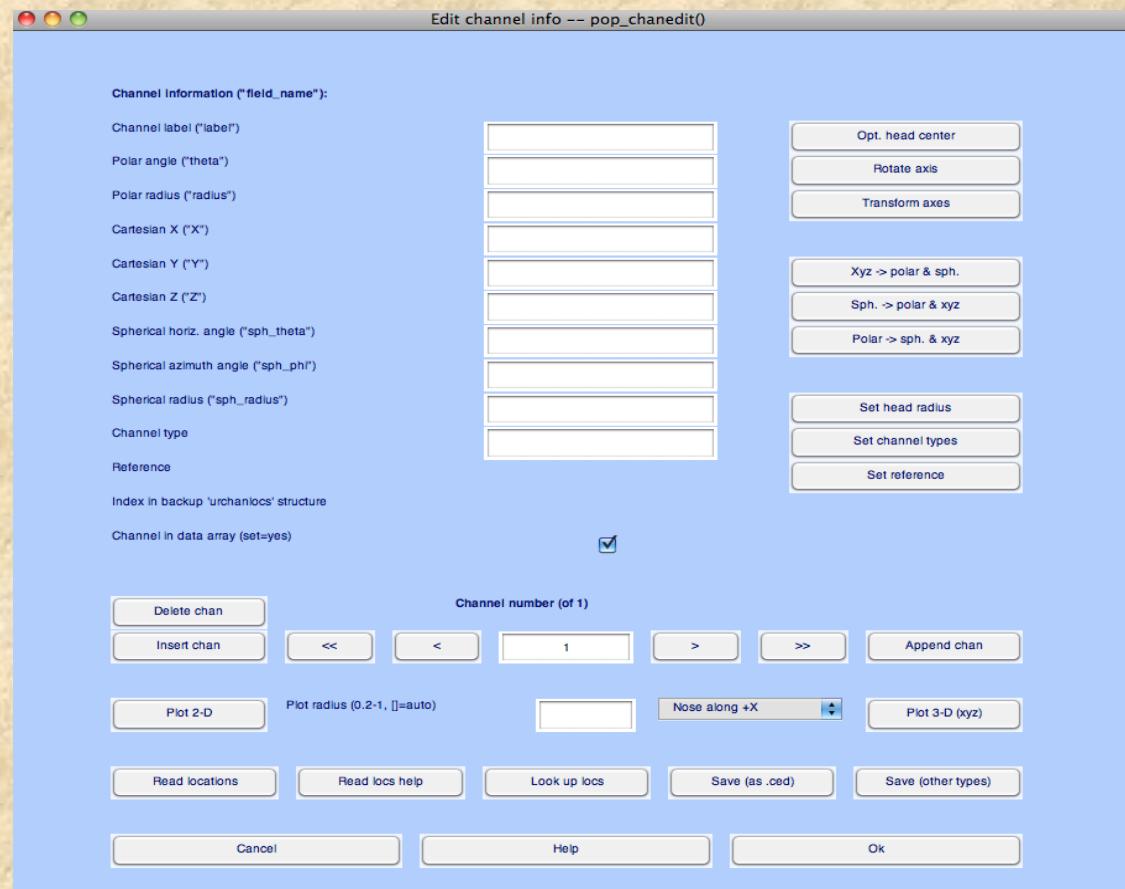
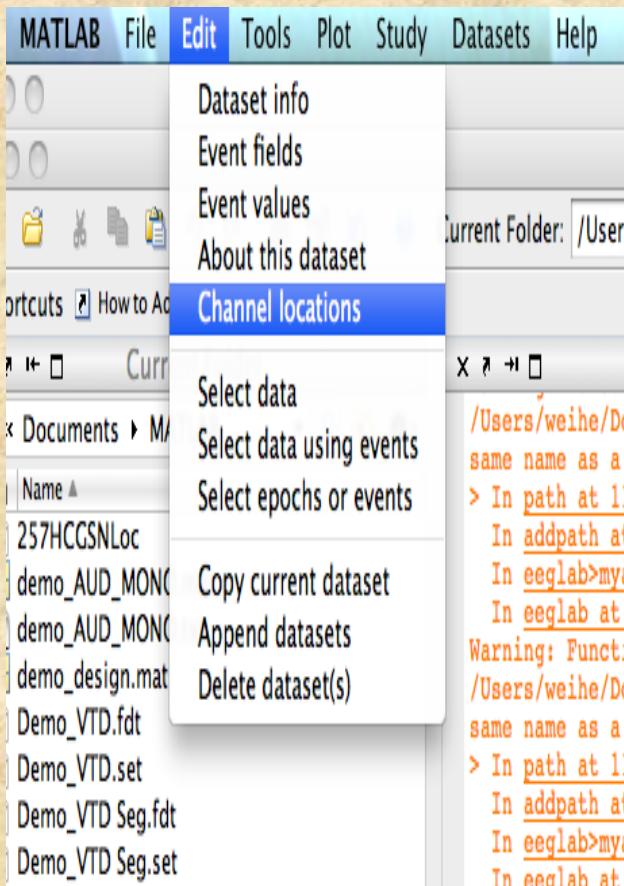
Sharing Data With EEGLab

- To plot data in Topoplot view (equivlant to Topomap view in Net Station), EEGLab needs to read EGI coordinates file.
- EGI provides Cartesian coordinates (x, y, z) for all channel counts for both GSN and HCGSN nets. They are available in EGI website customer area.
- Example of file names:

GSN256.sfp	GSN-HydroCel-256.sfp	without Ref
GSN257.sfp	GSN-HydroCel-257.sfp	with Ref

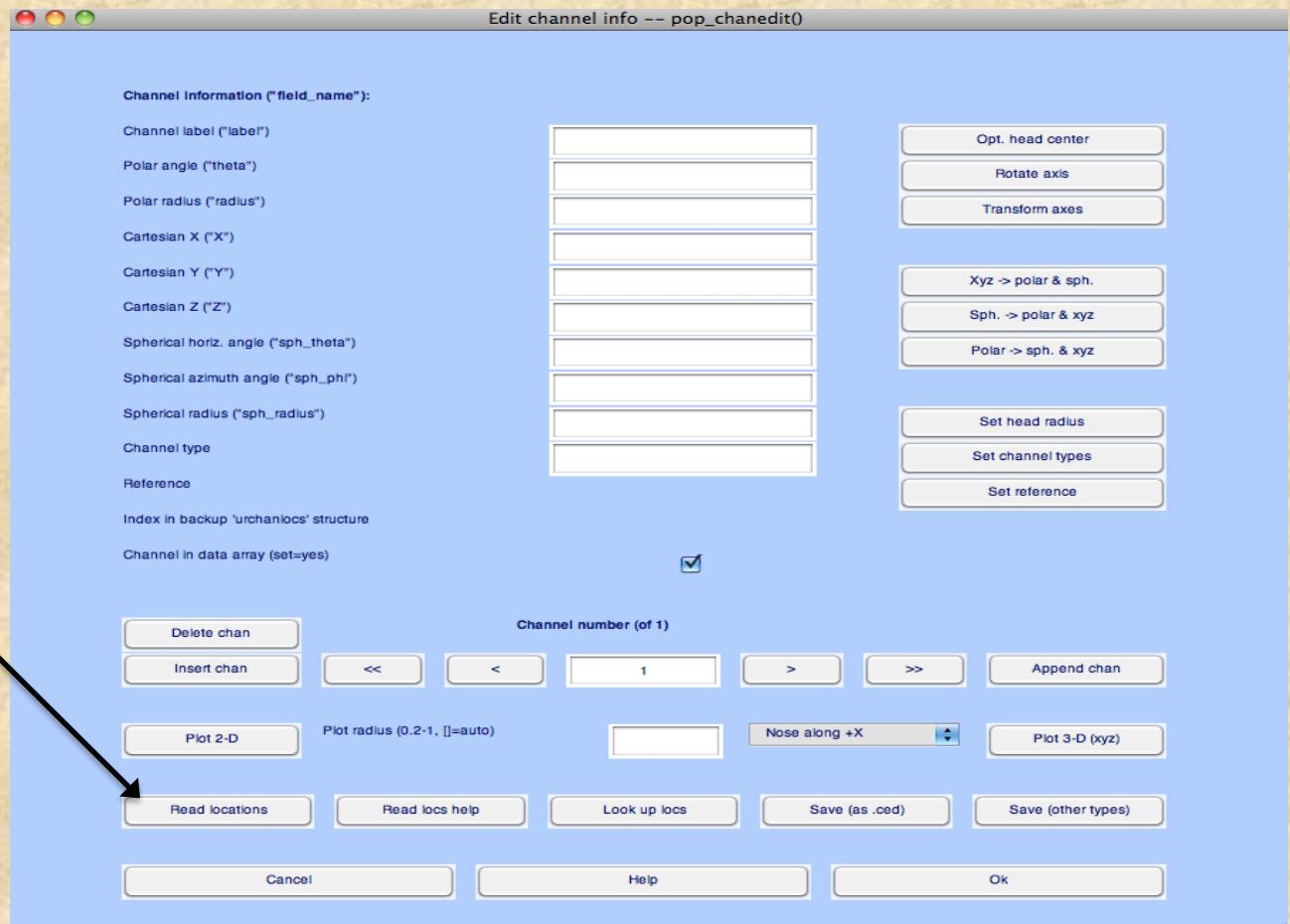
Sharing Data With EEGLab

- In EEGLab menu bar, choose Edit > Channel Locations (lower left below)
- A popup window should show (lower right below)



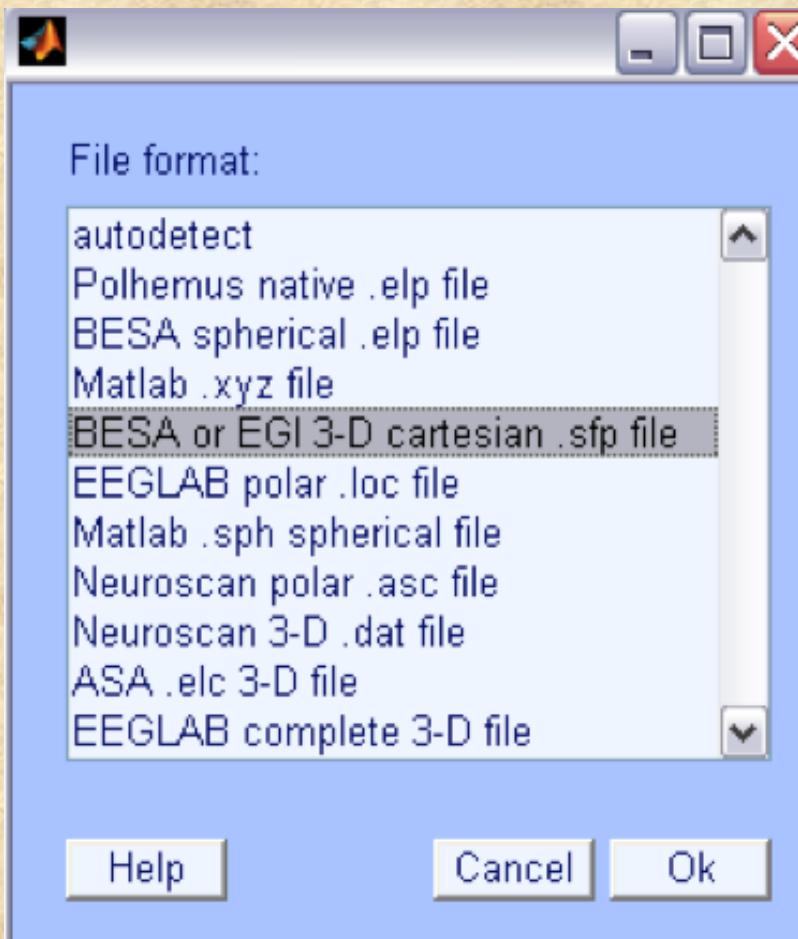
Sharing Data With EEGLab

- Click “Read Locations” button on the lower left in the window



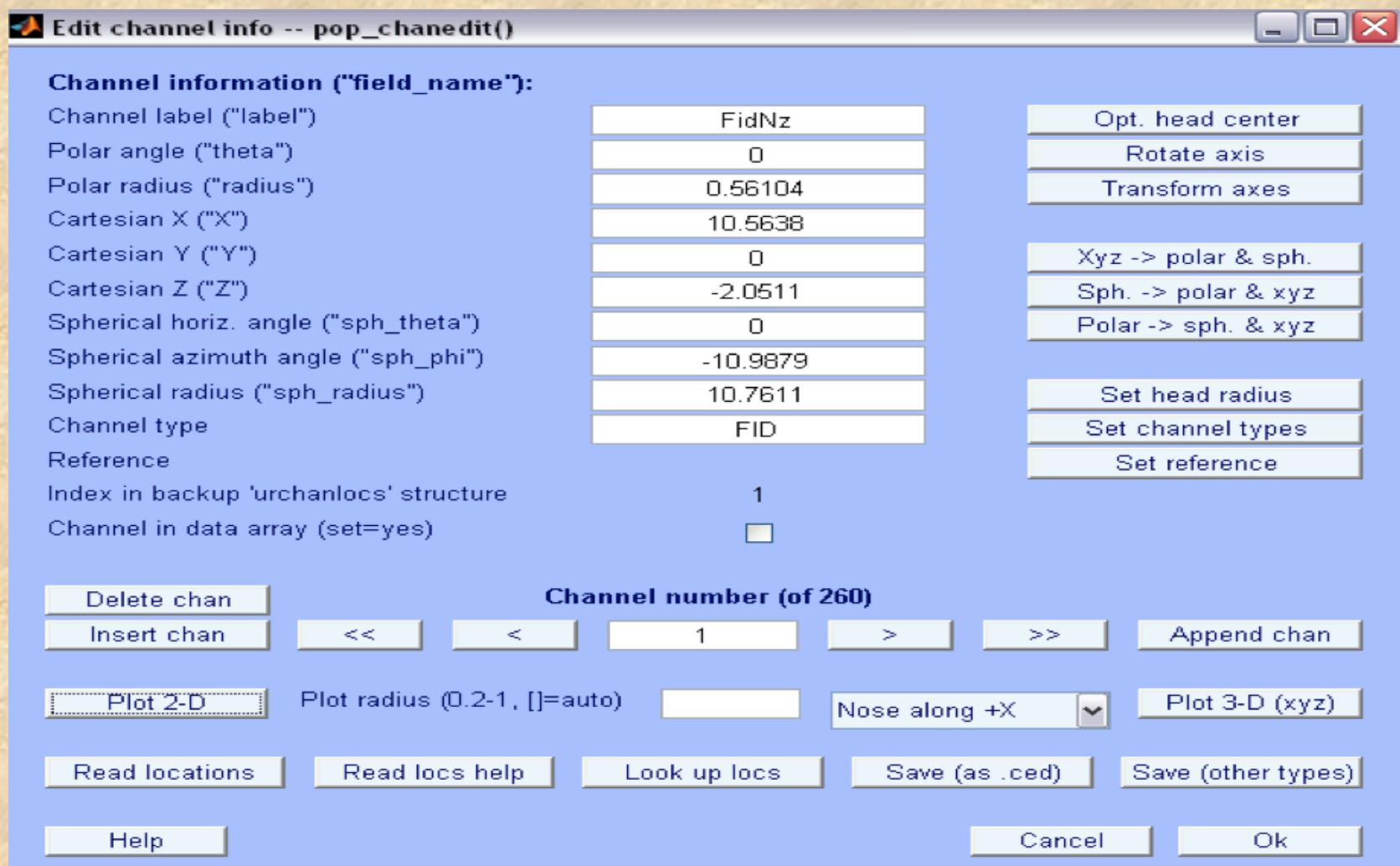
Sharing Data With EEGLab

- Another popup window shows.
Choose “BESA or EGI 3-D cartesian .sfp file



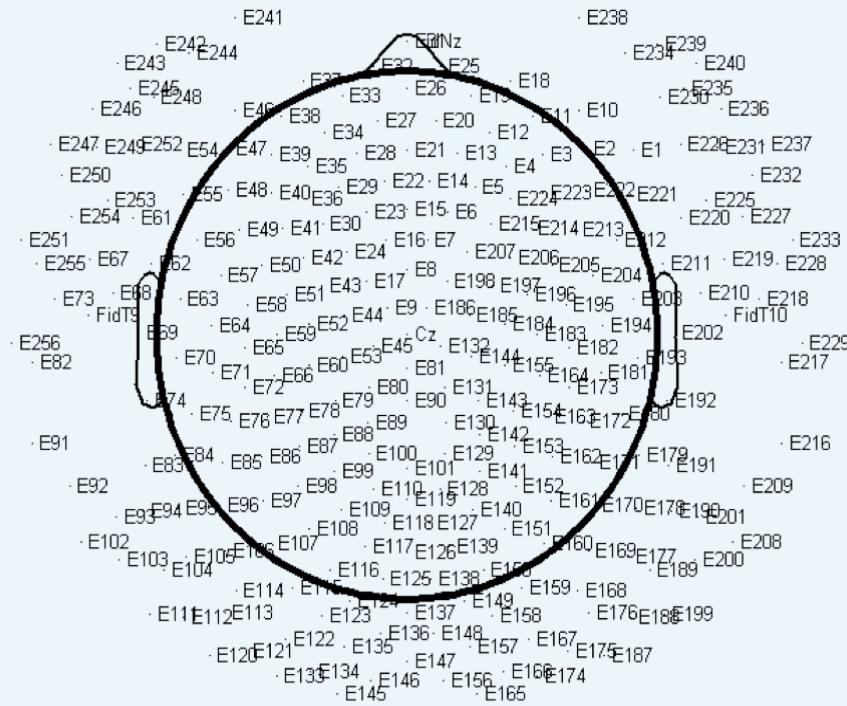
Sharing Data With EEGLab

- Navigate to the coordinates file and click OK.

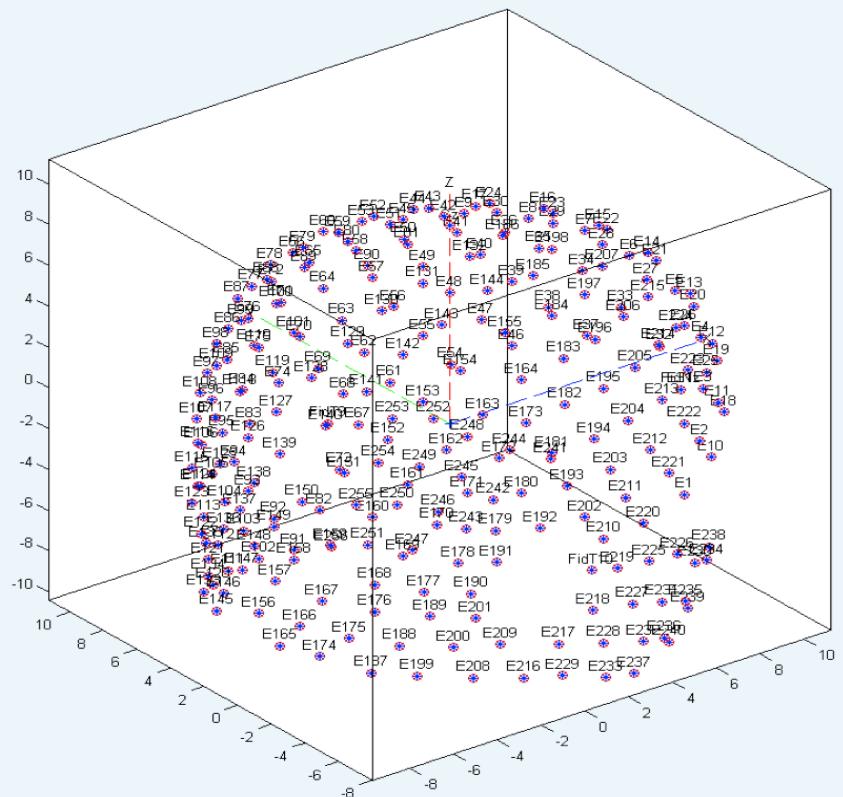


Sharing Data With EEGLab

Click “Plot 2-D” button



Click “Plot 3-D” button



Sharing Data With EEGLab

After .raw data and coordinates have been loaded into the EEGLab successfully, you can run topo plot.

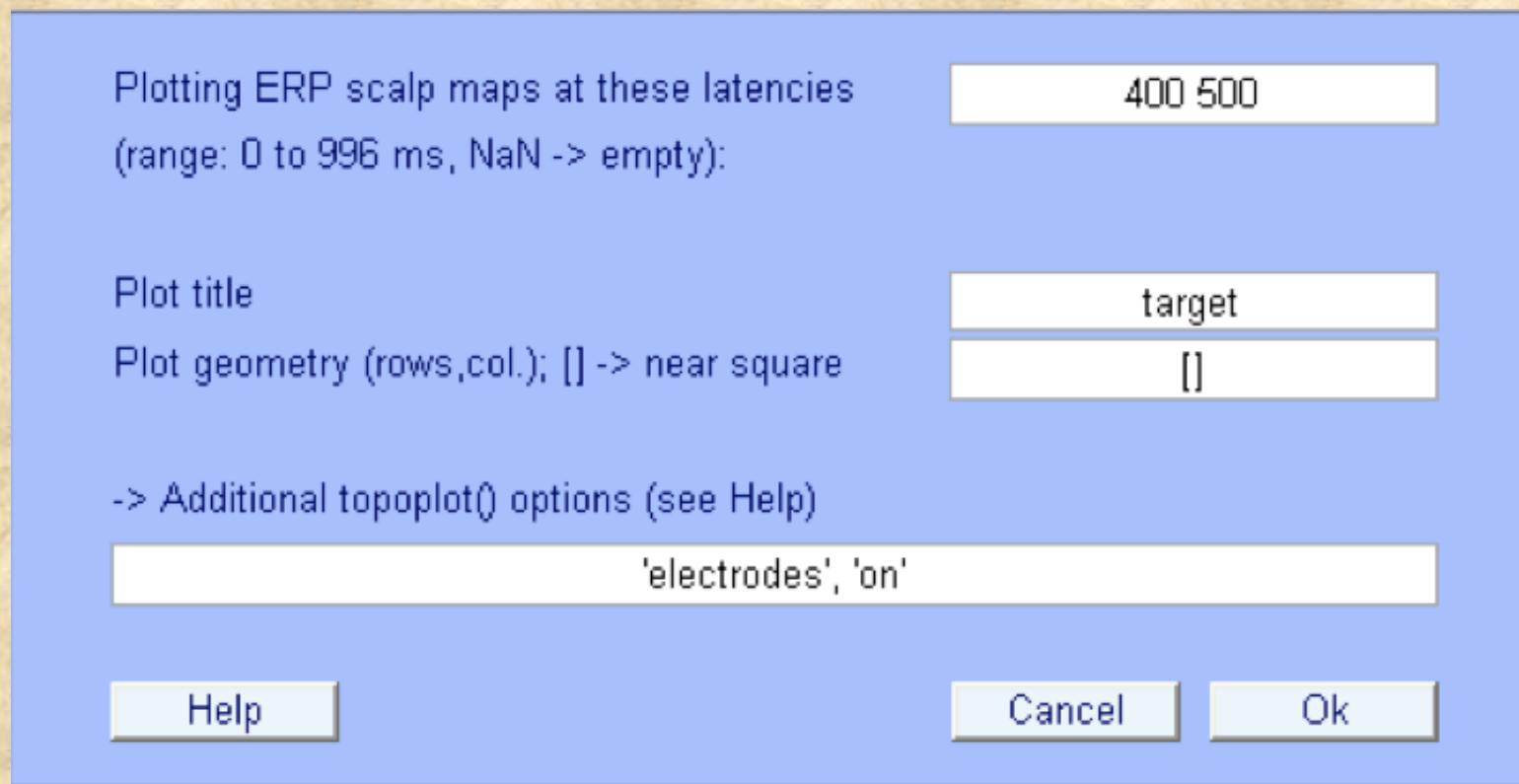
In the Matlab terminal, type:

> `pop_topoplot (EEG) [enter]`

* The input “EEG” above is the universal variable for the EEG dataset that’s currently loaded into EEGLab

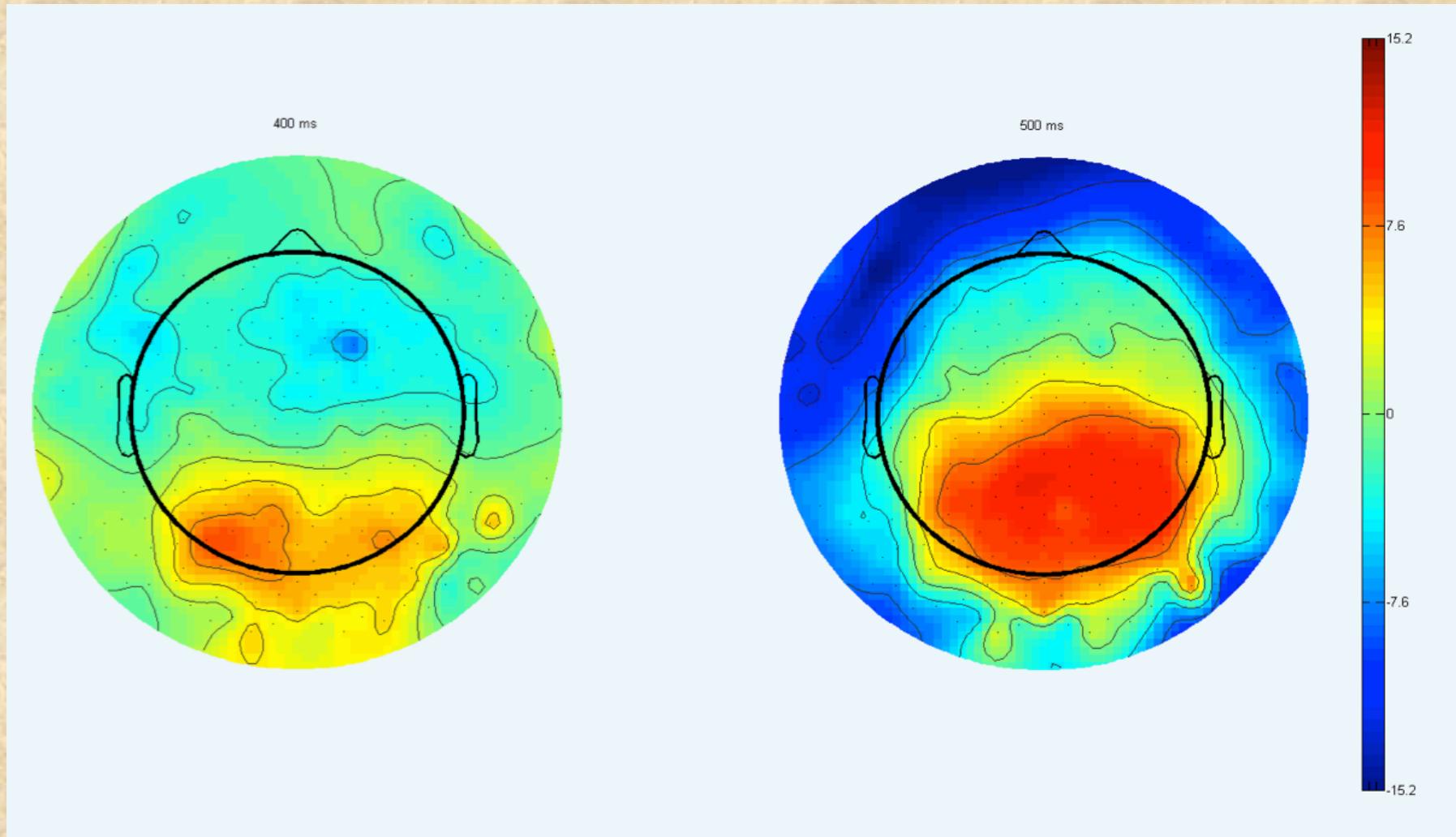
Sharing Data With EEGLab

- `pop_topoplot()` command generates following window.
- Edit the fields to choose desired latencies, show/hide electrodes etc. Click OK.



Sharing Data With EEGLab

- The topoplot view is generated as following:



Coordinates Conversion

- To convert BESA/EGI Cartesian .sfp coordinates to other format, you **MUST** remove the fiducial points in the file (first 3 rows) first.

GSN-HydroCel-257.sfp			
FidNz	0.00000	10.56381	-2.05108
FidT9	-7.82694	0.45386	-3.76056
FidT10	7.82694	0.45386	-3.76056
E1	6.96223	5.38242	-2.19061
E2	6.48414	6.40424	-0.14004
E3	5.69945	7.28796	1.79088
E4	4.81093	7.77321	3.65006
E5	3.61962	7.47782	5.50947
E6	2.25278	6.46157	6.96317
E7	1.18879	5.21755	8.13378
E8	0.00000	3.59608	8.75111
E9	-1.15339	1.51369	9.19904
E10	5.94022	7.38337	-1.51513
E11	5.07624	8.37264	0.40595
E12	3.87946	9.03611	2.51559
E13	2.60756	8.97868	4.39107
E14	1.23344	8.11574	6.06161
E15	0.00000	6.81181	7.28186
E16	-1.18879	5.21755	8.13378
E17	-2.29559	2.91372	8.55810
E18	4.06489	9.40559	-0.89098
E19	2.86784	10.01456	0.85212
E20	1.42153	10.06322	2.84803
E21	0.00000	9.40339	4.65829
E22	-1.23344	8.11574	6.06161
E23	-2.25278	6.46157	6.96317
E24	-3.34467	4.40891	7.67253
E25	1.39547	10.65281	-0.61138
E26	0.00000	10.68996	1.00542
E27	-1.42153	10.06322	2.84803
E28	-2.60756	8.97868	4.39107
E29	-3.61962	7.47782	5.50947
E30	-4.49828	5.59395	6.28801
E31	0.00000	10.56381	-2.05108
E32	-1.39547	10.65281	-0.61138
E33	-2.86784	10.01456	0.85212
E34	-3.87946	9.03611	2.51559
E35	-4.81093	7.77321	3.65006
E36	-5.10466	6.41586	4.77815
E37	-4.06489	9.40559	-0.89098
E38	-5.07624	8.37264	0.40595
E39	-5.69945	7.20796	1.79088
E40	-6.16984	6.11292	3.29612
E41	-6.01447	4.93908	4.85771

GSN-HydroCel-257Only.sfp			
E1	6.96223	5.38242	-2.19061
E2	6.48414	6.40424	-0.14004
E3	5.69945	7.20796	1.79088
E4	4.81093	7.77321	3.65006
E5	3.61962	7.47782	5.50947
E6	2.25278	6.46157	6.96317
E7	1.18879	5.21755	8.13378
E8	0.00000	3.59608	8.75111
E9	-1.15339	1.51369	9.19904
E10	5.94022	7.38337	-1.51513
E11	5.07624	8.37264	0.40595
E12	3.87946	9.03611	2.51559
E13	2.60756	8.97868	4.39107
E14	1.23344	8.11574	6.06161
E15	0.00000	6.81181	7.28186
E16	-1.18879	5.21755	8.13378
E17	-2.29559	2.91372	8.55810
E18	4.06489	9.40559	-0.89098
E19	2.86784	10.01456	0.85212
E20	1.42153	10.06322	2.84803
E21	0.00000	9.40339	4.65829
E22	-1.23344	8.11574	6.06161
E23	-2.25278	6.46157	6.96317
E24	-3.34467	4.40891	7.67253
E25	1.39547	10.65281	-0.61138
E26	0.00000	10.68996	1.00542
E27	-1.42153	10.06322	2.84803
E28	-2.60756	8.97868	4.39107
E29	-3.61962	7.47782	5.50947
E30	-4.49828	5.59395	6.28801
E31	0.00000	10.56381	-2.05108
E32	-1.39547	10.65281	-0.61138
E33	-2.86784	10.01456	0.85212
E34	-3.87946	9.03611	2.51559
E35	-4.81093	7.77321	3.65006
E36	-5.10466	6.41586	4.77815
E37	-4.06489	9.40559	-0.89098
E38	-5.07624	8.37264	0.40595
E39	-5.69945	7.20796	1.79088
E40	-6.16984	6.11292	3.29612
E41	-6.01447	4.93908	4.85771

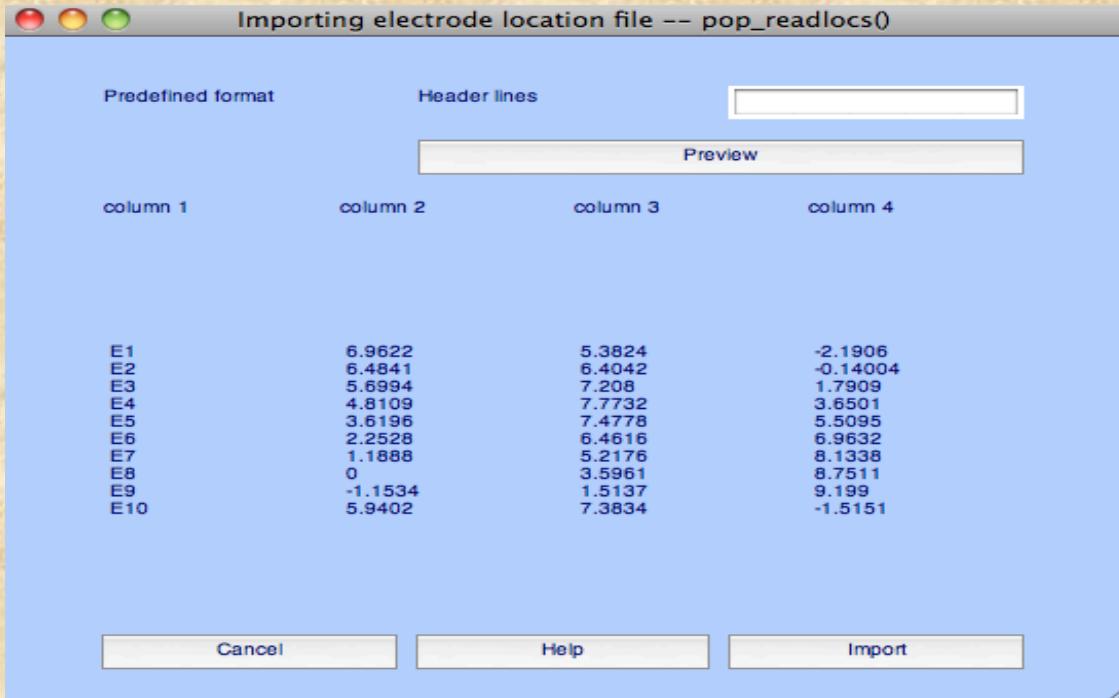
Coordinates Conversion

On the Matlab terminal, type:

`>> CartCoords = pop_readlocs [enter]`

* Note: CartCoords is the variable that stores the coordinates from `pop_readlocs()`

Navigate to the coordinate file, select and click OK



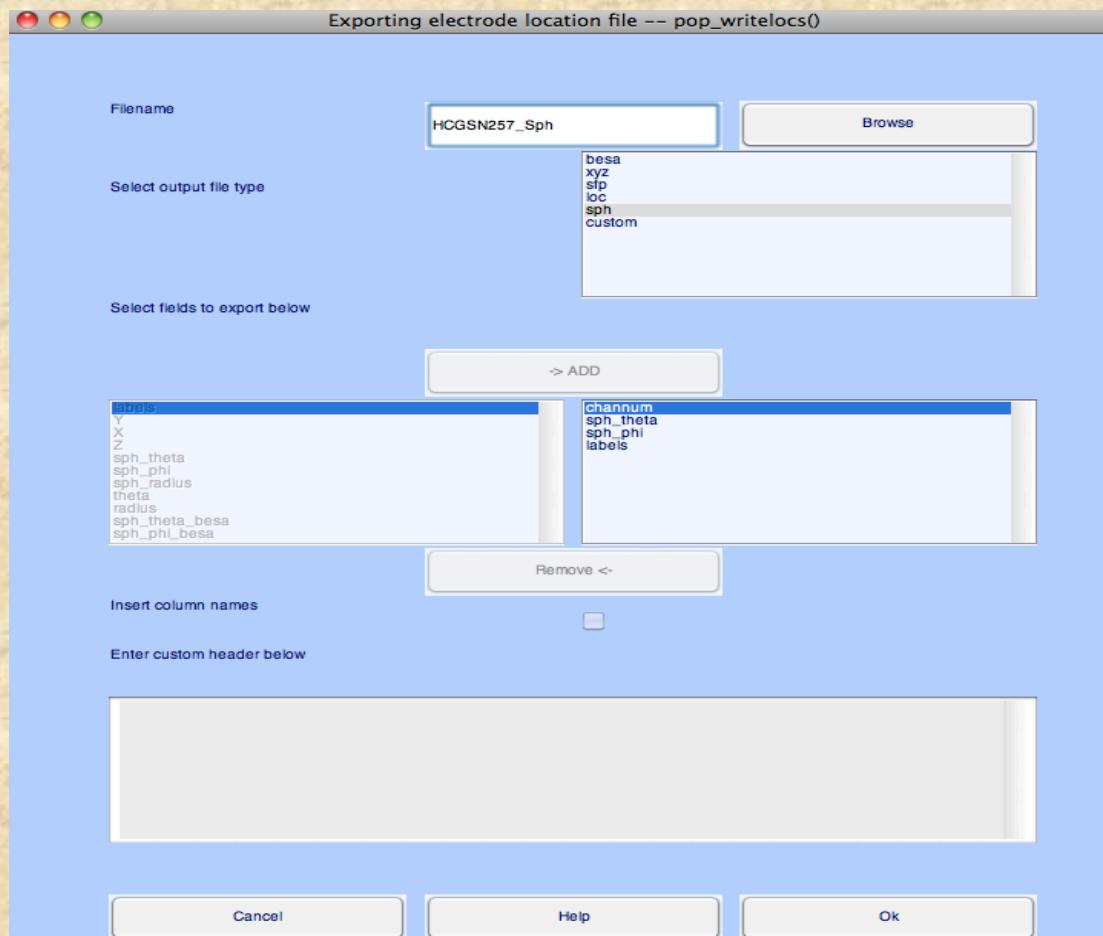
The pop window lists the first several rows of channel labels and coordinates.

Click “Import” button to import coordinates

Coordinates Conversion

On the Matlab terminal, type:

`>> pop_writelocs (Cartcoords) [enter]`



- Enter an output coordinate file name
- Choose sph in Select output file type
- Click Ok

Coordinates Conversion

- A spherical coordinates file, named “HCGSN257_Sph” is generated.
- This feature supports:
BESA
Matlab Cartesian
EGI Cartesian
EEGLab loc
sph
user customized formats

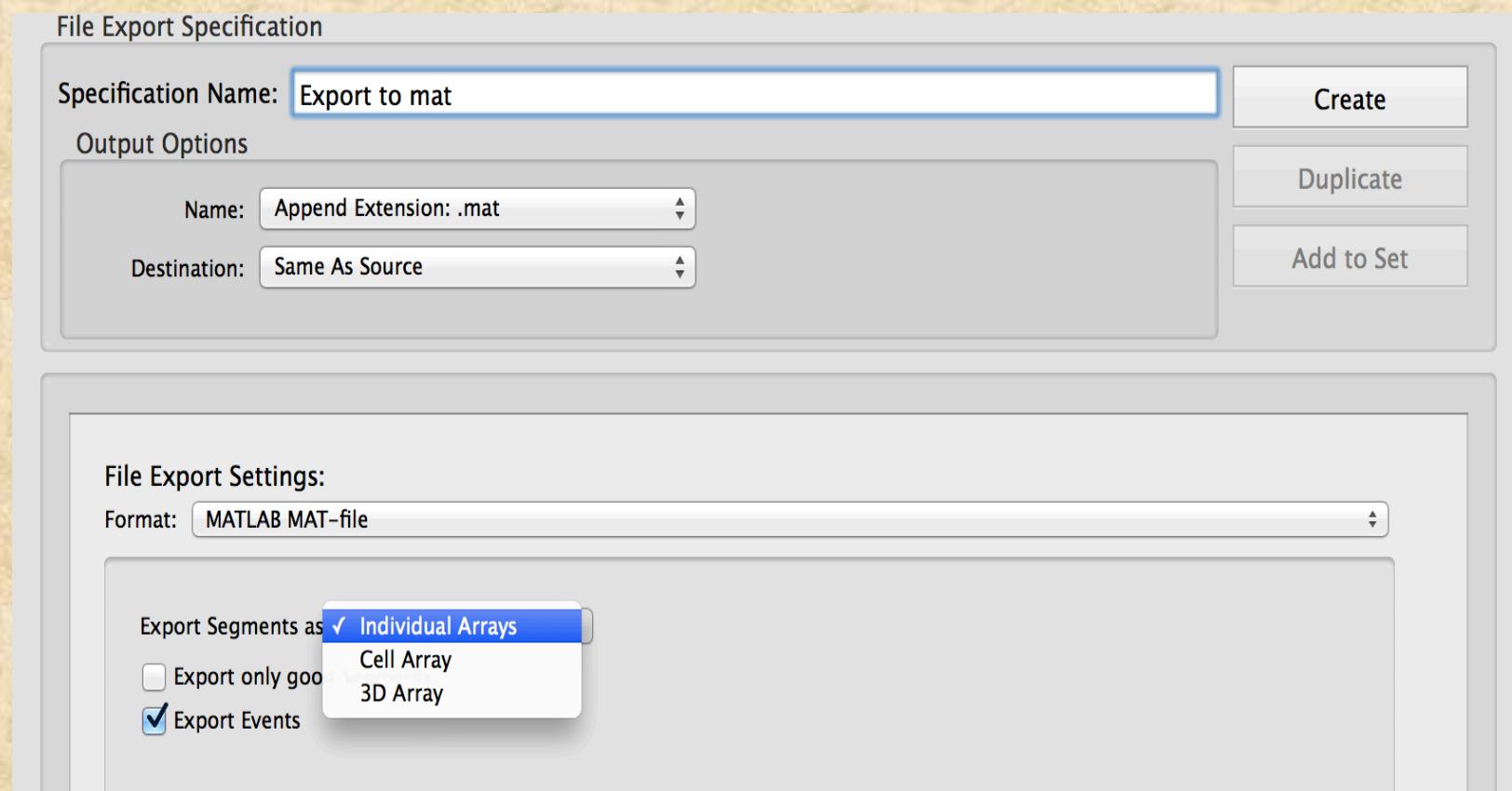
HCGSN257_Sph			
1	-52.293	-13.978	E1
2	-45.355	-0.88034	E2
3	-38.334	11.028	E3
4	-31.754	21.766	E4
5	-25.829	33.551	E5
6	-19.221	45.499	E6
7	-12.835	56.659	E7
8	0	67.661	E8
9	37.306	78.312	E9
10	-38.818	-9.0839	E10
11	-31.228	2.3741	E11
12	-23.235	14.349	E12
13	-16.194	25.157	E13
14	-8.6418	36.443	E14
15	0	46.91	E15
16	12.835	56.659	E16
17	38.233	66.566	E17
18	-23.373	-4.9697	E18
19	-15.98	4.6764	E19
20	-8.0404	15.655	E20
21	0	26.353	E21
22	8.6418	36.443	E22
23	19.221	45.499	E23
24	37.185	54.198	E24
25	-7.463	-3.2569	E25
26	0	5.373	E26
27	8.0404	15.655	E27
28	16.194	25.157	E28
29	25.829	33.551	E29
30	38.804	41.218	E30
31	0	-10.988	E31
32	7.463	-3.2569	E32
33	15.98	4.6764	E33
34	23.235	14.349	E34

Sharing Data with Matlab

- Net Station can export files to the native MATLAB format with the data in three structures:
 - ✓ **Individual arrays**
best for importing as continuous data
 - ✓ **Cell arrays**
works for continuous and segmented data
 - ✓ **3D arrays**
best for importing as segmented and averaged data

Sharing Data with Matlab

- Net Station Matlab file export Interface:



Sharing Data with Matlab

Individual arrays

Name	Value
{ } ECI_TCPIP_55513	<4x596 cell>
[] Impedances_0	<257x1 double>
{ } VTD_demofilseg	<2x200 cell>
[] samplingRate	250

Cell arrays

Name	Value	Min	Max
{ } ECI_TCPIP_55513	<4x596 cell>		
[] Impedances_0	<257x1 double>	4.0812	3000
[] samplingRate	250	250	250
[] stand	<257x250x160 double>	<Too many elements>	<Too many elements>
[] stand_Segment1	<257x250 double>	-103.5456	140.5833
[] stand_Segment10	<257x250 double>	-80.9467	80.5317
[] stand_Segment100	<257x250 double>	-59.6700	72.2063
[] stand_Segment101	<257x250 double>	-75.1175	85.8729
[] stand_Segment102	<257x250 double>	-55.5998	48.5205
[] stand_Segment103	<257x250 double>	-59.8129	58.9896
[] stand_Segment104	<257x250 double>	-57.2043	102.9163
[] stand_Segment105	<257x250 double>	-62.2467	138.5357
[] stand_Segment106	<257x250 double>	-71.0410	82.1732
[] stand_Segment107	<257x250 double>	-59.2241	108.3408
[] stand_Segment108	<257x250 double>	-210.1888	606.1335
[] stand_Segment109	<257x250 double>	-110.2020	84.2465
[] stand_Segment11	<257x250 double>	-66.0955	156.5006

3D arrays

Name	Value	Min	Max
{ } ECI_TCPIP_55513	<4x6 cell>		
[] samplingRate	250	250	250
[] stand	<257x250 double>	-8.7243	13.4067
[] targ	<257x250 double>	-22.3187	11.4174

Sharing Data with Matlab

Matlab currently does not support segmented (before averaged) data in 3D arrays format

Sharing Data with Matlab

Events is stored in a variable whose name is based on the ECI track name, ECI_TCPIP_55513

ECI_TCPIP_55513 <4x661 cell>															Name ▾
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	ECI_TCPIP_55513
1 'SESS'	'CELL'	'CELL'	'CELL'	'CELL'	'bgin'	'stm+'	'TRSP'	'bgin'	'stm+'	'TRSP'	'bgin'	'stm+'	'TRSP'	'bgin'	Impedances_0
2 1360	1394	1413	1432	1451	11663	12746	13278	13339	14379	14903	14941	16296	16820	16858	Marks
3 1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	VTD_demofil1
4 340	348	353	358	362	2915	3186	3319	3334	3594	3725	3735	4074	4205	4214	samplingRate
5															
6															
7															
8															
9															
10															
11															

Impedances

Impedances_0 <257x1 double>			Name ▾	Value
1	34.3400		ECI_TCPIP_55513	<4x661 cell>
2	16.5226		Impedances_0	<257x1 double>
3	26.3217		Marks	<4x1 cell>
4	12.7098		VTD_demofil1	<257x158906 double>
5	26.0491		samplingRate	250
6	28.7693			
7	49.6273			
8	53.9816			
9	26.1770			
10	14.7191			
11	56.4189			
12	23.0672			
13	36.5449			
14	35.7071			
15	31.2189			
16	28.1593			
17	41.8068			
18	17.3479			
19	17.9478			
20	19.5991			

Sharing Data with Matlab

EEG data is stored in a variable whose name is the name of the input .mat file

VTD_demofil1 <257x158906 double>									
	1	2	3	4	5	6	7	8	9
1	34.9380	34.9380	34.9380	34.9380	34.9380	34.9380	34.9380	34.9380	34.
2	3.4964	3.4964	3.4964	3.4964	3.4964	3.4964	3.4964	3.4964	3.
3	-10.8977	-10.8977	-10.8977	-10.8977	-10.8977	-10.8977	-10.8977	-10.8977	-10.
4	-16.2659	-16.2659	-16.2659	-16.2659	-16.2659	-16.2659	-16.2659	-16.2659	-16.
5	-4.2596	-4.2596	-4.2596	-4.2596	-4.2596	-4.2596	-4.2596	-4.2596	-4.
6	-3.8060	-3.8060	-3.8060	-3.8060	-3.8060	-3.8060	-3.8060	-3.8060	-3.
7	-2.5632	-2.5632	-2.5632	-2.5632	-2.5632	-2.5632	-2.5632	-2.5632	-2.
8	-1.6857	-1.6857	-1.6857	-1.6857	-1.6857	-1.6857	-1.6857	-1.6857	-1.
9	-2.2325	-2.2325	-2.2325	-2.2325	-2.2325	-2.2325	-2.2325	-2.2325	-2.
10	-26.5655	-26.5655	-26.5655	-26.5655	-26.5655	-26.5655	-26.5655	-26.5655	-26.
11	-11.2174	-11.2174	-11.2174	-11.2174	-11.2174	-11.2174	-11.2174	-11.2174	-11.
12	-10.6669	-10.6669	-10.6669	-10.6669	-10.6669	-10.6669	-10.6669	-10.6669	-10.
13	-7.8747	-7.8747	-7.8747	-7.8747	-7.8747	-7.8747	-7.8747	-7.8747	-7.
14	-8.8556	-8.8556	-8.8556	-8.8556	-8.8556	-8.8556	-8.8556	-8.8556	-8.
15	-4.4894	-4.4894	-4.4894	-4.4894	-4.4894	-4.4894	-4.4894	-4.4894	-4.
16	-9.3499	-9.3499	-9.3499	-9.3499	-9.3499	-9.3499	-9.3499	-9.3499	-9.
17	-11.6115	-11.6115	-11.6115	-11.6115	-11.6115	-11.6115	-11.6115	-11.6115	-11.
18	-31.3469	-31.3469	-31.3469	-31.3469	-31.3469	-31.3469	-31.3469	-31.3469	-31.
19	-2.4649	-2.4649	-2.4649	-2.4649	-2.4649	-2.4649	-2.4649	-2.4649	-2.

Name	Value
ECI_TCPIP_55513	<4x661 cell>
Impedances_0	<257x1 double>
Marks	<4x1 cell>
VTD_demofil1	<257x158906 double>
samplingRate	250

Sharing Data with Matlab

Use the “load” command to bring the data into Matlab, or simply drag the .mat file into the Matlab terminal:

```
>> load('/Users/weihe/Desktop/NetStationFileIO/Demo/  
VTD_demo.fil.mat')
```

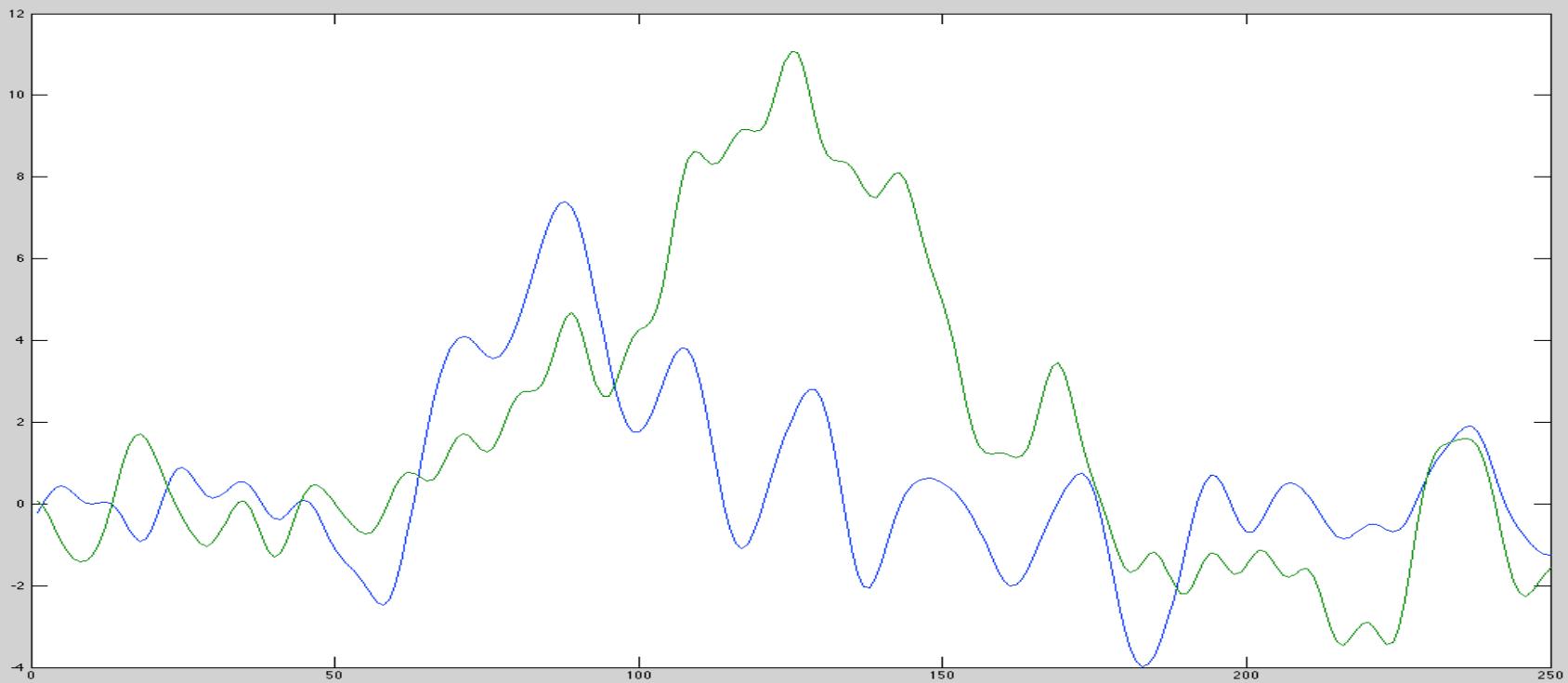
The sample in the following slide uses an averaged VTD data that has “stand” and “targ” conditions exported in 3D array .mat.

The data is 250 samples long (250s/s sampling rate with 1000s segment length).

Sharing Data with Matlab

The following two lines display channel 101 for the two conditions, overlaid:

```
>>t= (1:250)  
>>figure; plot(t, stand(101, :), t, targ(101, :));
```



Getting Data Back into Net Station

To bring data back into Net Station:

- Net Station 5.x: MFF API
- Net Station 4.5 or older:
 - the data needs to be continuous and free of epoch breaks (i.e. stop and start recording).
 - a Matlab writer called “WriteRawNE.m ” (available in EGI website customer area) will be used to convert a dataset in Matlab to a .raw file

Getting Data Back into Net Station 4.x

- If there is a Matlab variable in memory called “EEG”, the following line creates a .raw file:

```
>> WriteRawNE('EEGoutput.raw', 4, EEG, 250, true);
```

* Note: Use File > Set Path > add folder in Matlab to find and save the path to WriteRawNE script, so Matlab can finds the script automatically

- The 1st parameter defines the name of the new file
- The 2nd parameter, 4, indicates the new file is to be in single precision floating point
- The 3rd is the EEG data that needs to be converted to raw
- The 4th is the sampling rate of the EEG data
- The last parameter indicates whether the function should generate messages while generating the output

Getting Data Back into Net Station 4.x

- If a dataset is created in EEGLab, you can load the dataset and convert it to a .raw file

Using the demoVTD dataset as an example, the following two lines of code converts the dataset to a .raw file

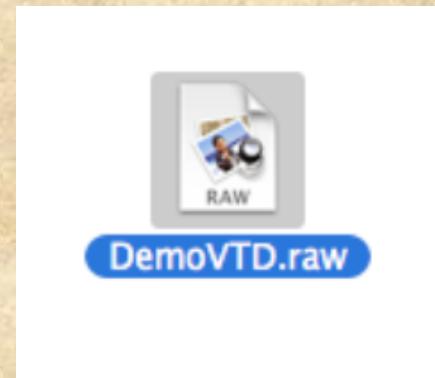
```
>> EEG = pop_loadset ('filename', 'DemoVTD_fil.set', 'filepath', '/  
Users/weihe/Documents/MATLAB');
```

```
>> WriteRawNE('DemoVTD.raw', 4, EEG.data(1:256,:), 250, true);
```

Getting Data Back into Net Station 4.x

- The Mac operating system uses two hidden resources: *type* and *creator*, to indicate to the operating system the type of file, and the application that created the file.
- Net Station can not open the files unless these two resources are set correctly

When raw file that has resources missing ===>



Use “Xray” or “Better Finder Attributes” software to restore file resources

XRay for Mac



Getting Data Back into Net Station 4.x

- Example of using “Better Finder Attributes” application to restore file resources for raw file:

A Better Finder Attributes 4 [Registered]

Action: Set the legacy file creator and type codes

Description	Creator Code	Type Code
Same as ATD256_1.ses	NETs	dSE!
Same as ATD256_1.raw	NETs	UGLY
Same as NS - Analysis Area 1	EGlh	HASP
Same as Session 20090828 09.blc	NETs	dAV!
Same as functest.mrr	NETs	rEE!
Same as NS - Chuan 5:20:08	FGlh	HASP

Mac OS 9 used so-called "creator" and "type" codes of 4 characters to identify the application that created a document (the creator) and the type of the document (the type). For compatibility reasons Mac OS X still allows these codes to be used to associate document to their applications, but this is no longer the preferred way of doing this. Many "Carbon" applications that have been migrated from Mac OS 9 still use this scheme including most Microsoft and Adobe products. "Modern" Cocoa applications use file extensions (e.g. ".gif", ".doc", etc.).

Show summary after processing is complete Force Finder update after operation is complete Automatically quit after processing the files

Create Droplet... Cancel OK

Process: Files Folders Subfolders and their contents

You may drag & drop files directly from Clear Remove Add files...

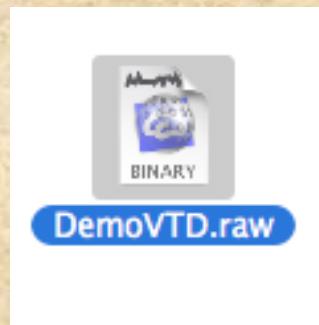
Name Creator Type
DemoVTD.raw <none> <none>

Uploading the “bad” raw data whose resources need to be restored

Importing a “good” raw data to find its Creator and Type code

Getting Data Back into Net Station 4.x

- After the resources are restored, the OS recognize the file type and shows the correct file icon:

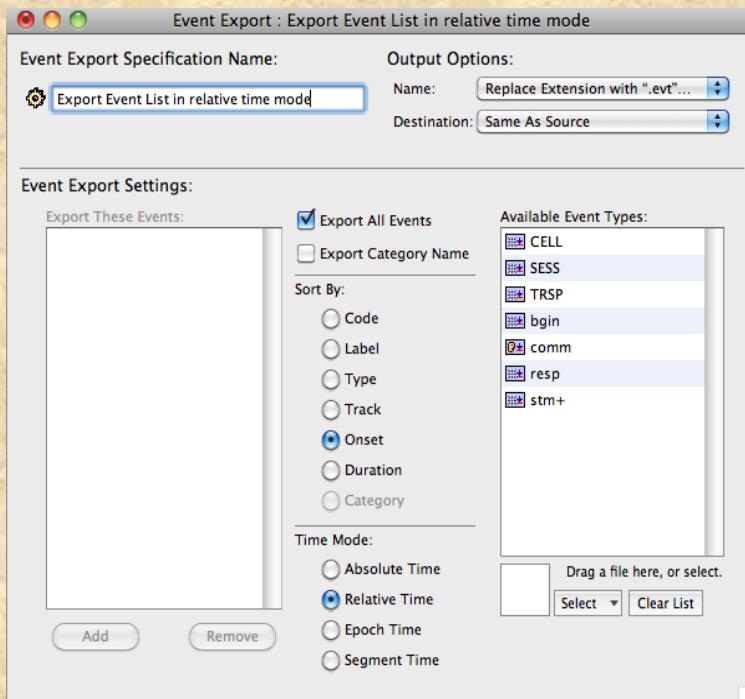


Getting Data Back into Net Station 4.x

The .raw file does not include events information.

To restore the events or bring the edited event list back into the Net Station file:

1. Export the events from the original file using the relative time mode. A .evt text file will be generated.

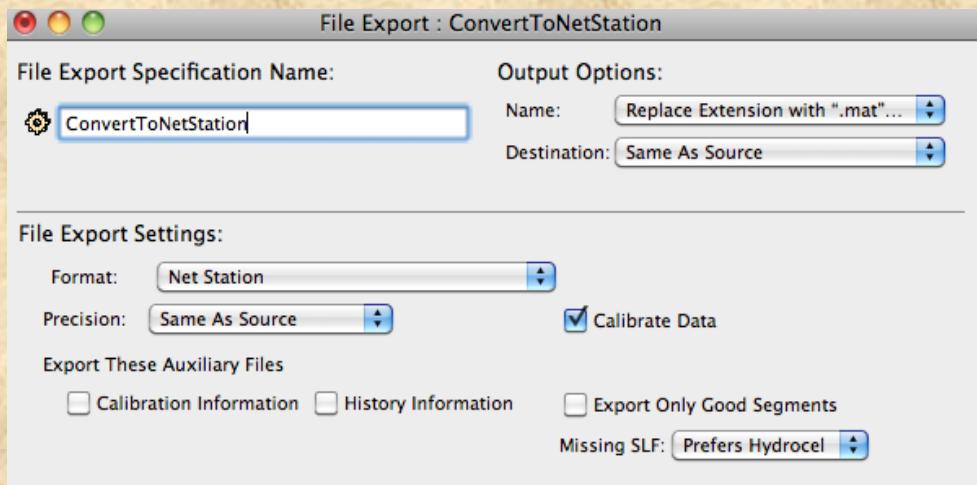


	A	B	C	D	E	F	G
1	VTD_demo.fil.1						
2	Time Mode: Relative Time						
3	Code	Label	Type	Track	Onset	Duration	
4	SESS	VTDVideo	Stimulus Event	ECI TCP/IP 55513	00:00:01.360	00:00:00.00	age_
5	CELL	trgt_exp	Stimulus Event	ECI TCP/IP 55513	00:00:01.394	00:00:00.00	
6	CELL	nontrgt_exp	Stimulus Event	ECI TCP/IP 55513	00:00:01.413	00:00:00.00	
7	CELL	trgt_prac	Stimulus Event	ECI TCP/IP 55513	00:00:01.432	00:00:00.00	
8	CELL	nontrgt_prac	Stimulus Event	ECI TCP/IP 55513	00:00:01.451	00:00:00.00	
9	bgin		Stimulus Event	ECI TCP/IP 55513	00:00:11.663	00:00:00.00	
10	stm+		Stimulus Event	ECI TCP/IP 55513	00:00:12.746	00:00:00.00	
11	TRSP		Stimulus Event	ECI TCP/IP 55513	00:00:13.278	00:00:00.00	
12	bgin		Stimulus Event	ECI TCP/IP 55513	00:00:13.339	00:00:00.00	
13	stm+		Stimulus Event	ECI TCP/IP 55513	00:00:14.379	00:00:00.00	
14	TRSP		Stimulus Event	ECI TCP/IP 55513	00:00:14.903	00:00:00.00	
15	bgin		Stimulus Event	ECI TCP/IP 55513	00:00:14.941	00:00:00.00	
16	stm+		Stimulus Event	ECI TCP/IP 55513	00:00:16.296	00:00:00.00	
17	TRSP		Stimulus Event	ECI TCP/IP 55513	00:00:16.820	00:00:00.00	
18	bgin		Stimulus Event	ECI TCP/IP 55513	00:00:16.858	00:00:00.00	
19	stm+		Stimulus Event	ECI TCP/IP 55513	00:00:19.246	00:00:00.00	
20	resp		Stimulus Event	ECI TCP/IP 55513	00:00:19.629	00:00:00.00	
21	TRSP		Stimulus Event	ECI TCP/IP 55513	00:00:19.792	00:00:00.00	
22	bgin		Stimulus Event	ECI TCP/IP 55513	00:00:19.833	00:00:00.00	
23	stm+		Stimulus Event	ECI TCP/IP 55513	00:00:20.979	00:00:00.00	
24	TRSP		Stimulus Event	ECI TCP/IP 55513	00:00:21.507	00:00:00.00	
25	bgin		Stimulus Event	ECI TCP/IP 55513	00:00:21.550	00:00:00.00	
26	stm+		Stimulus Event	ECI TCP/IP 55513	00:00:23.846	00:00:00.00	
27	resp		Stimulus Event	ECI TCP/IP 55513	00:00:23.981	00:00:00.00	
28	TRSP		Stimulus Event	ECI TCP/IP 55513	00:00:24.854	00:00:00.00	
29	bgin		Stimulus Event	ECI TCP/IP 55513	00:00:24.916	00:00:00.00	
30	SESS	VTDVideo	Stimulus Event	ECI TCP/IP 55513	00:00:59.473	00:00:00.00	age_
31	CELL	trgt_exp	Stimulus Event	ECI TCP/IP 55513	00:00:59.520	00:00:00.00	
32	CELL	nontrgt_exp	Stimulus Event	ECI TCP/IP 55513	00:00:59.546	00:00:00.00	
33	CELL	trgt_prac	Stimulus Event	ECI TCP/IP 55513	00:00:59.574	00:00:00.00	
34	CELL	nontrgt_prac	Stimulus Event	ECI TCP/IP 55513	00:00:59.600	00:00:00.00	
35	bgin		Stimulus Event	ECI TCP/IP 55513	00:01:01.616	00:00:00.00	
36	stm+		Stimulus Event	ECI TCP/IP 55513	00:01:02.911	00:00:00.00	
37	TRSP		Stimulus Event	ECI TCP/IP 55513	00:01:03.443	00:00:00.00	
38	bgin		Stimulus Event	ECI TCP/IP 55513	00:01:03.499	00:00:00.00	
39	stm+		Stimulus Event	ECI TCP/IP 55513	00:01:05.844	00:00:00.00	
40	TRSP		Stimulus Event	ECI TCP/IP 55513	00:01:06.376	00:00:00.00	
41	bgin		Stimulus Event	ECI TCP/IP 55513	00:01:06.425	00:00:00.00	

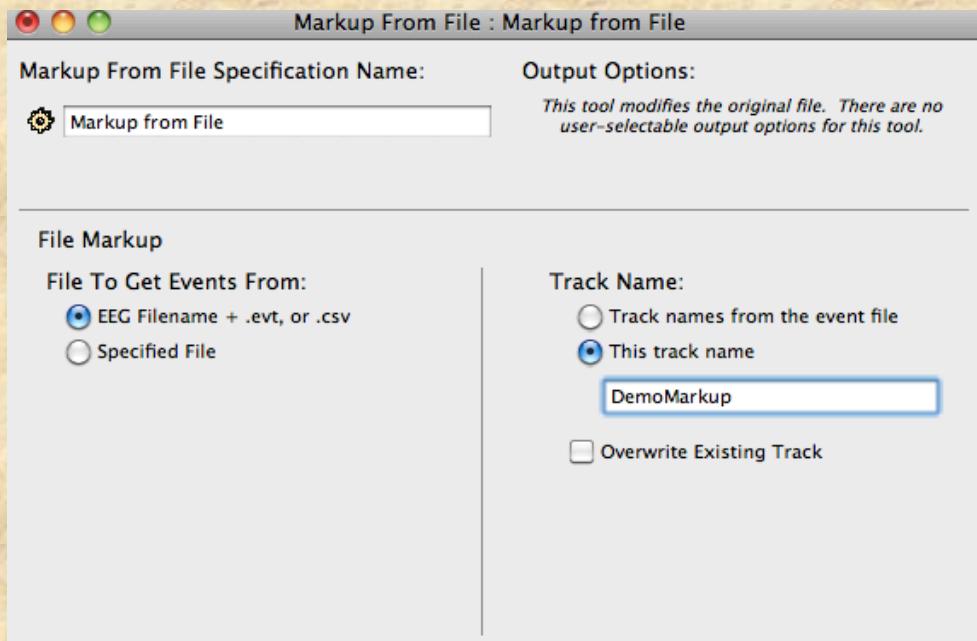
2. You may edit/add new events into the event list (optional)

Getting Data Back into Net Station 4.x

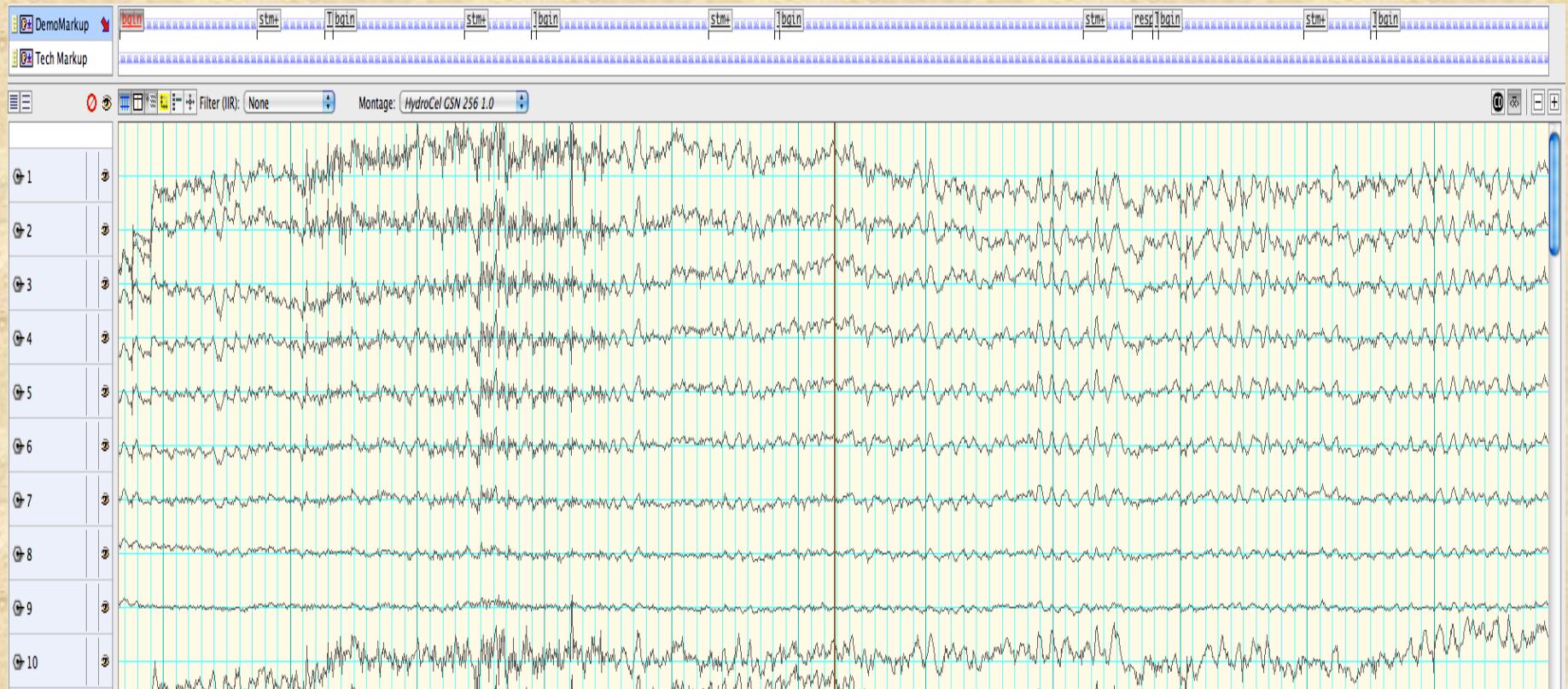
3. Convert the .raw file to Net Station format using File export tool



4. Use the Markup From File waveform tool to bring in the events saved in step 1 or 2



Getting Data Back into Net Station 4.x



* Notice that newly markup events are added to the new track, DemoMarkup

Questions ?

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Thank You!