

NEUR/PSYC 330 – Post EEG Lab Survey

1. Which lab section are you in? Monday / Wednesday

2. What equipment did your group use today? Individual Electrodes / Caps

3. What was your role in today's lab? Check all that apply.

Participant     Set up equipment     Run computer     Just observe

4. How difficult was it to set up the electrodes for the EEG procedure?

-5    -4    -3    -2    -1    0    1    2    3    4    5

Very Easy                                  Neutral                                  Very Difficult

5. How difficult was it to clean up the electrodes after the EEG procedure?

-5    -4    -3    -2    -1    0    1    2    3    4    5

Very Easy                                  Neutral                                  Very Difficult

6. Do you have any comments about the set-up and cleanup processes?

7. How comfortable do you think the set-up you used today is for participants?

-5    -4    -3    -2    -1    0    1    2    3    4    5

Very Uncomfortable                                  Neutral                                  Very Comfortable

8. How professional do you feel the set-up you used today is?

-5    -4    -3    -2    -1    0    1    2    3    4    5

Very Unprofessional                                  No change                                  Very Professional

9. Do you have any additional comments about the EEG equipment that you would like to share?

NEUR/PSYC 330 – Final Post EEG Lab Survey

- |                                                                                          |                       |      |
|------------------------------------------------------------------------------------------|-----------------------|------|
| 1. What equipment did your group use today?                                              | Individual Electrodes | Caps |
| 2. What equipment do you personally prefer?                                              | Individual Electrodes | Caps |
| 3. What equipment do you think is more comfortable for participants specifically?        | Individual Electrodes | Caps |
| 4. What equipment do you think is easier for researcher specifically?                    | Individual Electrodes | Caps |
| 5. What equipment do you think can be set up quicker?                                    | Individual Electrodes | Caps |
| 6. What equipment do you think can be cleaned up quicker?                                | Individual Electrodes | Caps |
| 7. What equipment do you think is more professional?                                     | Individual Electrodes | Caps |
| 8. Do you have any additional comments about EEG equipment that you would like to share? |                       |      |

Researcher Survey

1. What equipment do you prefer? Individual Electrodes / Caps

2. How comfortable/uncomfortable do you think using each set-up is for participants?

Electrodes	-5	-4	-3	-2	-1	0	1	2	3	4	5
Caps	-5	-4	-3	-2	-1	0	1	2	3	4	5
	Very Uncomfortable				Neutral			Very Comfortable			

3. How difficult do you think setting up is?

Electrodes	-5	-4	-3	-2	-1	0	1	2	3	4	5
Caps	-5	-4	-3	-2	-1	0	1	2	3	4	5
	Very Easy				Neutral			Very Difficult			

4. How difficult do you think cleaning up is?

Electrodes	-5	-4	-3	-2	-1	0	1	2	3	4	5
Caps	-5	-4	-3	-2	-1	0	1	2	3	4	5
	Very Easy				Neutral			Very Difficult			

5. How professional do you feel each set-up is?

Electrodes	-5	-4	-3	-2	-1	0	1	2	3	4	5
Caps	-5	-4	-3	-2	-1	0	1	2	3	4	5
	Very Unprofessional				Neutral			Very Professional			

6. Do you have any additional comments about EEG equipment that you would like to share?

Participant Survey

1. How comfortable or uncomfortable did you feel during the EEG set-up process?

Electrodes	-5	-4	-3	-2	-1	0	1	2	3	4	5	
Caps	-5	-4	-3	-2	-1	0	1	2	3	4	5	
	Very Uncomfortable				Neutral				Very Comfortable			

2. How comfortable or uncomfortable did you feel once the equipment had been set up?

Electrodes	-5	-4	-3	-2	-1	0	1	2	3	4	5	
Caps	-5	-4	-3	-2	-1	0	1	2	3	4	5	
	Very Uncomfortable				Neutral				Very Comfortable			

3. How comfortable or uncomfortable did you feel during the EEG cleanup process?

Electrodes	-5	-4	-3	-2	-1	0	1	2	3	4	5	
Caps	-5	-4	-3	-2	-1	0	1	2	3	4	5	
	Very Uncomfortable				Neutral				Very Comfortable			

4. Do you feel that the EEG equipment made it more or less difficult to perform the tasks?

Electrodes	-5	-4	-3	-2	-1	0	1	2	3	4	5	
Caps	-5	-4	-3	-2	-1	0	1	2	3	4	5	
	Much Less Difficult				Neutral				Much More Difficult			

5. How professional do you think this EEG equipment set-up felt?

Electrodes	-5	-4	-3	-2	-1	0	1	2	3	4	5	
Caps	-5	-4	-3	-2	-1	0	1	2	3	4	5	
	Very Unprofessional				Neutral				Very Professional			

6. Do you have any additional comments about the EEG equipment that you would like to share?

NEUR/PSYC 330 – Prior to Initial EEG Lab

1. How well do you understand the concept of brain activity as electrical voltage at the scalp?

0      1      2      3      4      5      6      7      8      9      10

No understanding

Complete Understanding

2. How well do you understand the concept of non-brain activity as electrical voltage at the scalp?

0      1      2      3      4      5      6      7      8      9      10

No understanding

Complete Understanding

3. How comfortable are you with using the PowerLab/LabChart combination for EEG recordings?

-5      -4      -3      -2      -1      0      1      2      3      4      5

Very Uncomfortable

Neutral

Very Comfortable

NEUR/PSYC 330 – After the Initial EEG Lab

1. How well do you understand the concept of brain activity as electrical voltage at the scalp?

0	1	2	3	4	5	6	7	8	9	10
No understanding							Complete Understanding			

2. Please indicate how you feel this lab influenced your understanding:

-5	-4	-3	-2	-1	0	1	2	3	4	5
Understand it much less				No change			Understand it much more			

3. How well do you understand the concept of non-brain activity as electrical voltage at the scalp?

0	1	2	3	4	5	6	7	8	9	10
No understanding							Complete Understanding			

4. Please indicate how you feel this lab influenced your understanding:

-5	-4	-3	-2	-1	0	1	2	3	4	5
Understand it much less				No change			Understand it much more			

5. How comfortable are you with using the PowerLab/LabChart combination for EEG recordings?

-5	-4	-3	-2	-1	0	1	2	3	4	5
Very Uncomfortable				Neutral			Very Comfortable			

6. Please indicate how you feel this lab influenced your comfort level:

-5	-4	-3	-2	-1	0	1	2	3	4	5
Much less comfortable				No change			Much more comfortable			

Any suggestions/comments/concerns about the lab that you would like to share?

NEUR/PSYC 330 – Prior to Language EEG Lab

1. How well do you understand the concept of brain activity as electrical voltage at the scalp?

0      1      2      3      4      5      6      7      8      9      10

No understanding

Complete Understanding

2. How well do you understand the concept of brain waves in response to language processing?

0      1      2      3      4      5      6      7      8      9      10

No understanding

Complete Understanding

3. How comfortable are you with using the PowerLab/LabChart combination for EEG recordings?

-5      -4      -3      -2      -1      0      1      2      3      4      5

Very Uncomfortable

Neutral

Very Comfortable

NEUR/PSYC 330 – After the Language EEG Lab

1. How well do you understand the concept of brain activity as electrical voltage at the scalp?

0    1    2    3    4    5    6    7    8    9    10

No understanding

Complete Understanding

2. Please indicate how you feel this lab influenced your understanding:

-5    -4    -3    -2    -1    0    1    2    3    4    5

Understand it much less

No change

Understand it much more

3. How well do you understand the concept of brain waves in response to language processing?

0    1    2    3    4    5    6    7    8    9    10

No understanding

Complete Understanding

4. Please indicate how you feel this lab influenced your understanding:

-5    -4    -3    -2    -1    0    1    2    3    4    5

Understand it much less

No change

Understand it much more

5. How comfortable are you with using the PowerLab/LabChart combination for EEG recordings?

-5    -4    -3    -2    -1    0    1    2    3    4    5

Very Uncomfortable

Neutral

Very Comfortable

6. Please indicate how you feel this lab influenced your comfort level:

-5    -4    -3    -2    -1    0    1    2    3    4    5

Much less comfortable

No change

Much more comfortable

Any suggestions/comments/concerns about the lab that you would like to share?



NEUR/PSYC 330 – Prior to Emotion ERP Lab

1. How well do you understand the concept of brain activity as electrical voltage at the scalp?

0      1      2      3      4      5      6      7      8      9      10

No understanding

Complete Understanding

2. How well do you understand the concept of brain responses specific to distinct types of stimuli?

0      1      2      3      4      5      6      7      8      9      10

No understanding

Complete Understanding

3. How comfortable are you with using the PowerLab/LabChart/StimTracker combination for brain recordings?

-5      -4      -3      -2      -1      0      1      2      3      4      5

Very Uncomfortable

Neutral

Very Comfortable

NEUR/PSYC 330 – After the Emotion ERP Lab

1. How well do you understand the concept of brain activity as electrical voltage at the scalp?

0      1      2      3      4      5      6      7      8      9      10

No understanding

Complete Understanding

2. Please indicate how you feel this lab influenced your understanding:

-5      -4      -3      -2      -1      0      1      2      3      4      5

Understand it much less

No change

Understand it much more

3. How well do you understand the concept of brain responses specific to distinct types of stimuli?

0      1      2      3      4      5      6      7      8      9      10

No understanding

Complete Understanding

4. Please indicate how you feel this lab influenced your understanding:

-5      -4      -3      -2      -1      0      1      2      3      4      5

Understand it much less

No change

Understand it much more

5. How comfortable are you with using the PowerLab/LabChart/StimTracker combination for ERP recordings?

-5      -4      -3      -2      -1      0      1      2      3      4      5

Very Uncomfortable

Neutral

Very Comfortable

6. Please indicate how you feel this lab influenced your comfort level:

-5      -4      -3      -2      -1      0      1      2      3      4      5

Much less comfortable

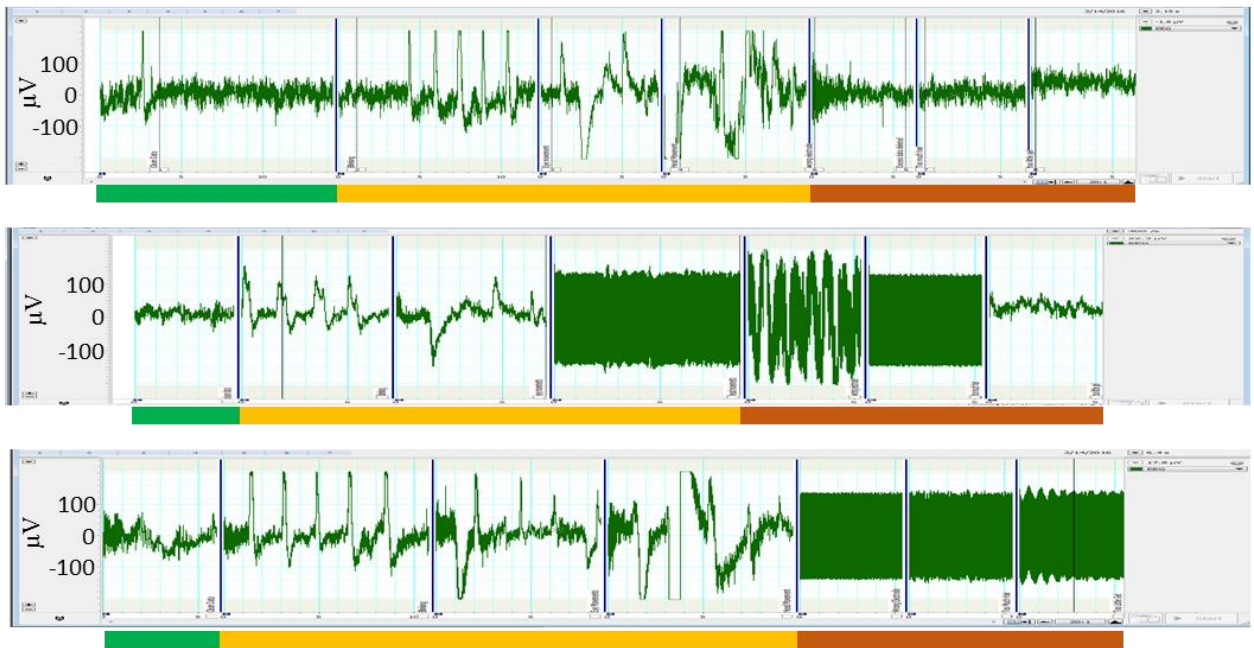
No change

Much more comfortable

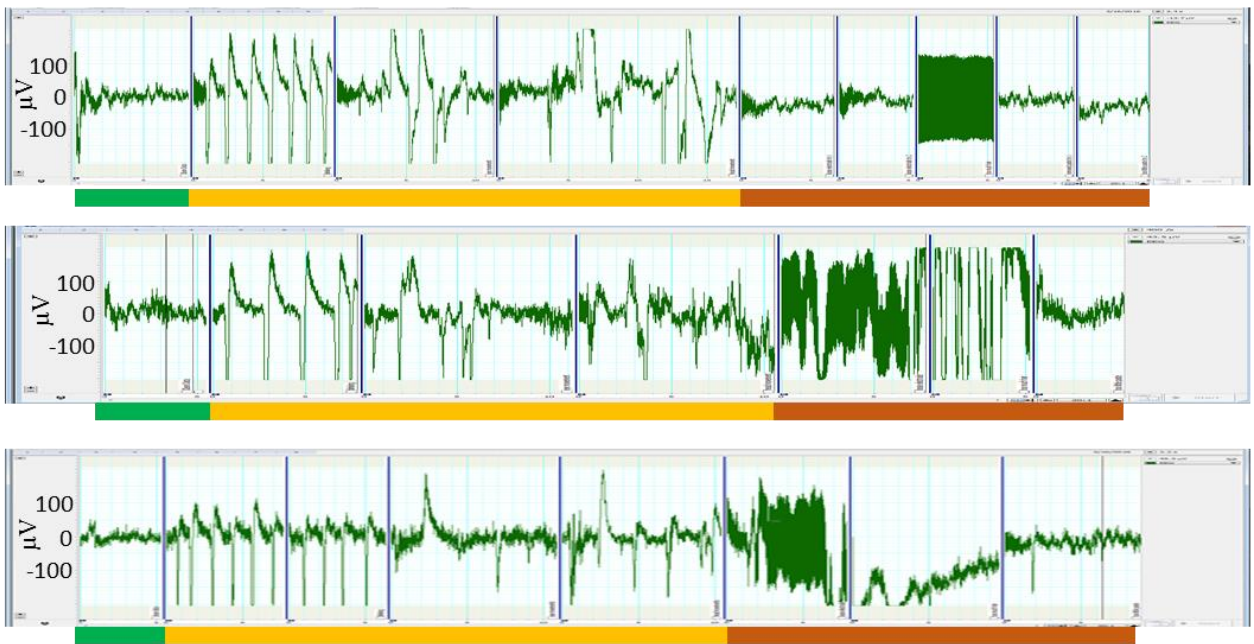
Any suggestions/comments/concerns about the lab that you would like to share?

## Lab 6 – EEG artifacts

### Caps



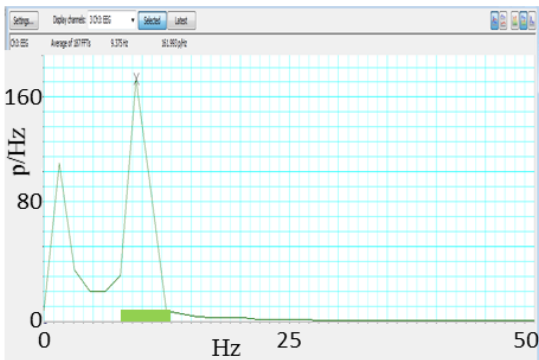
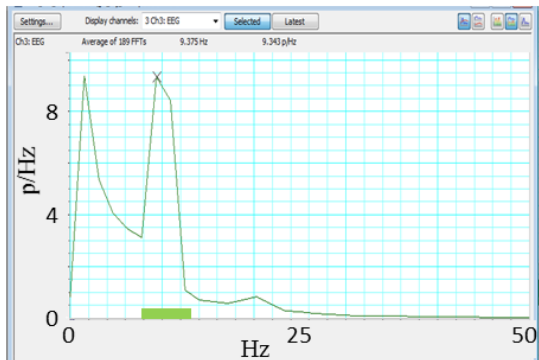
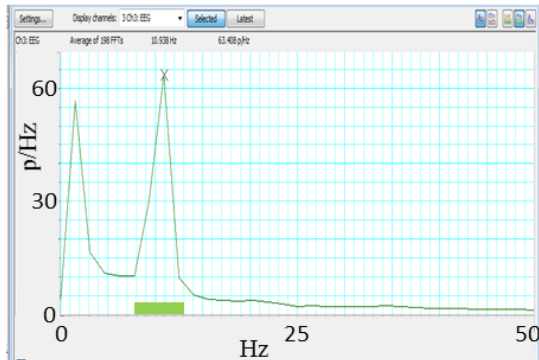
### Electrodes



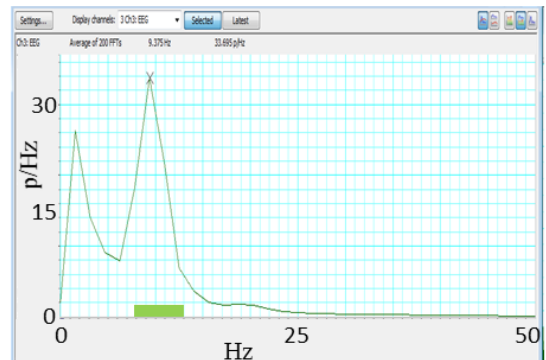
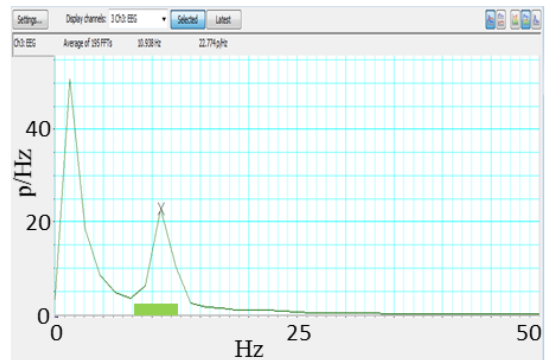
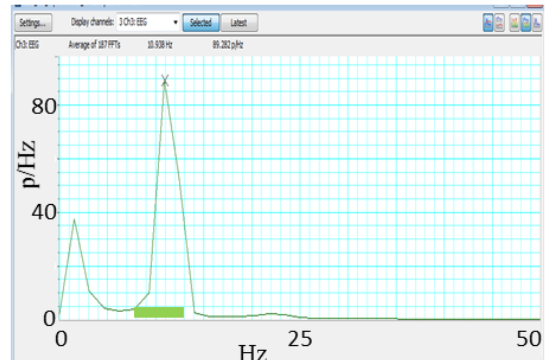
**Supplementary Figure 1:** Screenshots of the recorded data for the initial EEG training lab across six lab student groups, separated by recording method. The horizontal axis is time in seconds, which varied in length for the different groups. The vertical blue bars indicate changes between different sections of the recording. The horizontal color bars depict the different components of the assignments. **Green** is for 'clean data' and the signal is meant to be within  $\pm 60 \mu\text{V}$ . **Orange** is for 'participant artifacts' and is meant to include transient spikes above or below  $100 \mu\text{V}$ . **Red** is for 'instrument problems' and is meant to include sustained thick recordings or large scale oscillations above and below  $100 \mu\text{V}$ .

# Lab 9 – EEG Alpha Waves

## Caps

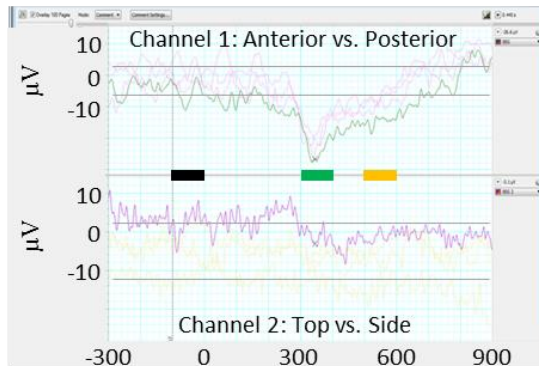


## Electrodes

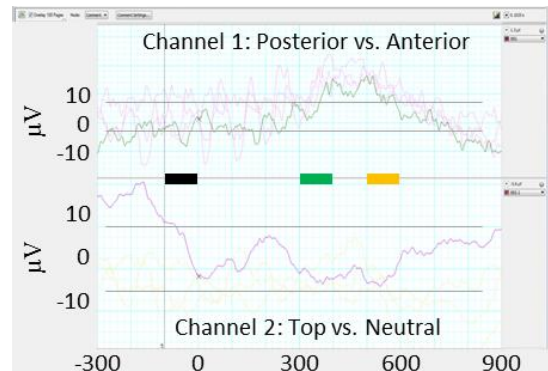


**Supplementary Figure 2:** Screenshots of the FFT spectrum analysis of a single experimental condition for the FFT analysis lab across six lab student groups, separated by recording method. The green line shows the power density as a function of frequency. The green rectangles near the x-axis indicate the possible range of alpha waves (8-13 Hz). The cursor (x) indicates the observed peak frequency in the alpha range on a group-by-group basis. The left-most peak is an analysis artefact based on a combination of  $1/f$  biological noise and digital high-pass filtering.

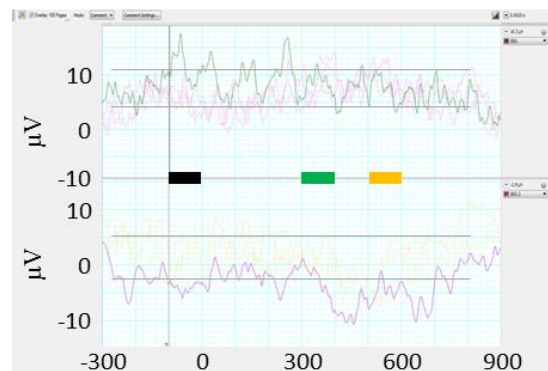
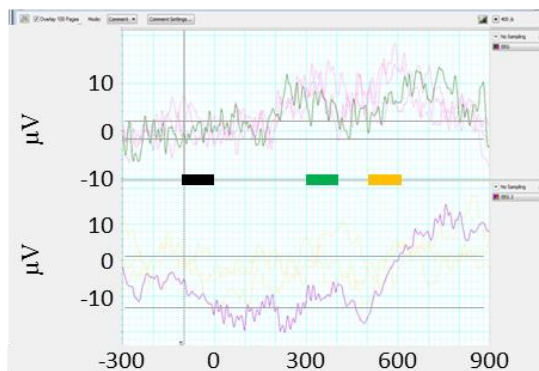
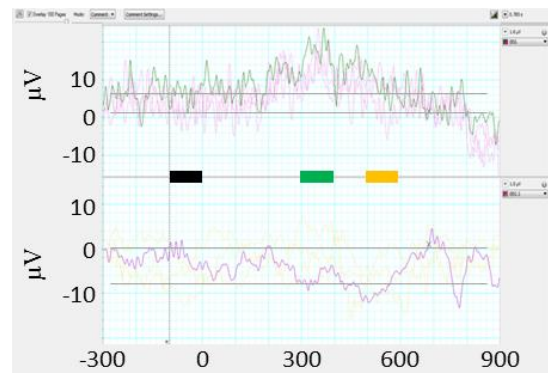
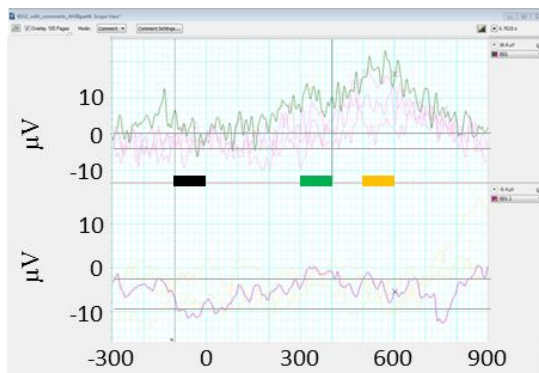
## Lab 10 – ERPs P300 Caps



## Electrodes (cont.)



## Electrodes



Time in Relation to Stimulus Onset (ms)

Time in Relation to Stimulus Onset (ms)

**Supplementary Figure 3:** Screenshots of the ERP Scope analysis of a single experimental condition for the ERP analysis lab across six lab student groups, separated by recording method. The jagged lines show the ERP averaged across trials without artifacts as a function of time for channel 1 (top row) and channel 2 (bottom row). The different colored lines are for the four different blocks of trials with a single block highlighted. The straight horizontal lines show the bounds of the observed baseline level of activation. Valid ERPs would be consistently above or below these bounds for all blocks. The rectangles in the middle demonstrate the different time regions for analysis purposes. The **black** section is **baseline** (100 msec before stimulus onset until stimulus onset), the **green** section is the **P300 region** (from 300 to 400 msec post stimulus), and the **orange** section is a **comparison region** (from 500 to 600 msec post stimulus).