

‘Central to successful control is the ability to suppress actions that are no longer relevant or required.’



# Subject 116

**NF Task:** Users look at the car and imagine driving it forward to train alpha inhibition, aiming to enhance information suppression to reduce falling risk in the physical world.

We will look at alpha power progression

# Epoching information

- Event '7' (alpha power drop, car moves backward) is set as time = 0 ms, with epochs from [-300 1000] ms.
- Event '6' (ERSP alpha power increase, car moves forward) is plotted as a black line to show its latency relative to '7' (fig 1).
- Corrects the baseline by subtracting the -290 to 0 ms mean

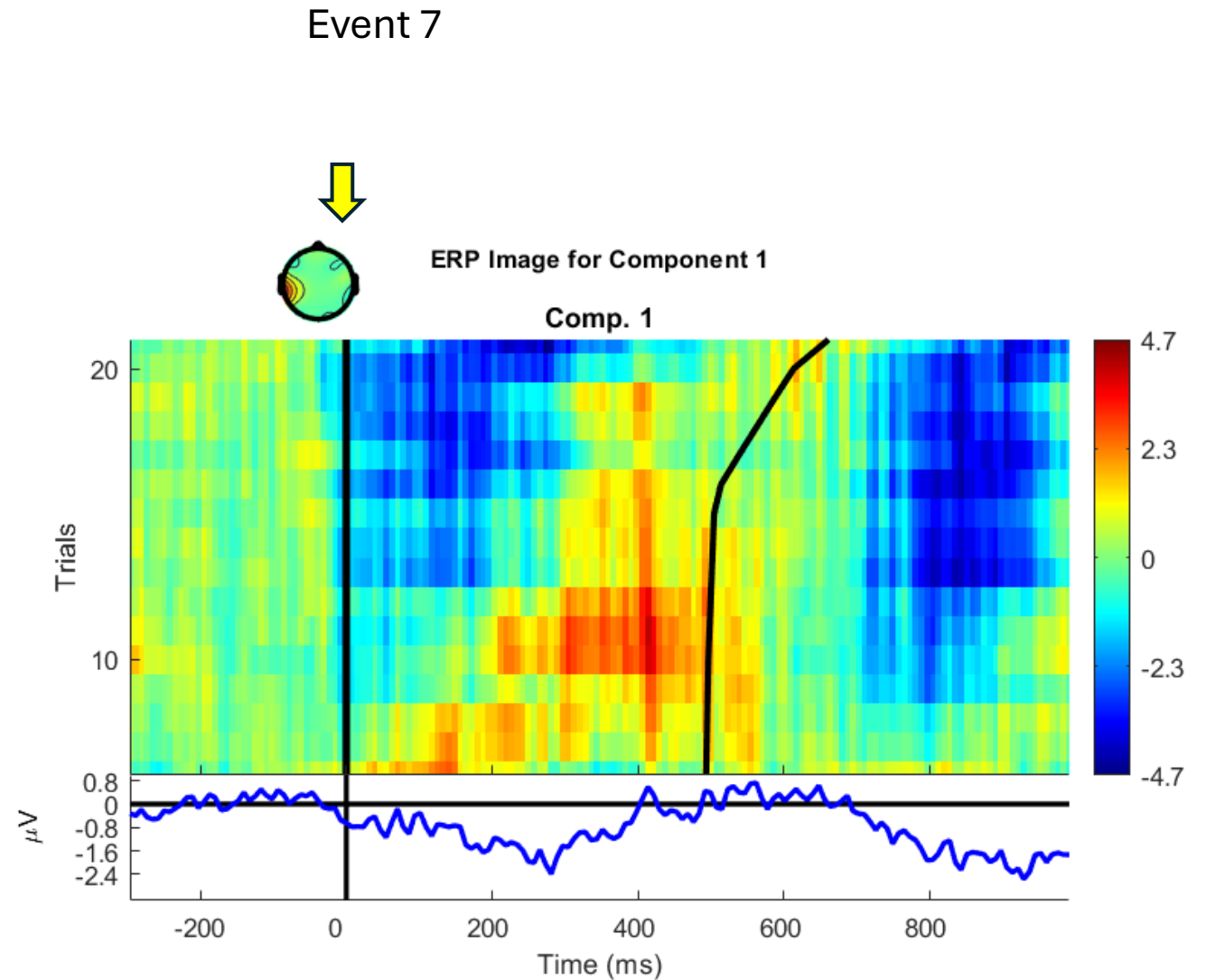
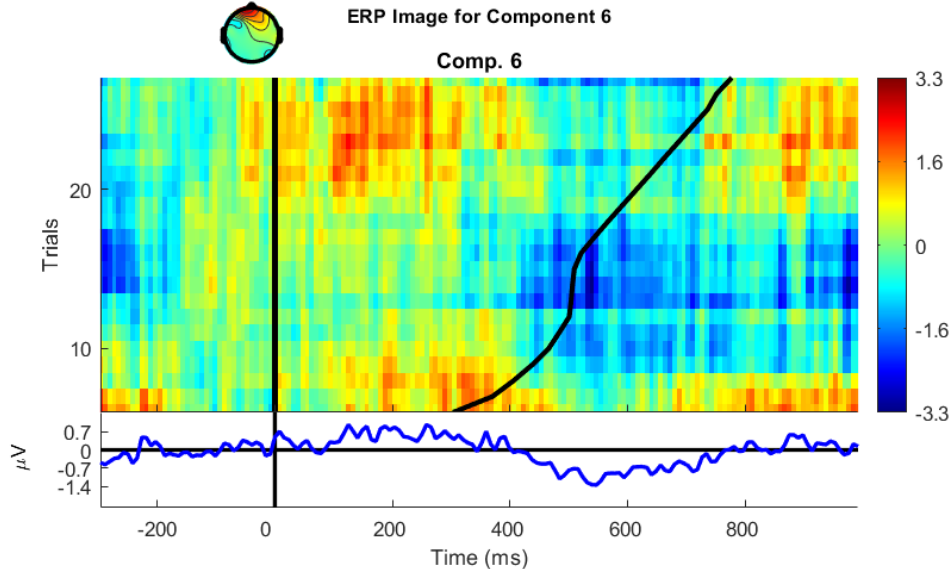
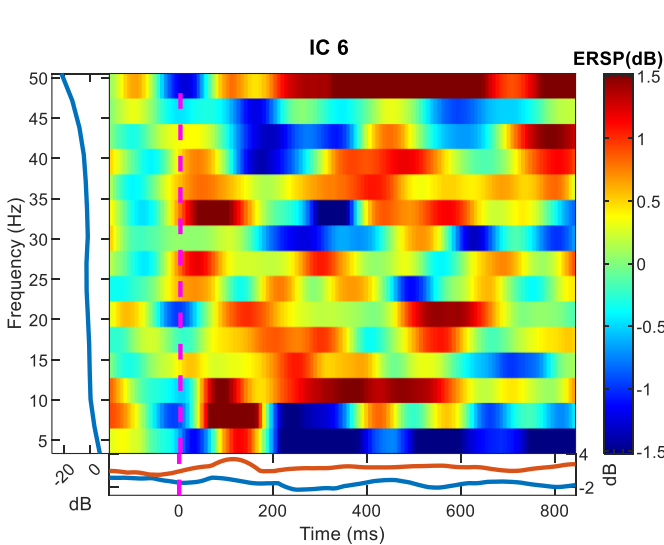
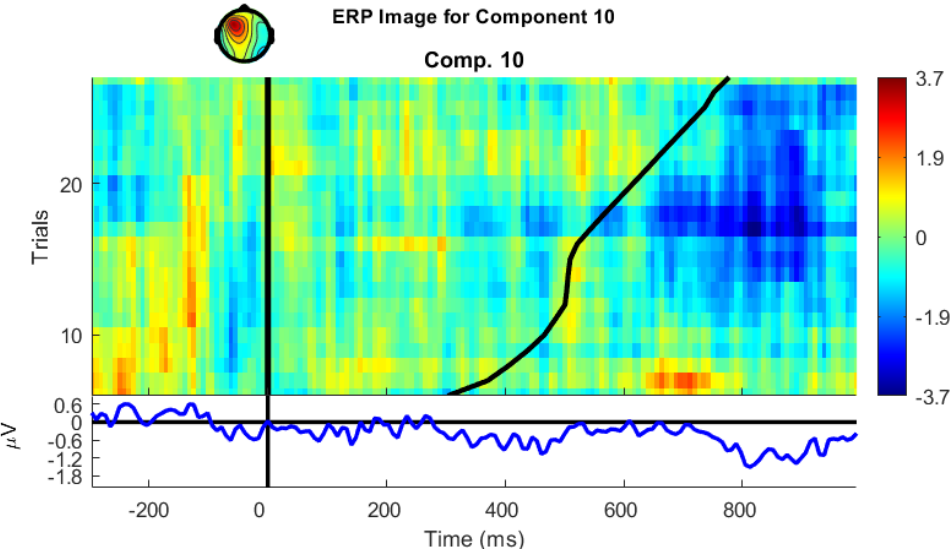
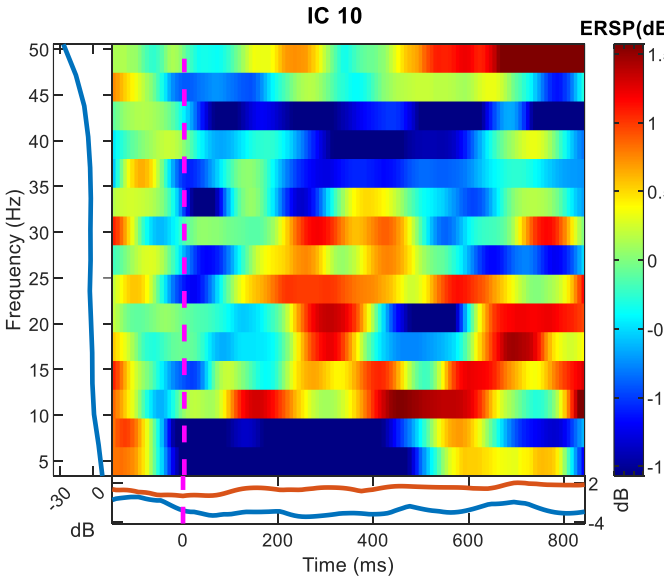


Figure 1. ERP of the 1<sup>st</sup> component for subject 104 training session 1. Event '7' is the stimulus onset when time = 0ms. Event '6' marks the car's forward movement with a black line, sorted by latency

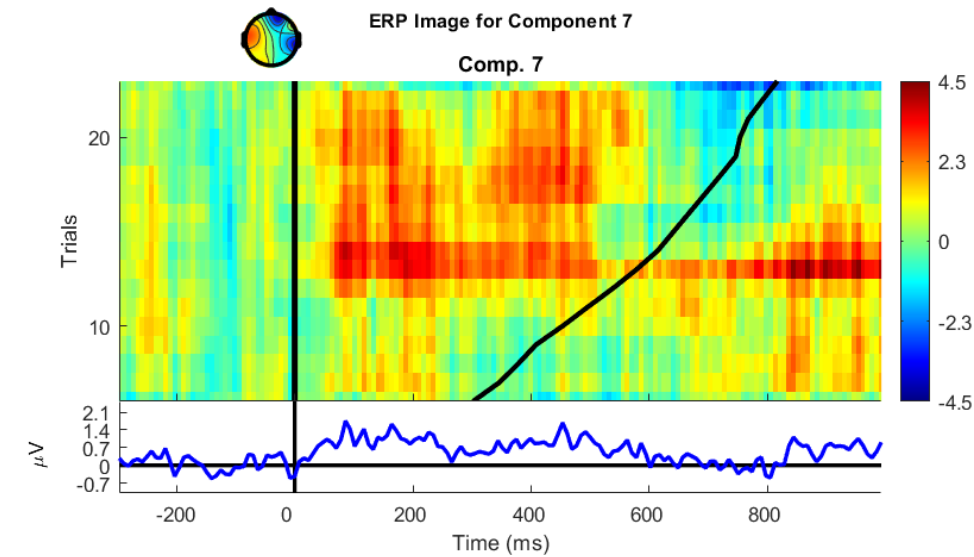
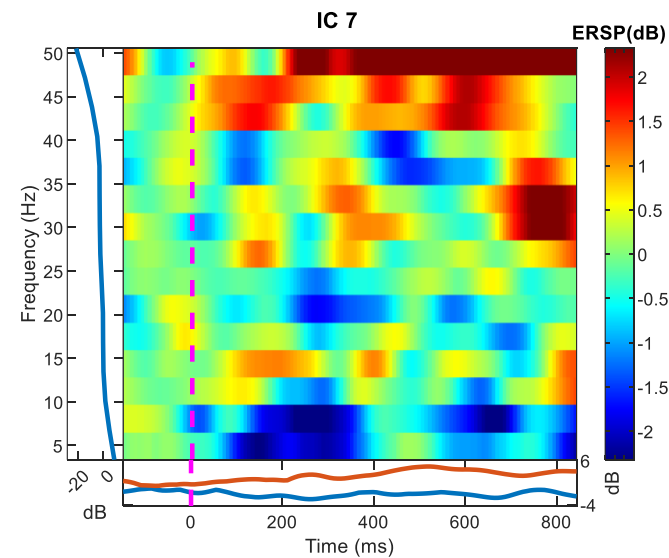
Frontal AF3		
Time(ms)	Alpha	
[0, 100]	desync	
[200, 350]	sync	



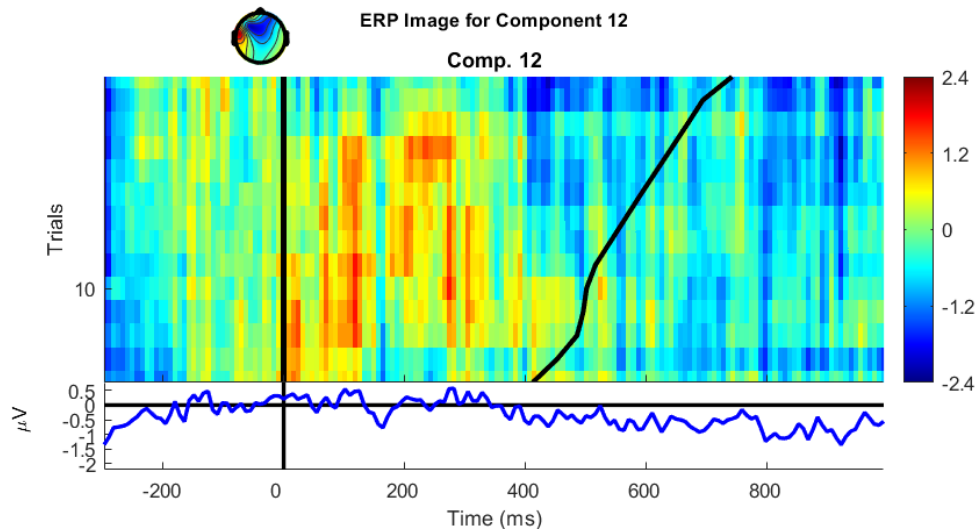
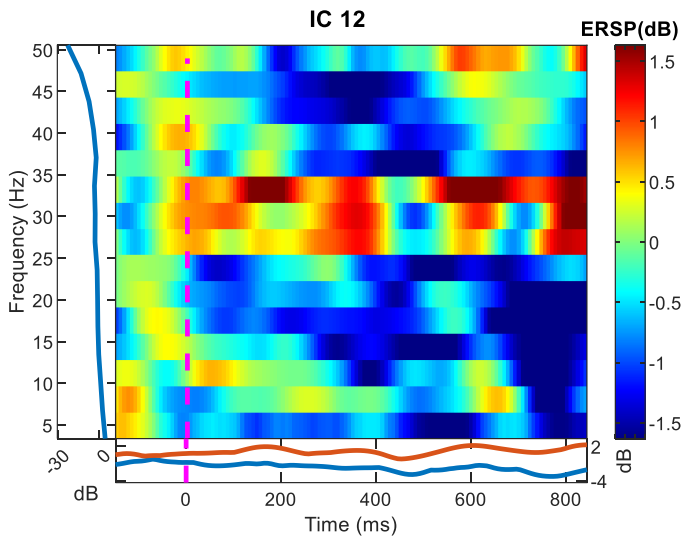
Frontal F3		
Time(ms)	Alpha	
[0, 100]	desync	
[200, 400]	sync	



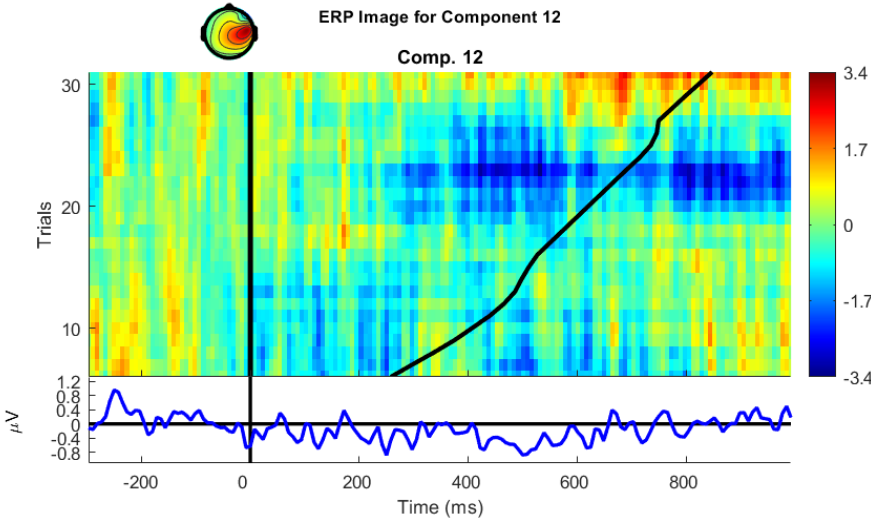
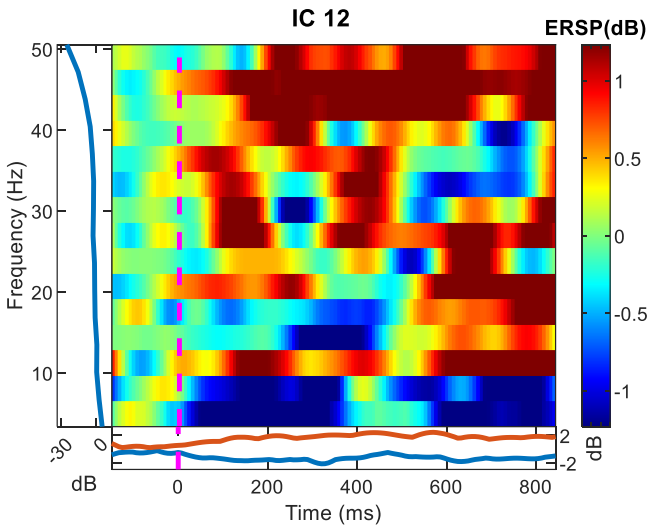
Frontal F3		
Time(ms)	Alpha	
[0, 100]	desync	
[200, 400]	sync	



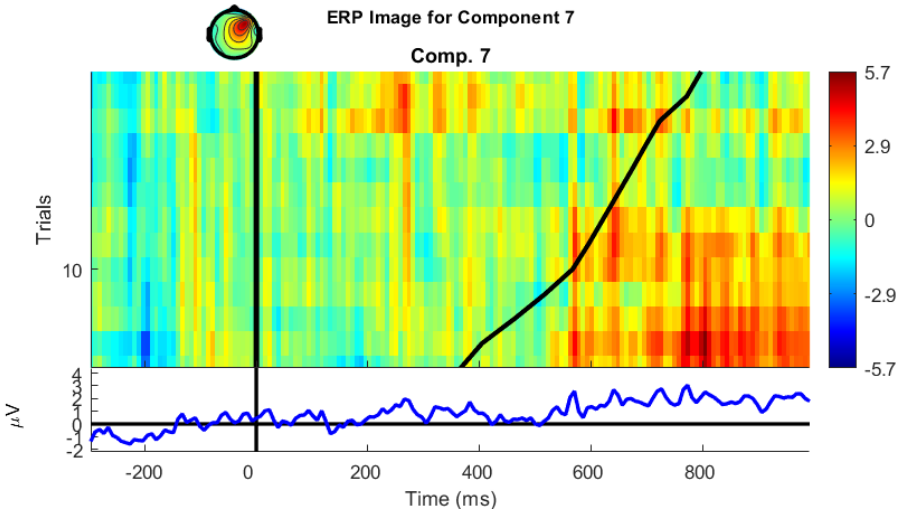
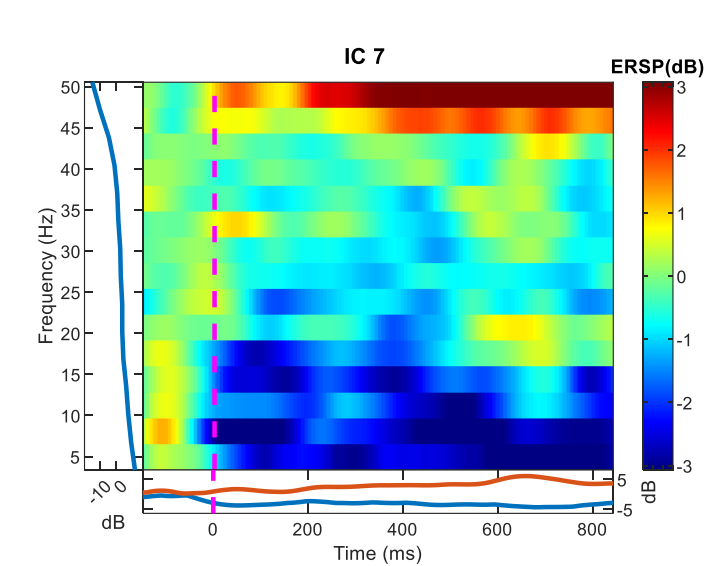
Frontal FC5		
Time(ms)	Alpha	
[0, 100]	desync	
[200, 350]	sync	



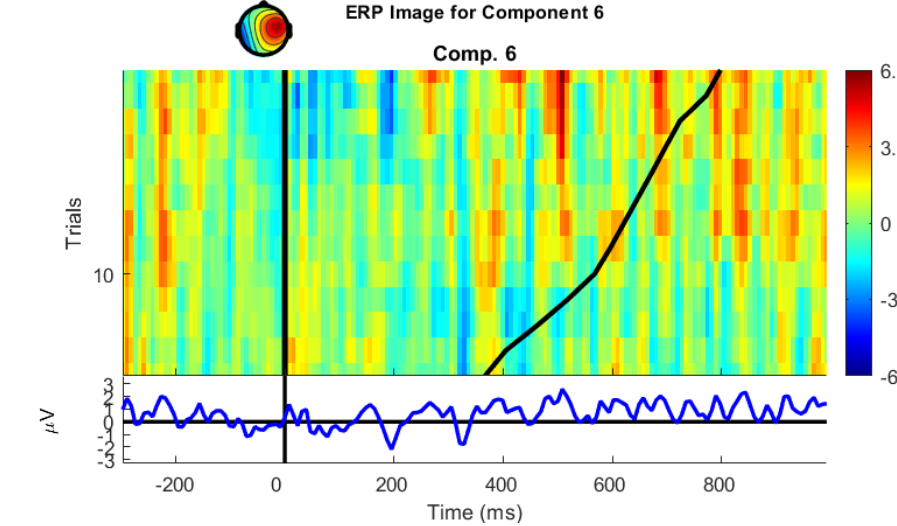
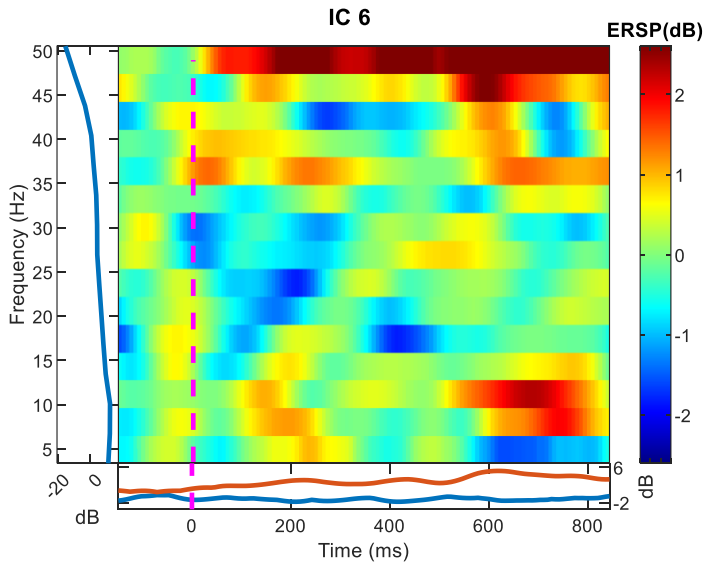
Frontal FC6		
Time(ms)	Alpha	
[0, 50]	desync	
[200, 400]	sync	



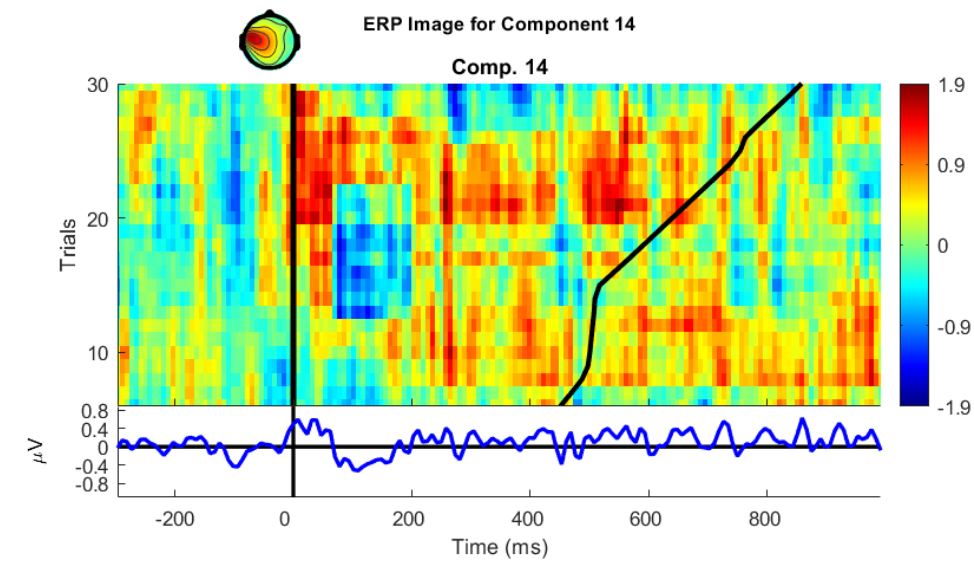
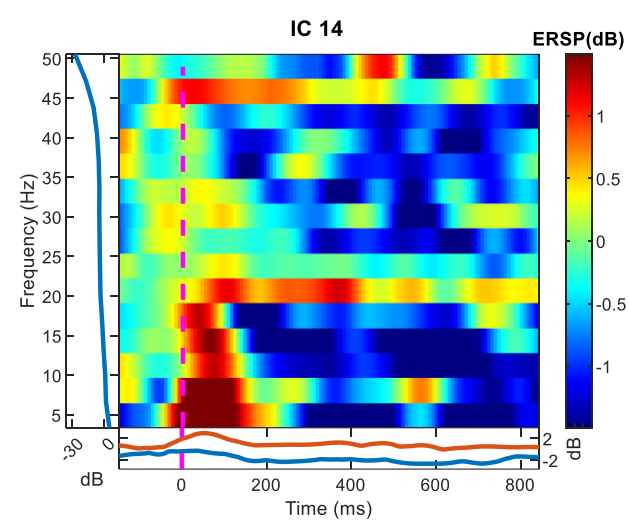
Frontal F4		
Time(ms)	Alpha	
[0, 100]	desync	
[200, 400]	sync	



Frontal FC6		
Time(ms)	Alpha	
[0, 100]	desync	
[200, 400]	sync	

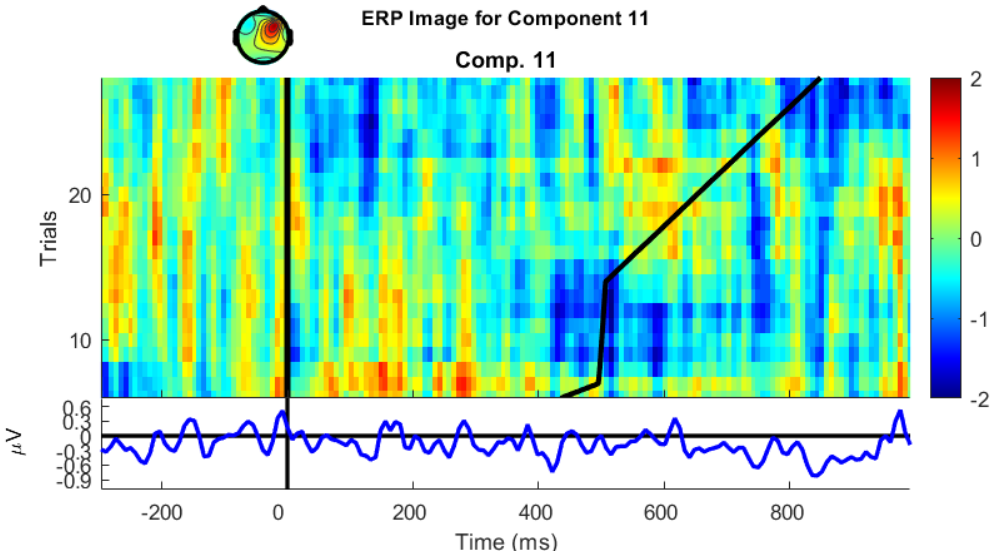
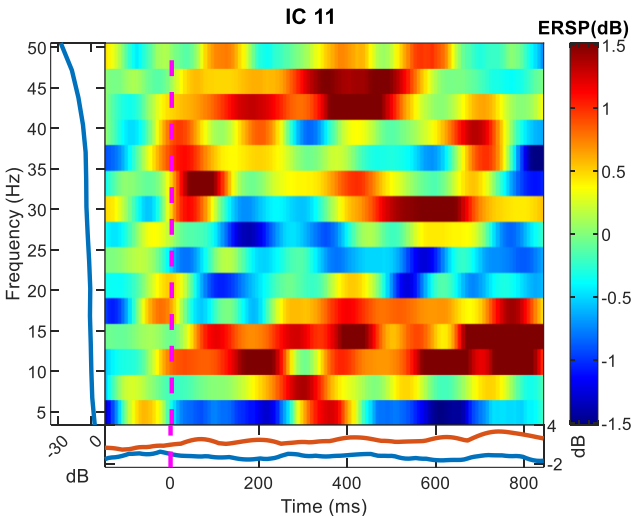


Frontal FC5		
Time(ms)	Alpha	
[0, 170]	sync	

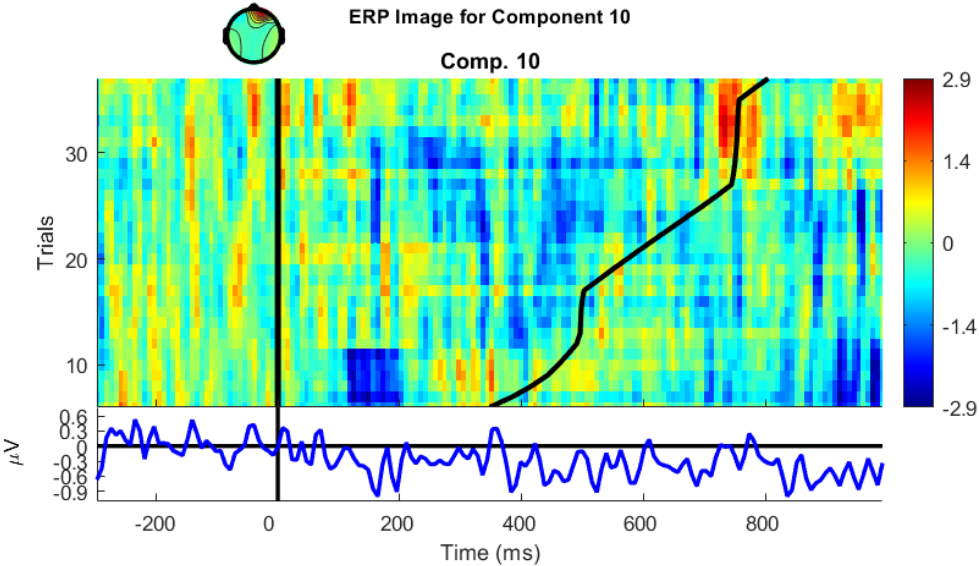
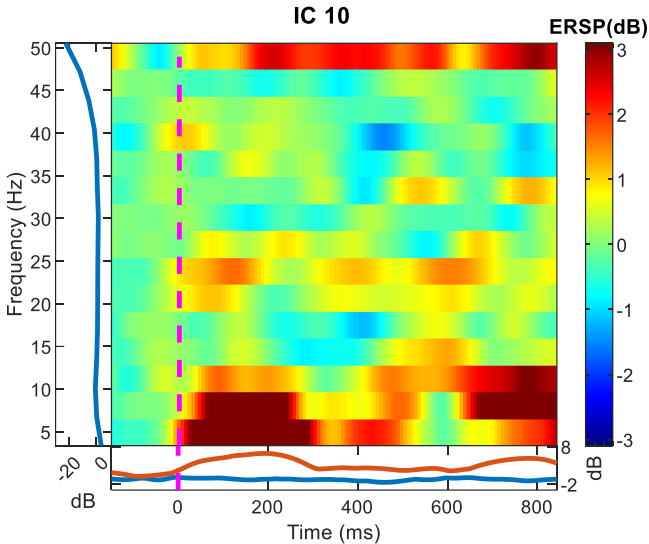




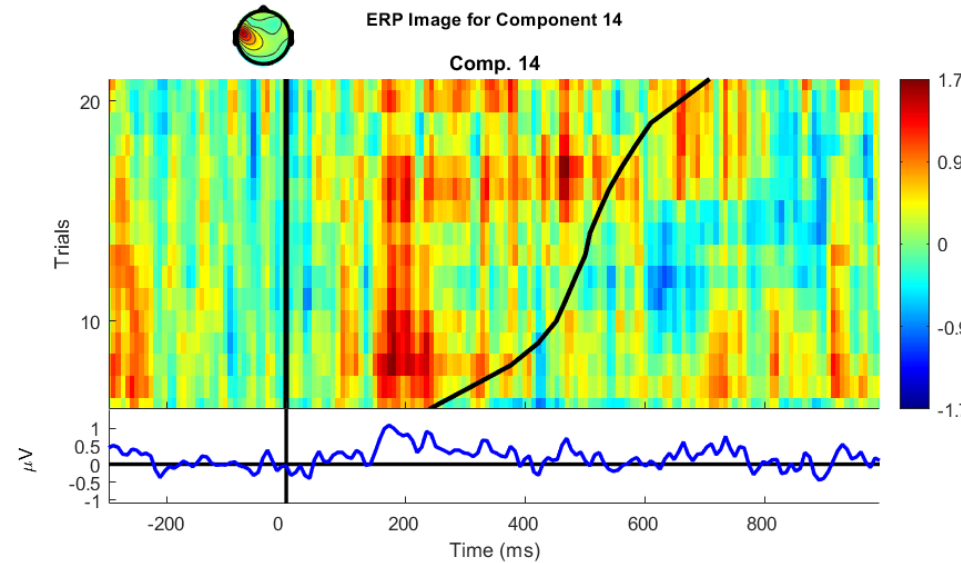
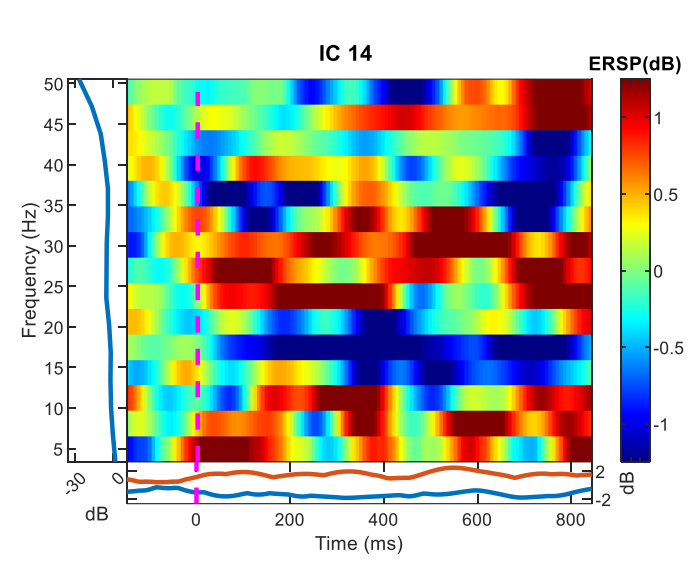
Frontal F4		
Time(ms)	Alpha	
[0, 50]	desync	
[150, 350]	sync	



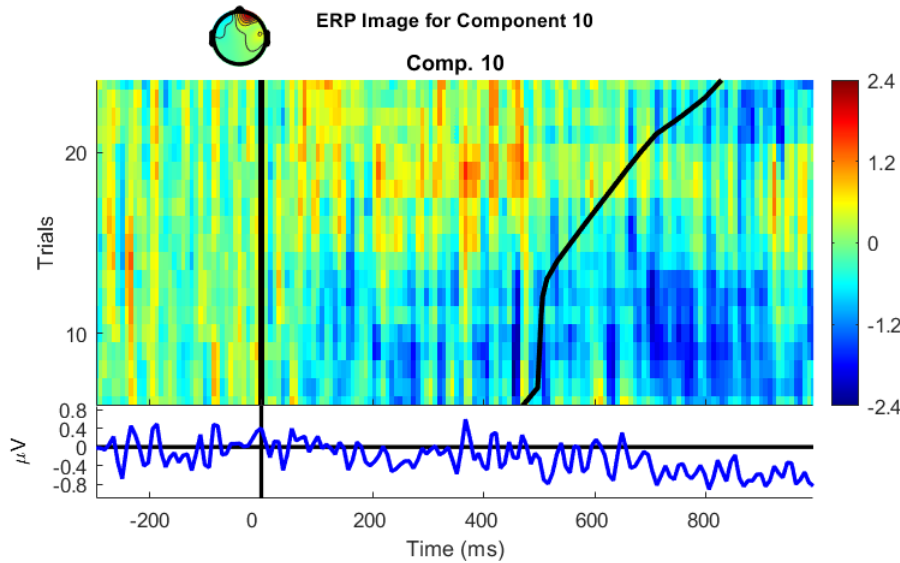
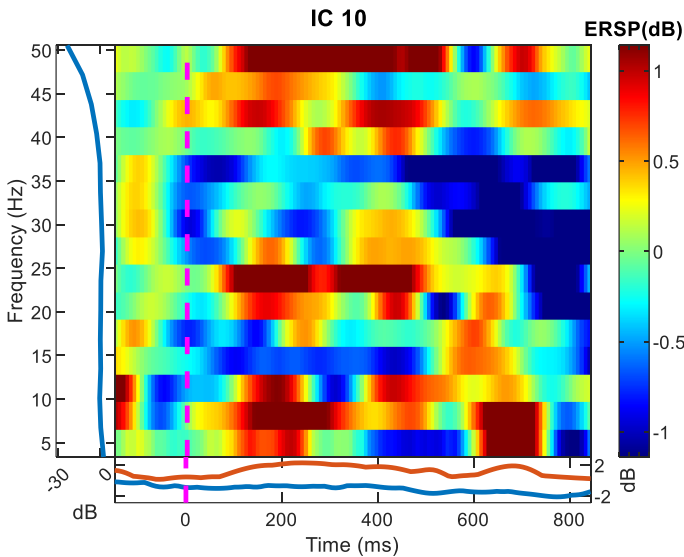
Frontal AF4		
Time(ms)	Alpha	
[50, 250]	sync	



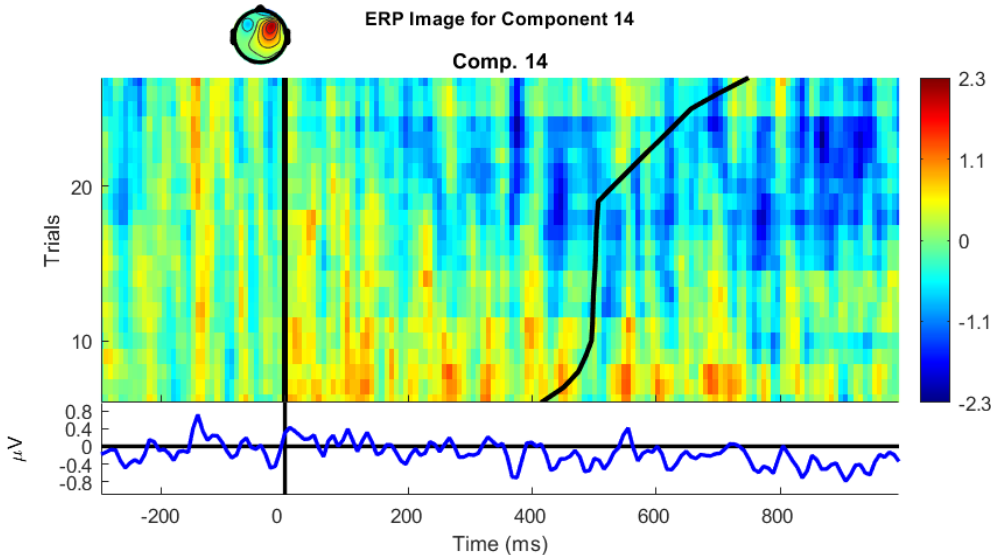
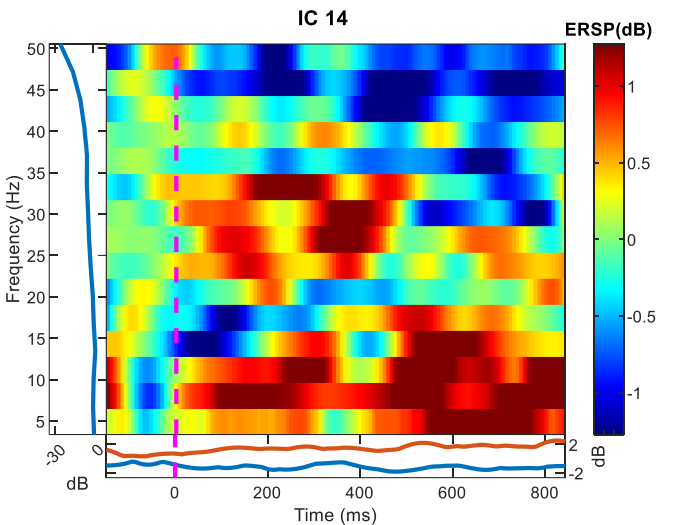
Frontal FC5		
Time(ms)	Alpha	
[300, 420]	sync	



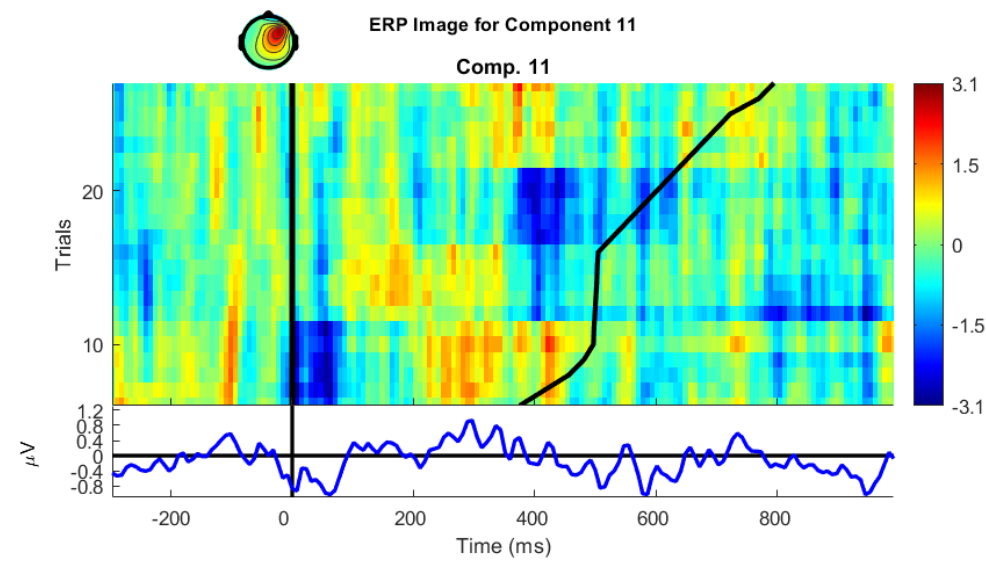
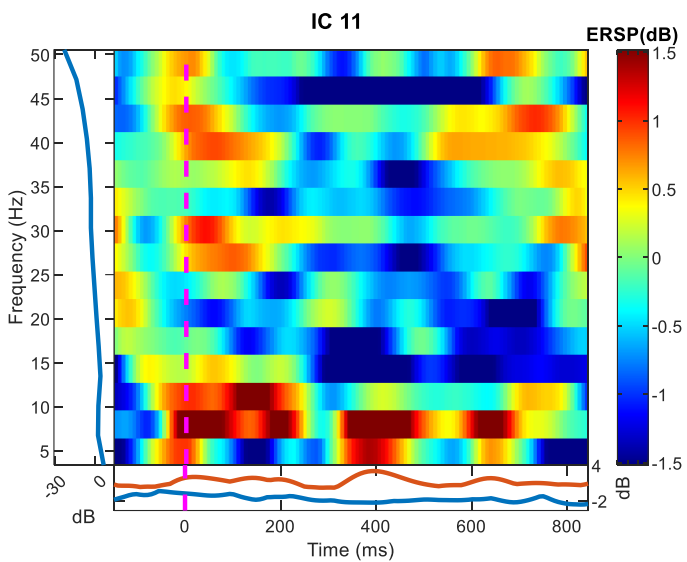
Frontal AF4		
Time(ms)	Alpha	
[150, 250]	sync	



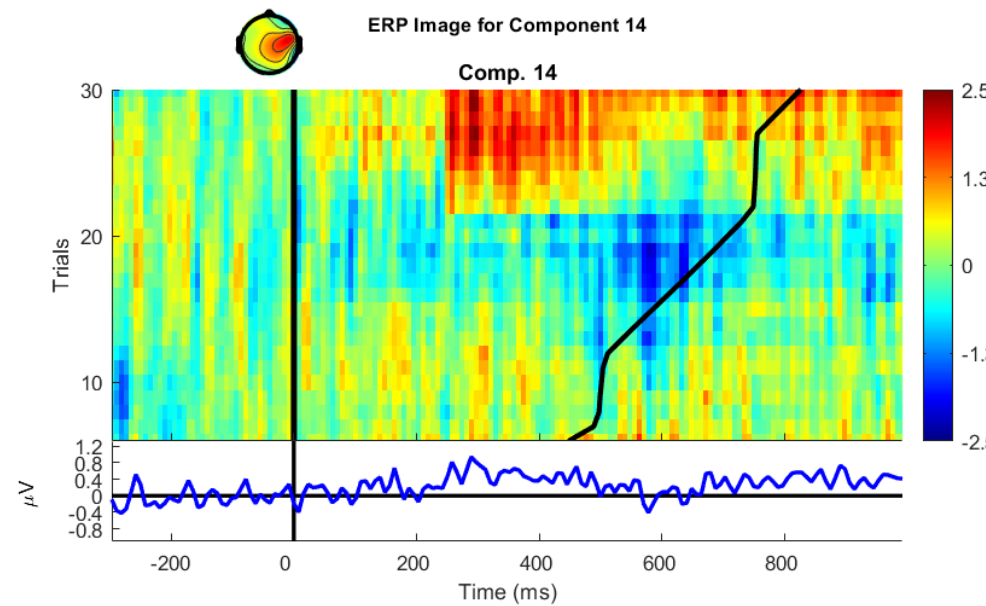
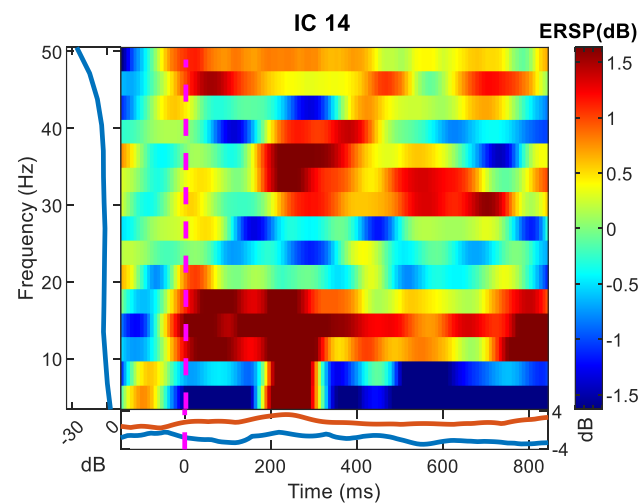
Frontal F4		
Time(ms)	Alpha	
[200, 350]	sync	



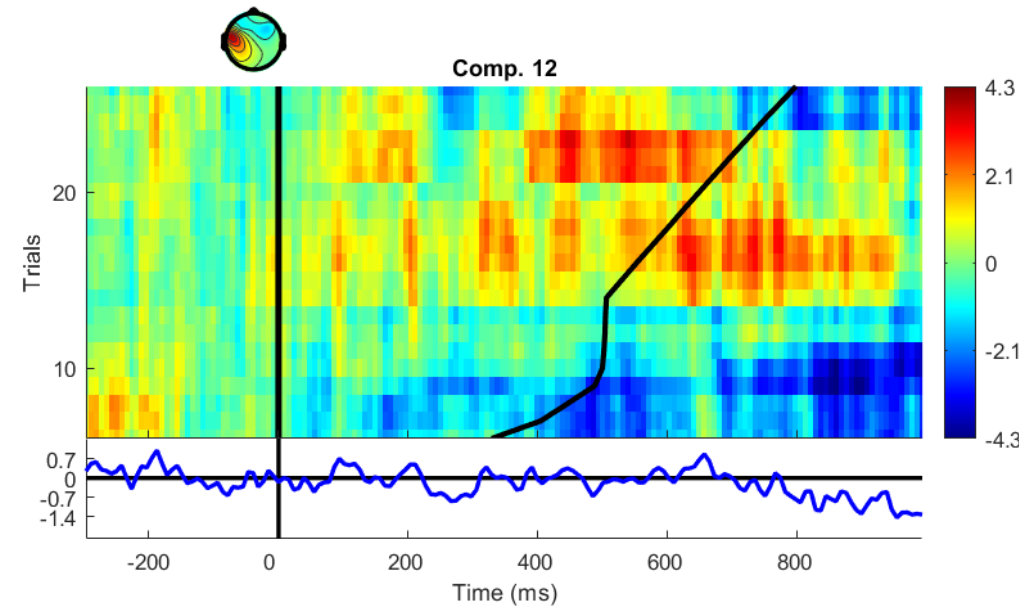
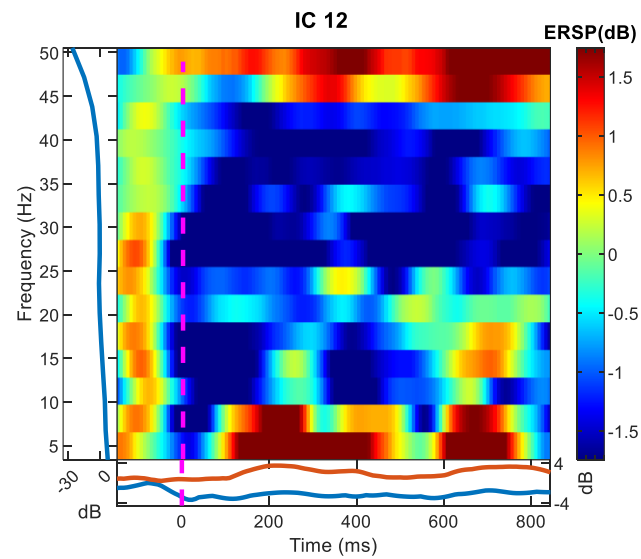
Frontal F4		
Time(ms)	Alpha	
[100, 250]	sync	



Frontal FC6		
Time(ms)	Alpha	
[200, 350]	sync	

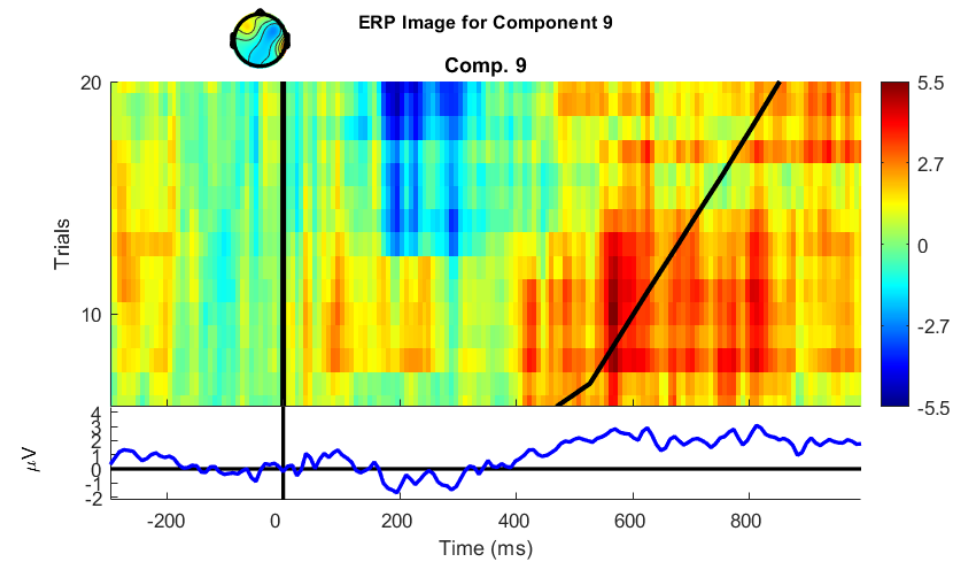
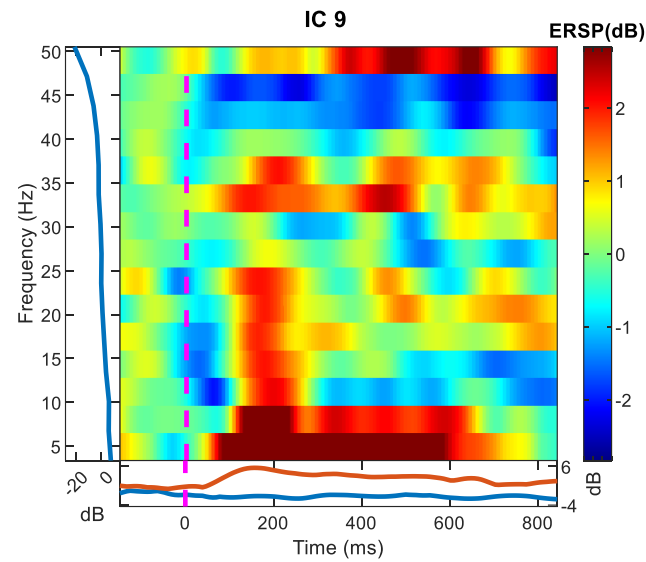


Frontal FC5		
Time(ms)	Alpha	
[0, 50]	desync	
[190, 300]	sync	





Frontal F3		
Time(ms)	Alpha	
[0, 50]	desync	
[150, 350]	sync	



===== All Regions Summary =====

Region: Left-Frontal

Components processed: 8

p-value (Early vs Middle): 0.00079694 (decrease)

p-value (Middle vs Later): 0.83288873 (decrease)

p-value (Early vs Later): 0.0031160877 (decrease)

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Region: Right-Frontal

Components processed: 8

p-value (Early vs Middle): 0.63659 (decrease)

p-value (Middle vs Later): 3.3799851e-14 (decrease)

p-value (Early vs Later): 1.1515495e-14 (decrease)

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