



QEEG Clinical Report

BrainLens V0.4



Report Description



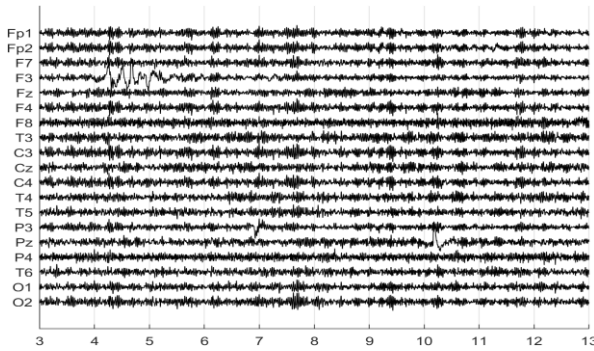
Personal & Clinical Data

Name	Mahmood Shamelian	Date of Recording	20-Oct-2024
Date of Birth - Age	14-Feb-1983 - 41.68	Gender	Male
Handedness(R/L)	Right	Source of Referral	Movasatschool
Initial Diagnosis	Bipolar Disorder-OCD-Substance Drug Abuse		
Current Medication	Medication Free		

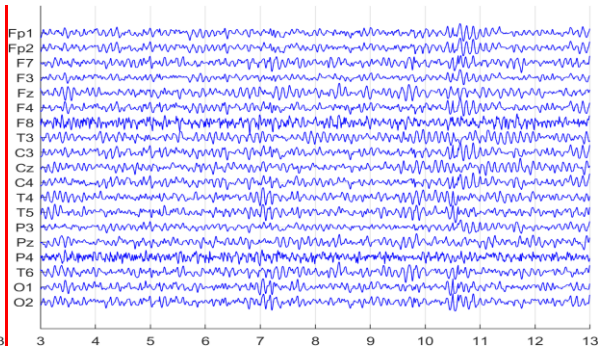
Movasatschool

Denoising Information (EC)

Raw EEG



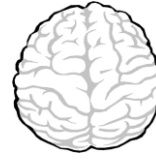
Denoised EEG



Flat Channels



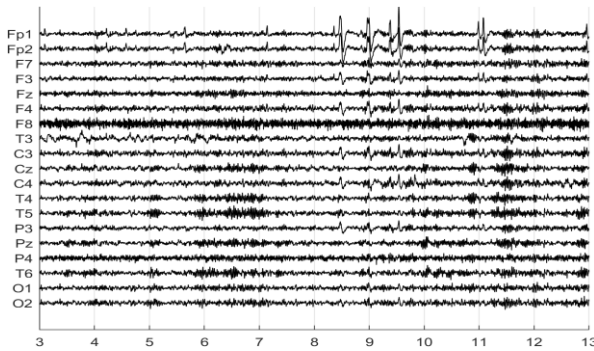
Rejected Channels



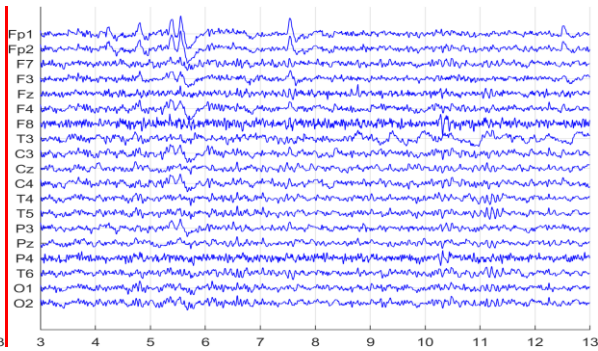
Number of Eye and Muscle Elements				Low Artifact Percentage	
Eye	0	Muscle	0		
Total Artifact Percentage				High Artifact Percentage	
EEG Quality		bad		Total Recording Time Remaining	
				214.22 sec	

Denoising Information (EO)

Raw EEG



Denoised EEG



Flat Channels



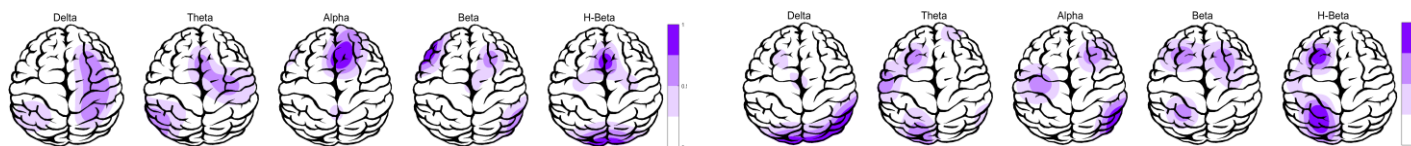
Rejected Channels



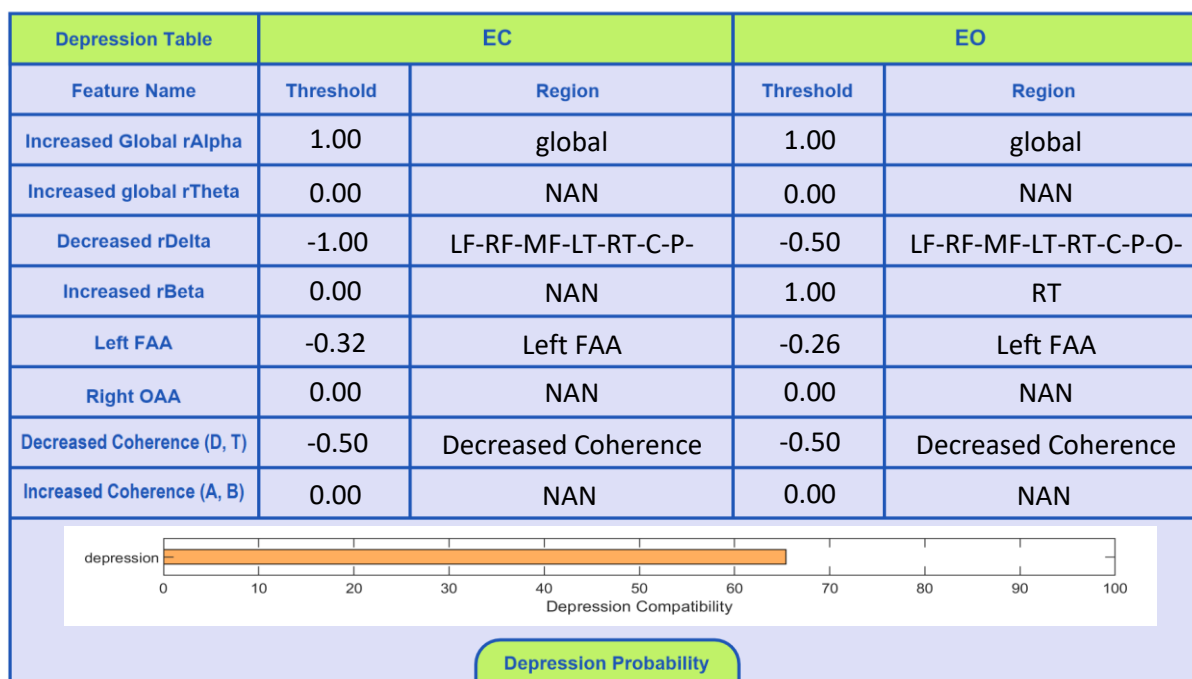
Number of Eye and Muscle Elements				Low Artifact Percentage	
Eye	0	Muscle	1		
Total Artifact Percentage				High Artifact Percentage	
EEG Quality		bad		Total Recording Time Remaining	
				231.42 sec	

Pathological assessment for mood disorders

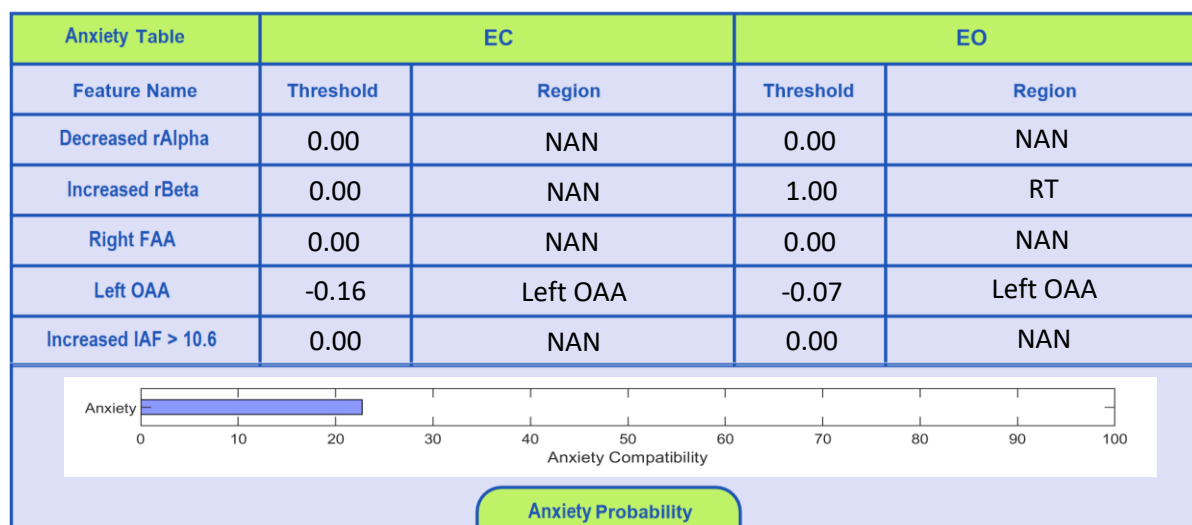
Compare to Mood Disorders Database



EEG Compatibility with Depression Diagnosis



EEG Compatibility with Anxiety Diagnosis



EEG Compatibility with Mood Swings Diagnosis *

Mood Swings Table		EC		EO	
Feature Name	Threshold	Region		Threshold	Region
Decreased rAlpha	0.00	NAN		0.00	NAN
Increased (rDelta+rTheta)	0.00	NAN		0.00	NAN
Increased rBeta	0.00	NAN		1.00	RT
Decreased Alpha Coherence	-0.50	Decreased Alpha		-0.50	Decreased Alpha
Right FAA	0.00	NAN		0.00	NAN

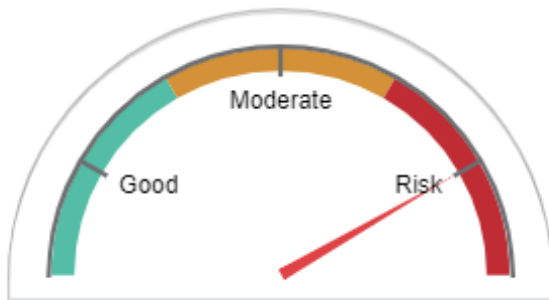
BMD

Mood Swing Compatibility

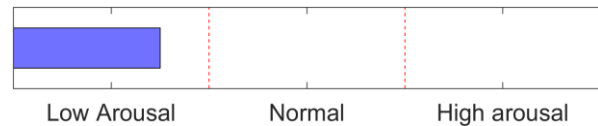
Mood Swings Probability

* This index can only be investigated if there are symptoms of mood swings (R/O BMD or R/O mood swings).

Cognitive Functions



Arousal Level Detection

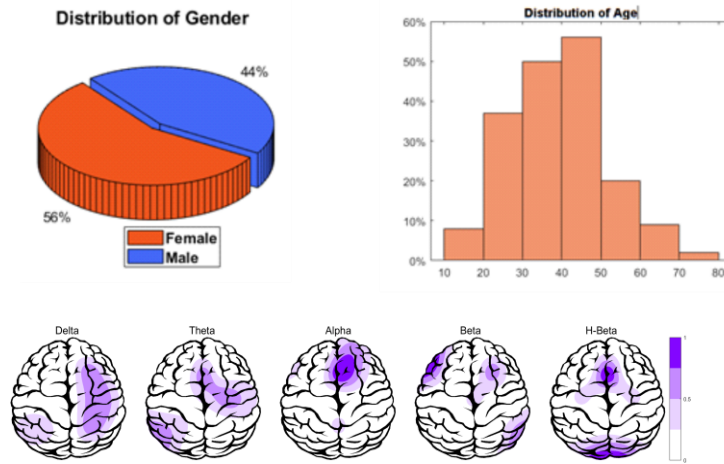


rTMS Response Prediction

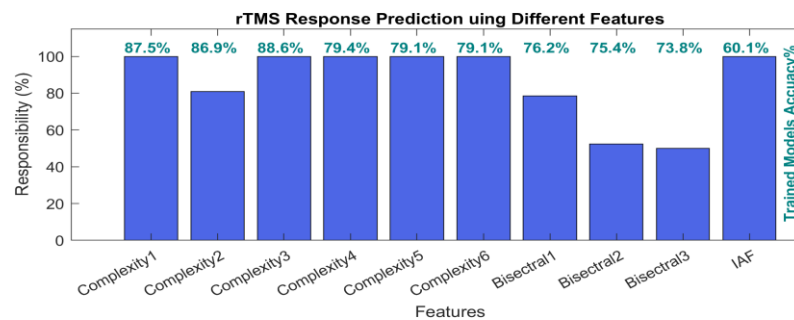
Network Performance

Accuracy: 92.1%
Sensitivity: 89.13%
Specificity: 97.47%

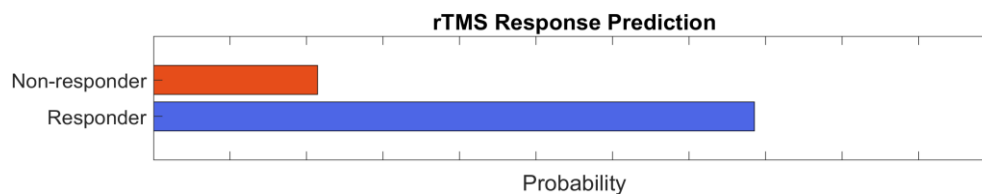
Participants Information



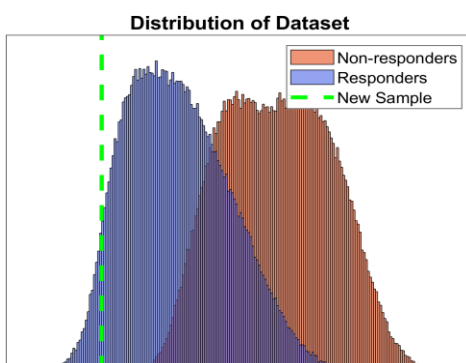
Features Information



Responsibility



Data Distribution



About Predicting rTMS Response

This index was obtained based on machine learning approaches and by examining the QEEG biomarkers of more than 470 cases treated with rTMS. The cases were diagnosed with depression (with and without comorbidity) and all were medication free. By examining more than 40 biomarkers capable of predicting response to rTMS treatment in previous studies and with data analysis, finally 10 biomarkers including bispectral and nonlinear features entered the machine learning process. The final chart can distinguish between rTMS responsive and resistant cases with 92.1% accuracy. This difference rate is much higher than the average response to treatment of 44%, in the selection of patients with clinical criteria, and is an important finding in the direction of personalized treatment for rTMS.

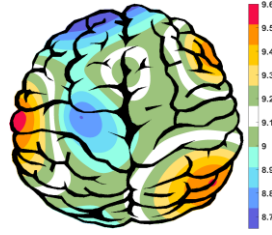
APF(EO)



Frontal APF= 09.50

Posterior APF= 09.50

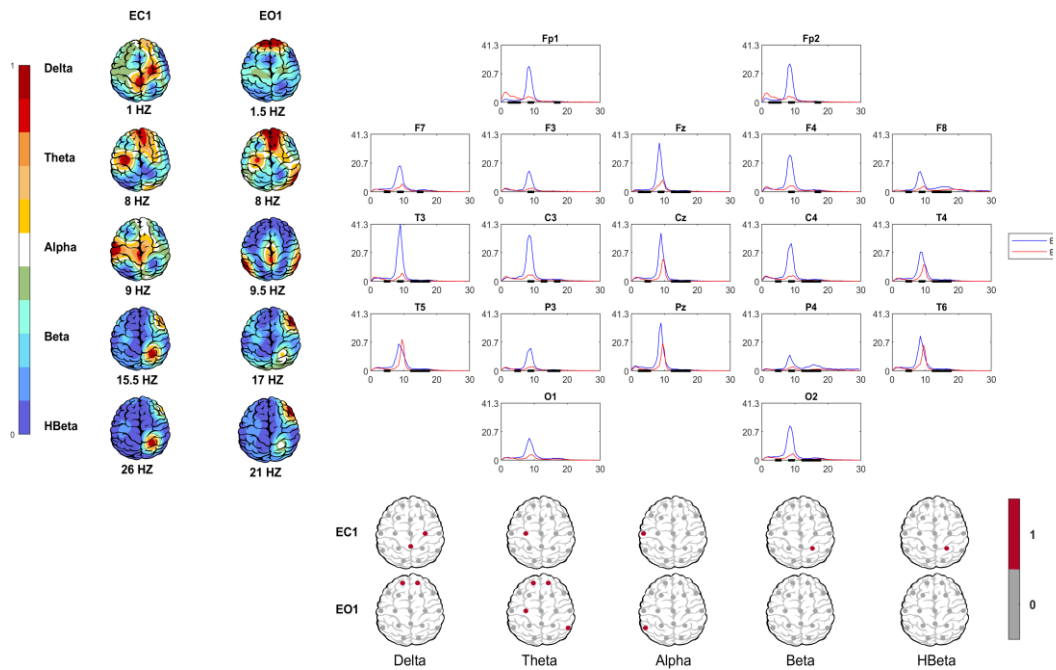
APF(EC)



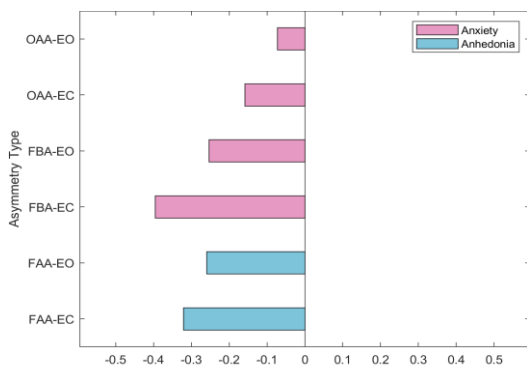
Frontal APF= 08.92

Posterior APF= 09.00

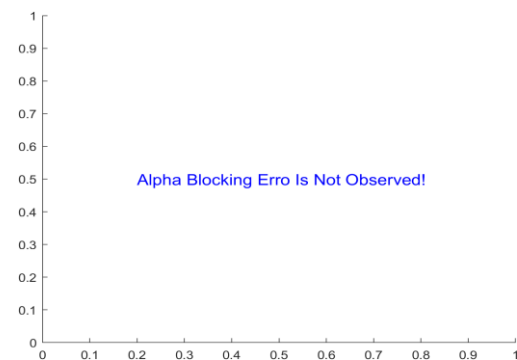
EEG Spectra



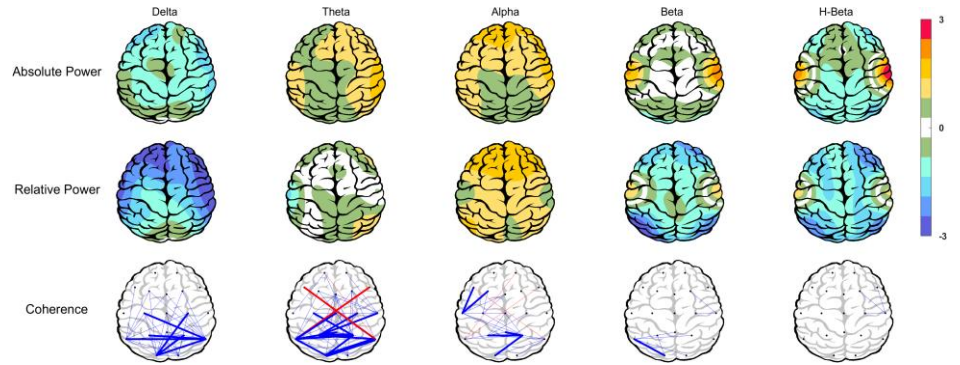
Alpha Asymmetry(AA)



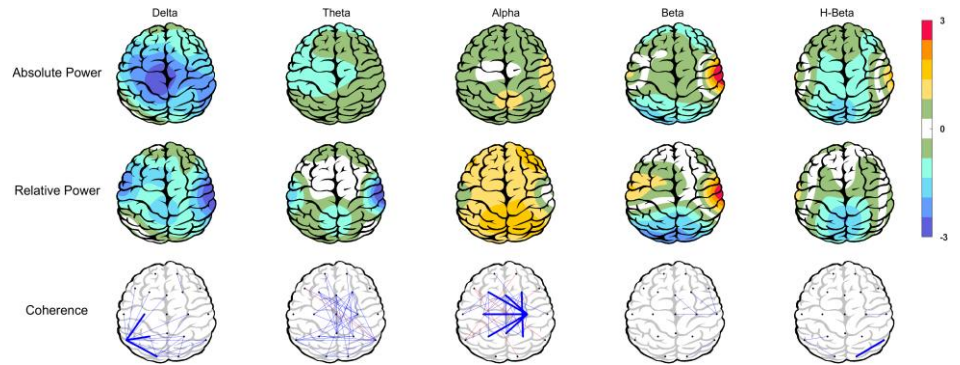
Alpha Blocking



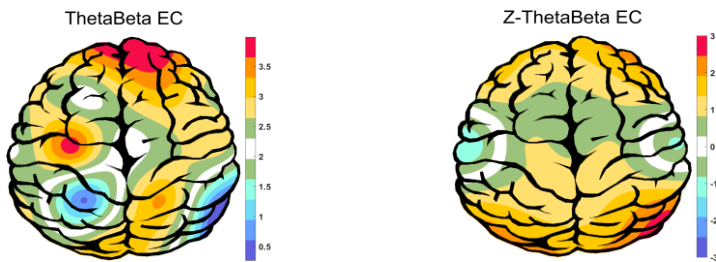
Z Score Summary Information (EC)



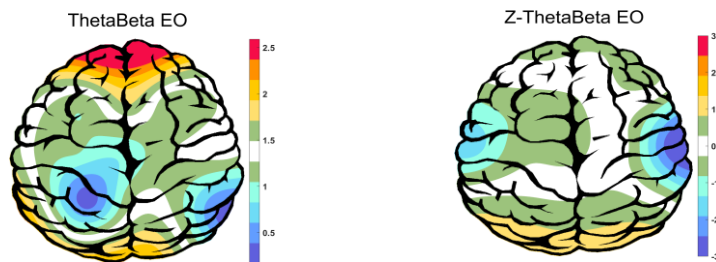
Z Score Summary Information (EO)



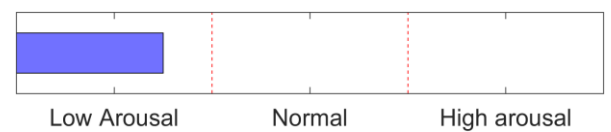
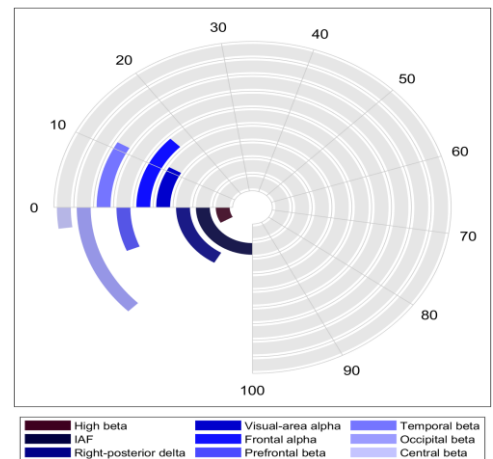
E.C.T/B Ratio (Raw- Z Score)



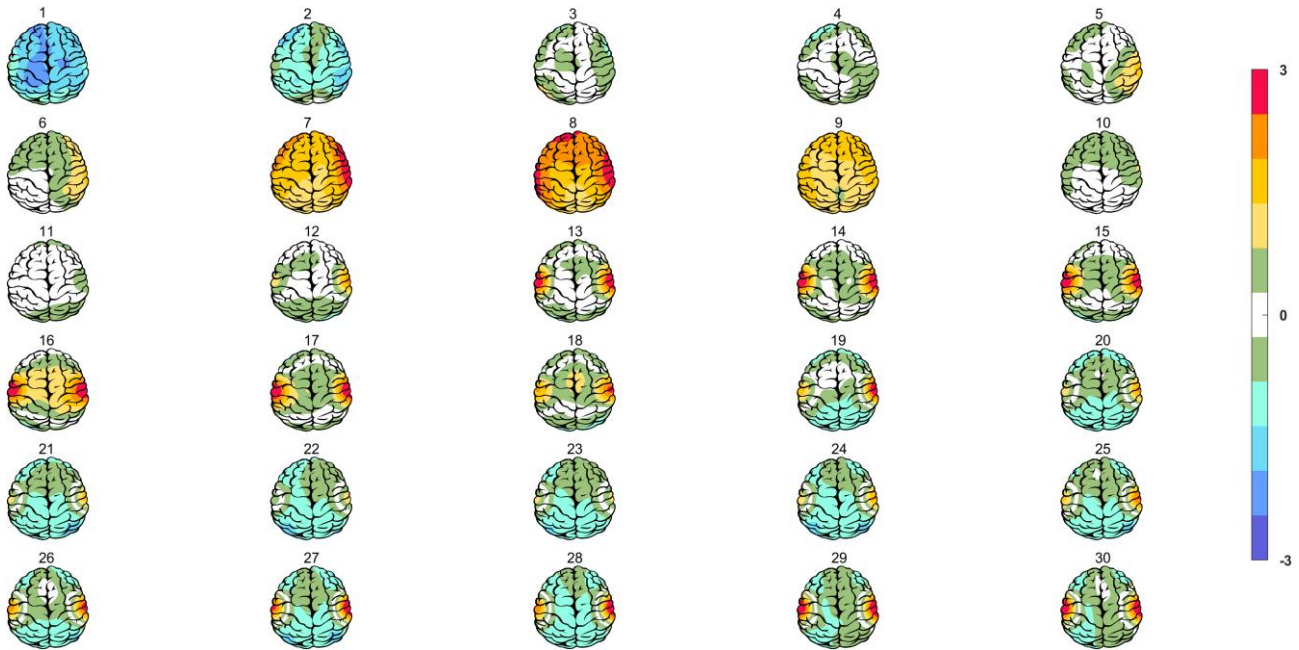
E.O.T/B Ratio (Raw- Z Score)



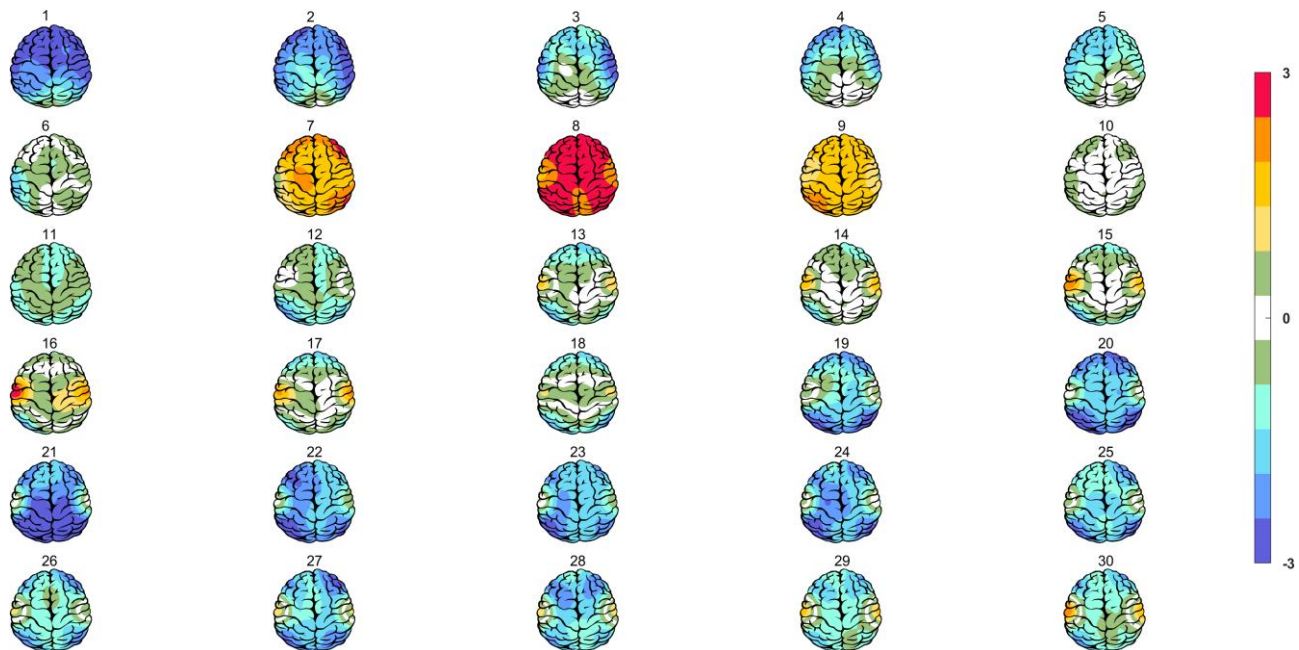
Arousal Level



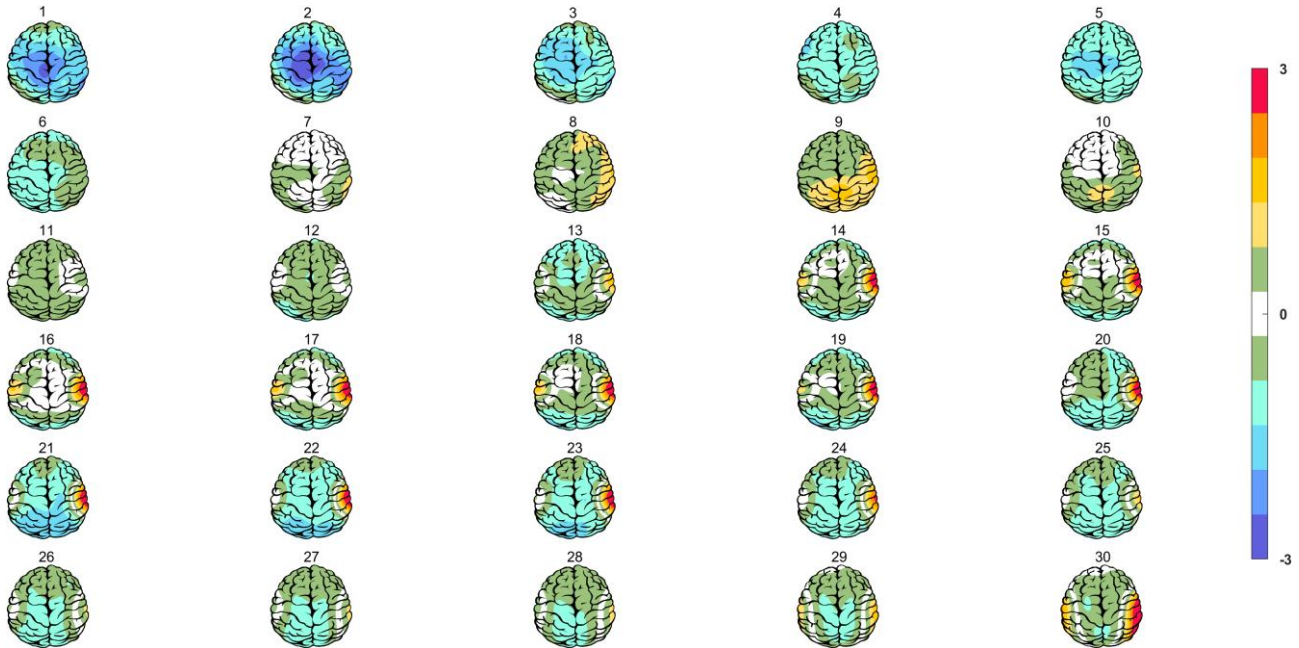
Absolute Power-Eye Closed (EC)



Relative Power-Eye Closed (EC)



Absolute Power-Eye Open (EO)



Relative Power-Eye Open (EO)

