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QEEG Clinical Report

BrainLens V0.4

Report Description

Personal & Clinical Data

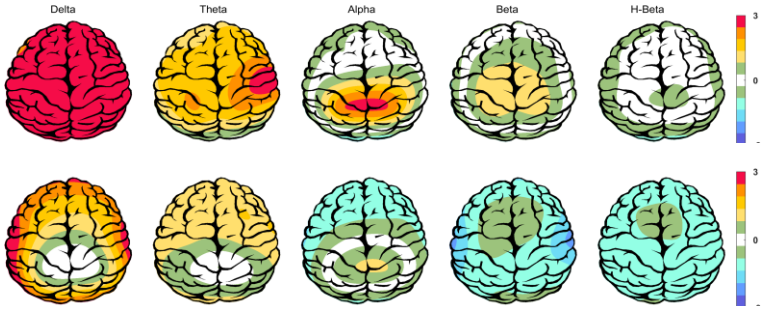
Name	Abbas Shamkli	Date of Recording	2025-07-19
Date of Birth - Age	2001-11-30 - 23.8	Gender	Male
Handedness(R/L)	Right	Source of Referral	Dr Dinarvand
Initial Diagnosis	Drug Abuse-Sound in the Ear-Tinnitus		
Current Medication	Clonazepam		

Dr Dinarvand

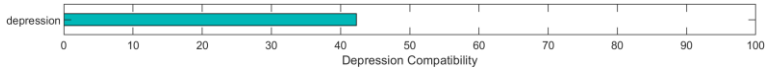
Summary Report

EEG Quality

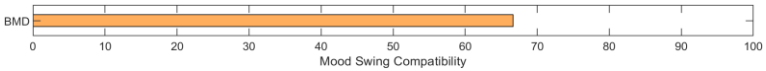
Z-score Information



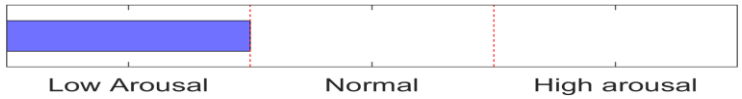
Compatibility with Depression



Compatibility with Mood Swing



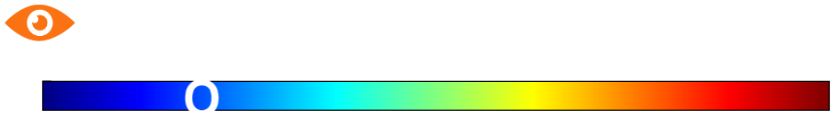
Arousal Level

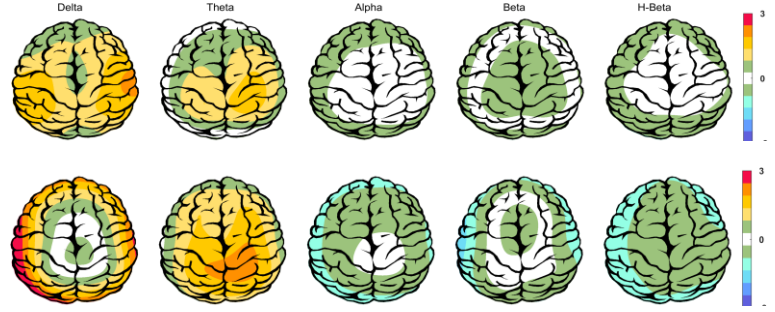


APF

Posterior APF-EC= 10.00

Posterior APF-EO= 10.50

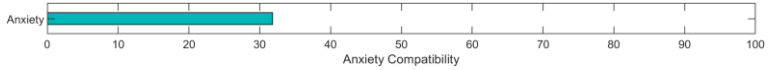




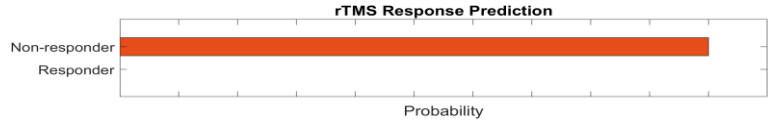
Absolute Power

Relative Power

Compatibility with Anxiety



TMS Responsibility



Cognitive Performance

To investigate QEEG-based predicting medication response, please refer to the Report.

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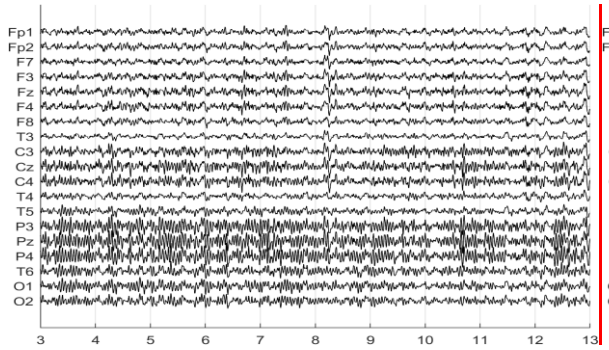
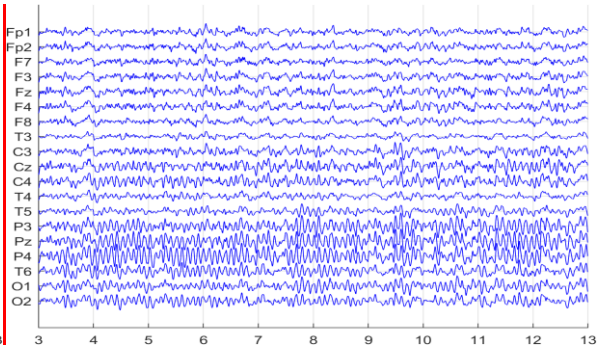
Denoising Information (EC)

Raw EEG



Denoised EEG



Flat Channels

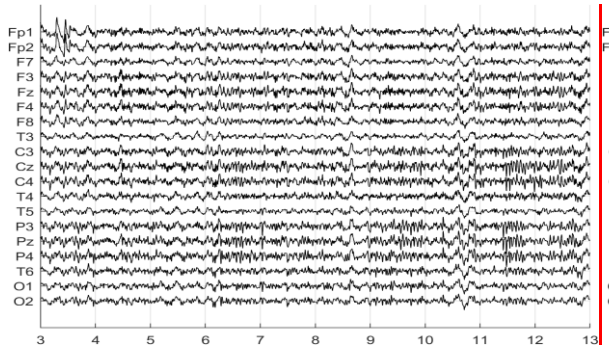
Rejected Channels

Number of Eye and Muscle Elements			
Eye	0	**Muscle**	0
Total Artifact Percentage			
EEG Quality	good		

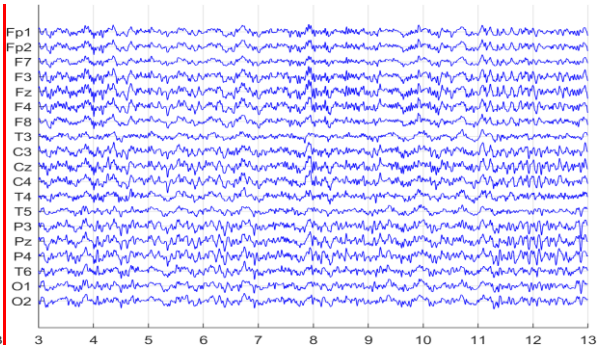
Low Artifact Percentage	
High Artifact Percentage	
Total Recording Time Remaining	246.20 sec

Denoising Information (EO)

Raw EEG



Denoised EEG



Flat Channels

Rejected Channels

Number of Eye and Muscle Elements			
Eye	3	**Muscle**	0
Total Artifact Percentage			
EEG Quality	good		

Low Artifact Percentage	
High Artifact Percentage	
Total Recording Time Remaining	243.90 sec

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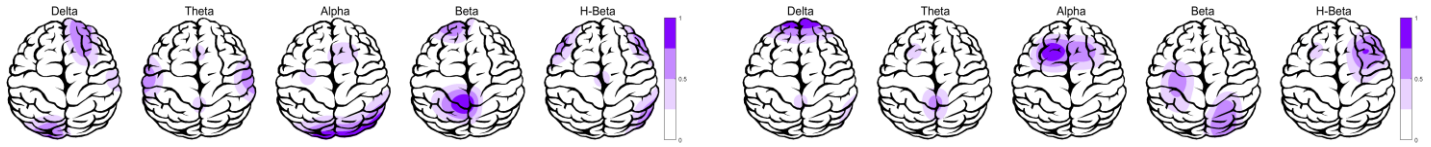
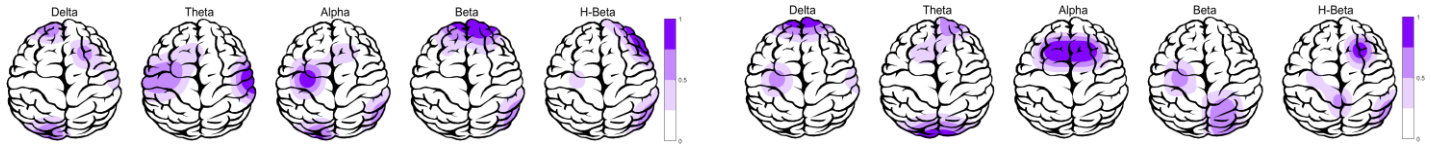
Pathological assessment for mood disorders and adult ADHD

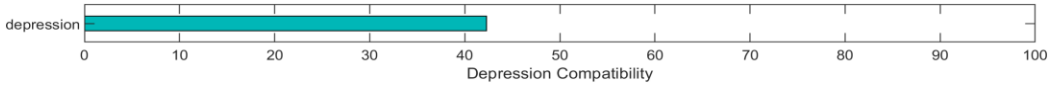
Compare to Mood Disorders Database

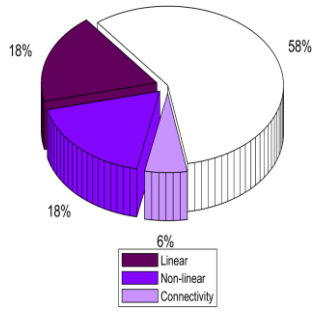


Compare to Adult ADHD Database

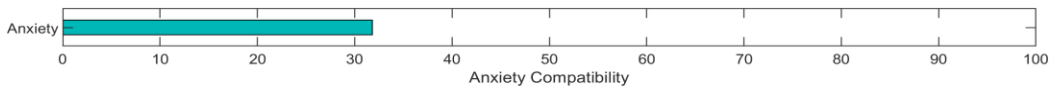


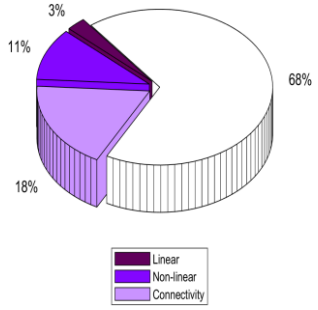
EEG Compatibility with Depression Diagnosis



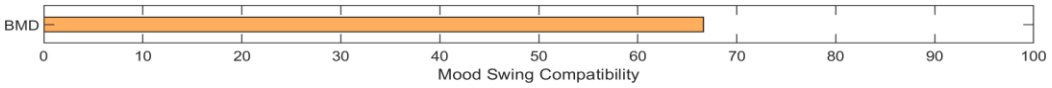


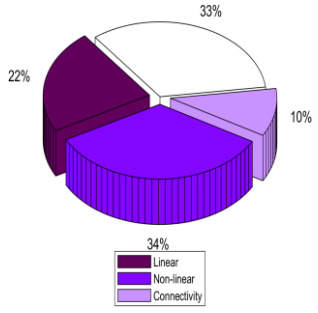
EEG Compatibility with Anxiety Diagnosis





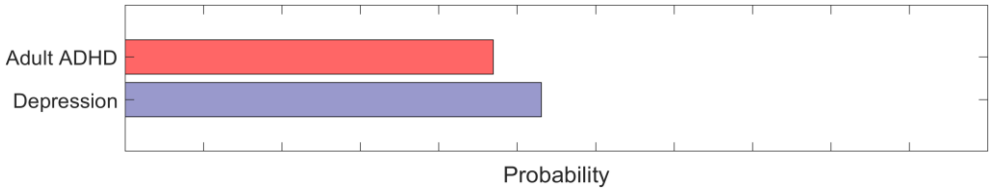
EEG Compatibility with Mood Swing Diagnosis *



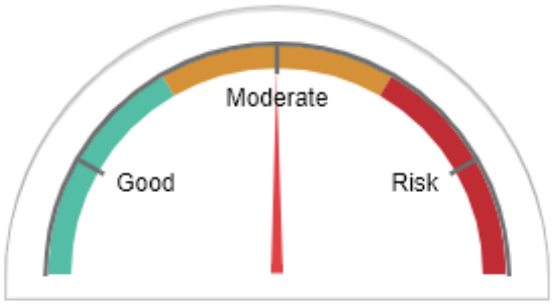


* This index can only be investigated if there are symptoms of mood swings (R/O BMD or R/O mood swings).

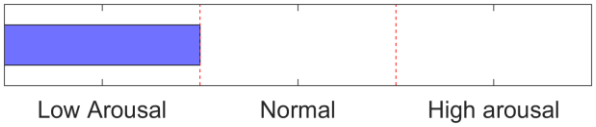
Depression and Adult ADHD Diagnosis Probabiliy



Cognitive Functions Asessment



Arousal Level Detection



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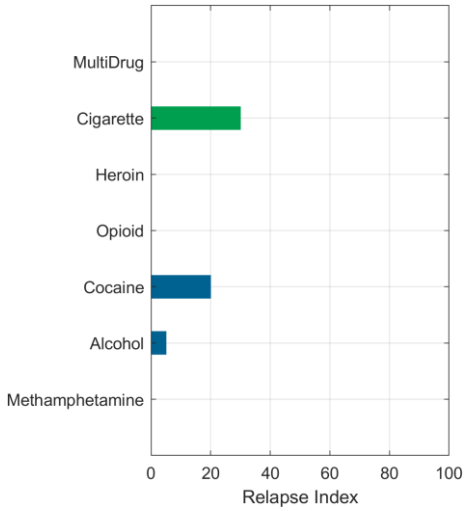
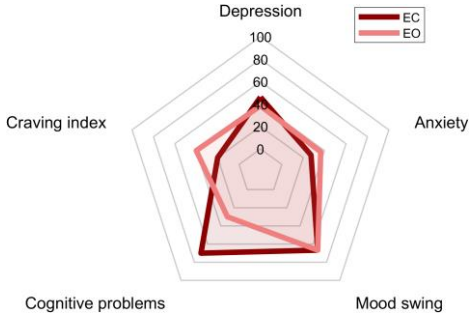
Pathological Assessment for Substance Abuse

Relapse Index

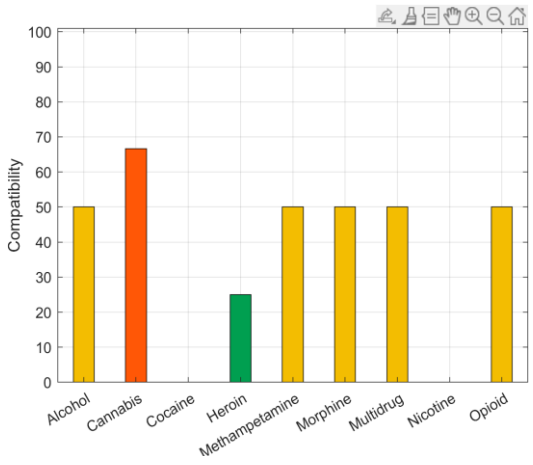


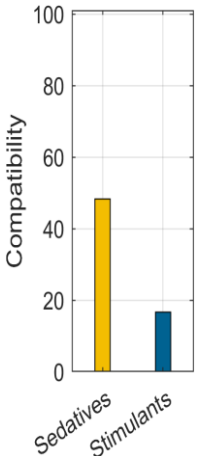
Comorbid Symptoms



The Relapse graph shows the relapse index based on a combination of EEG neuromarkers. If the type of substance your patient uses is included in this chart, you can read its relapse rate. **The condition for using this chart is that the patient consumes each substance specified in the chart.** If your patient does not consume each of the substances specified in the chart, the index shown is not valid.

Subsance Abuse Compatibiliy





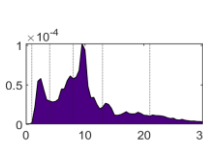
The Compatibility graph shows the compatibility of the patient's EEG neuromarkers and the alternations that the specific substance causes in the EEG. In other words, this chart indicates that your patient has how percentage of validated neuromarkers due to the use of specific substances.

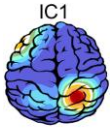
Using this chart, you can figure out how substances have affected EEG and if multiple drugs were used, which one has the most dominant effect. **If your patient does not consume each of the substances specified in the chart, the index shown is not valid.**

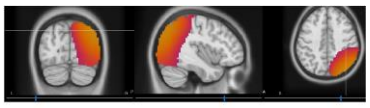
Functional Problems Source Detection

Eyes Closed

Freq = 9.5 Hz

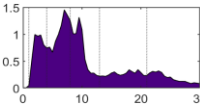


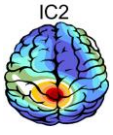


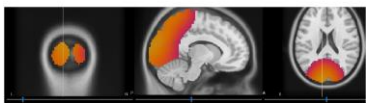


Brodmann area 19
Precuneus

Freq = 7 Hz



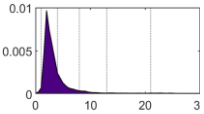


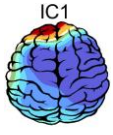


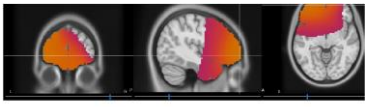
Brodmann area 18
Cuneus
Middle Occipital Gyrus

Eyes Open

Freq = 2 Hz

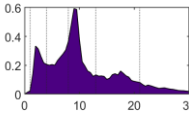


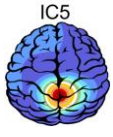


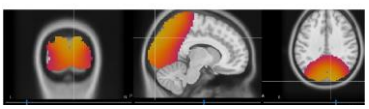


Brodmann area 10
Inferior Frontal Gyrus
Middle Frontal Gyrus

Freq = 9 Hz







Brodmann area 19
Cuneus

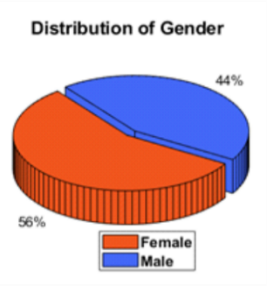
Abbas Shamkli\Dr Dinarvand

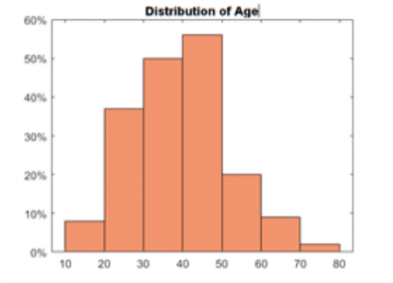
rTMS Response Prediction

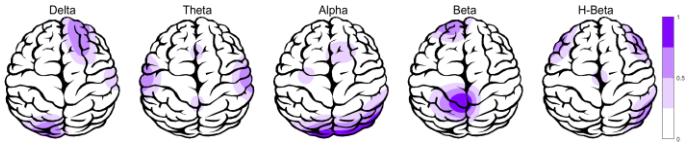
Network Performance

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

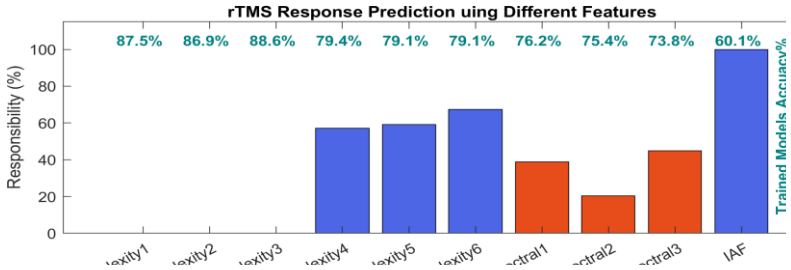
Participants Information



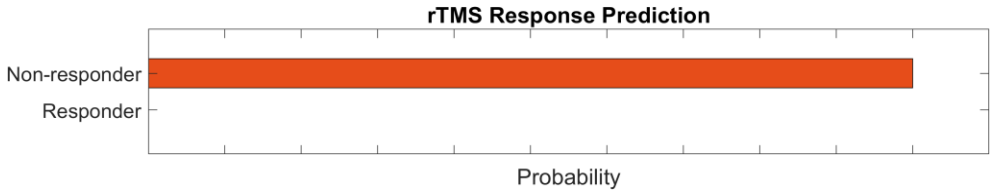




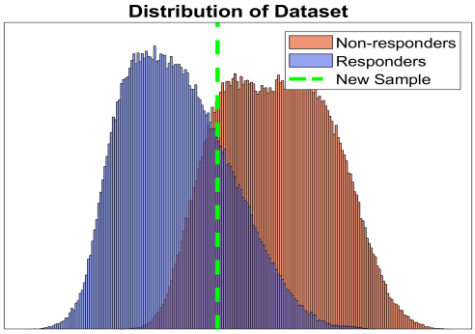
Features Information



Responsibility



Data Distribution

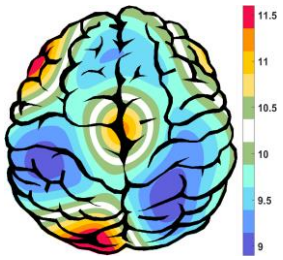


About Predicting rTMS Response

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.

Abbas Shamkli\Dr Dinarvand

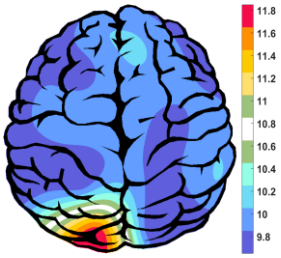
APF(EO)



Frontal APF= 09.50

Posterior APF= 10.50

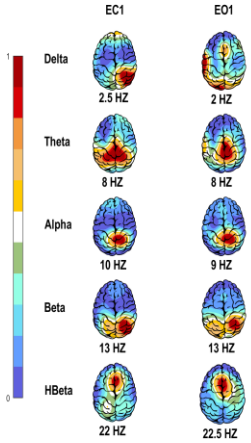
APF(EC)

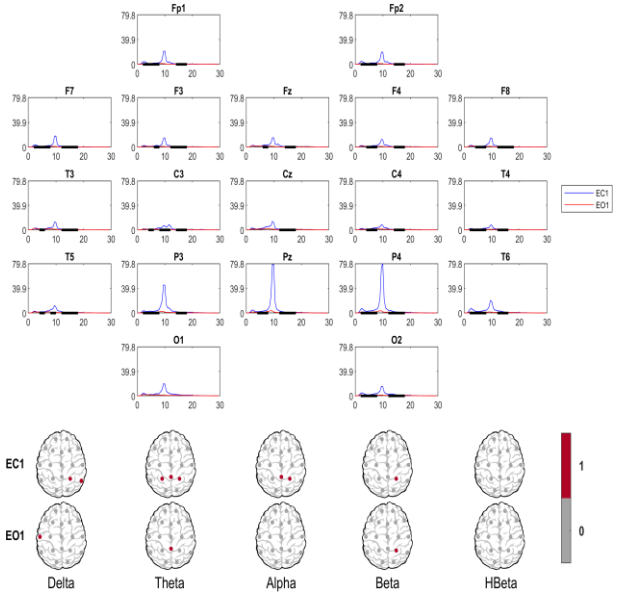


Frontal APF= 09.92

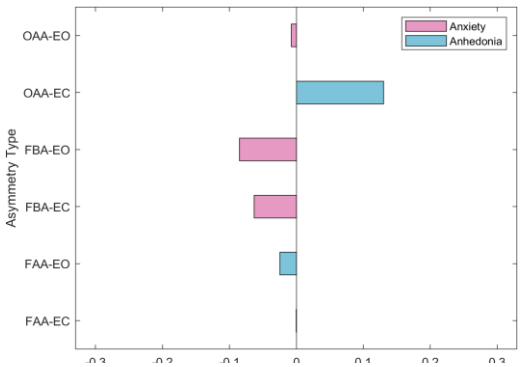
Posterior APF= 10.00

EEG Spectra

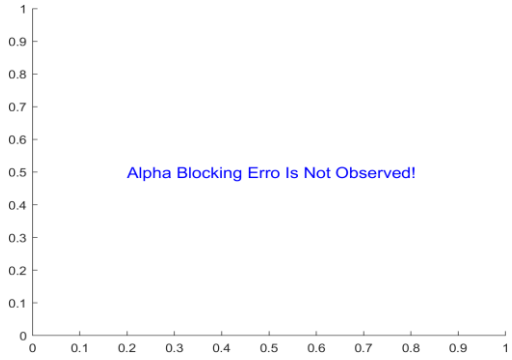




Alpha Asymmetry(AA)



Alpha Blocking



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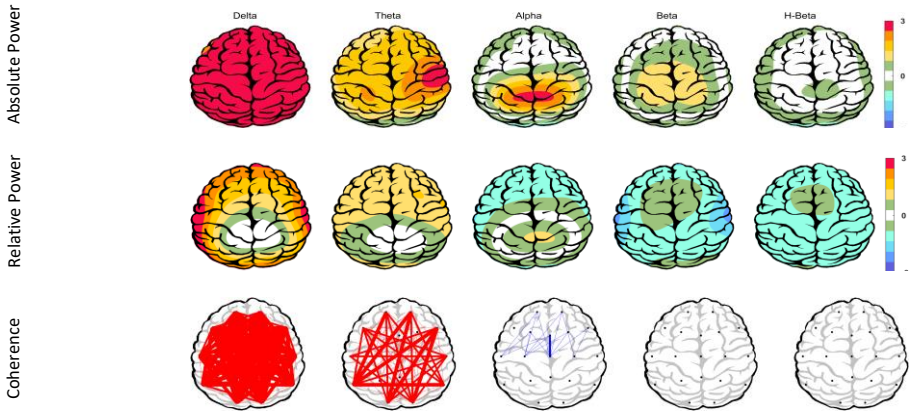
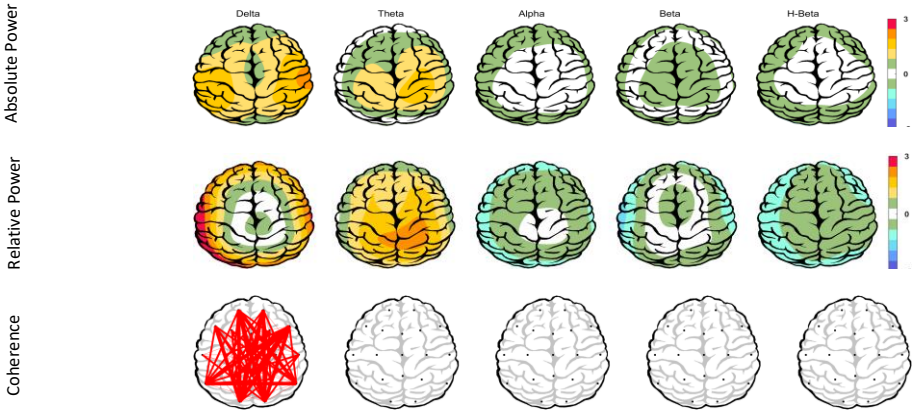
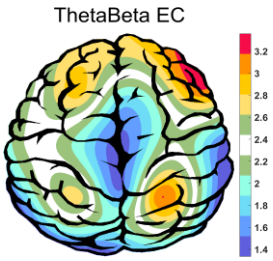
Z Score Summary Information (EC)

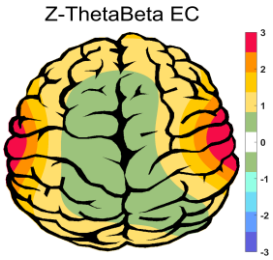


Z Score Summary Information (EO)

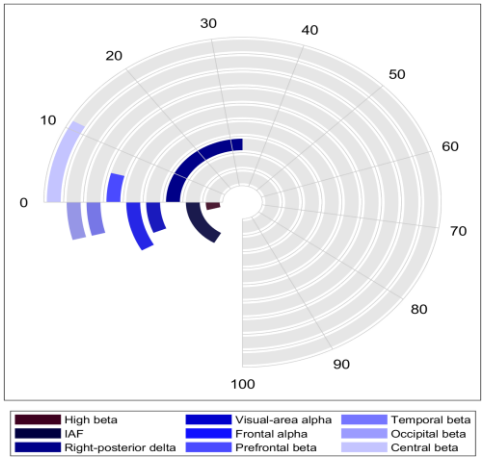


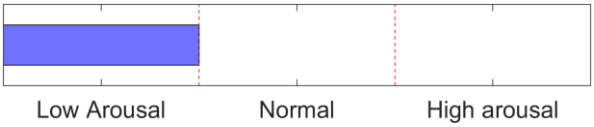
E.C.T/B Ratio (Raw- Z Score)



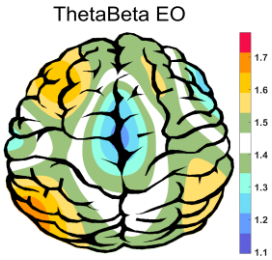


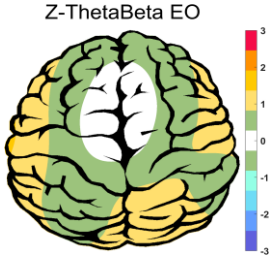
Arousal Level





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





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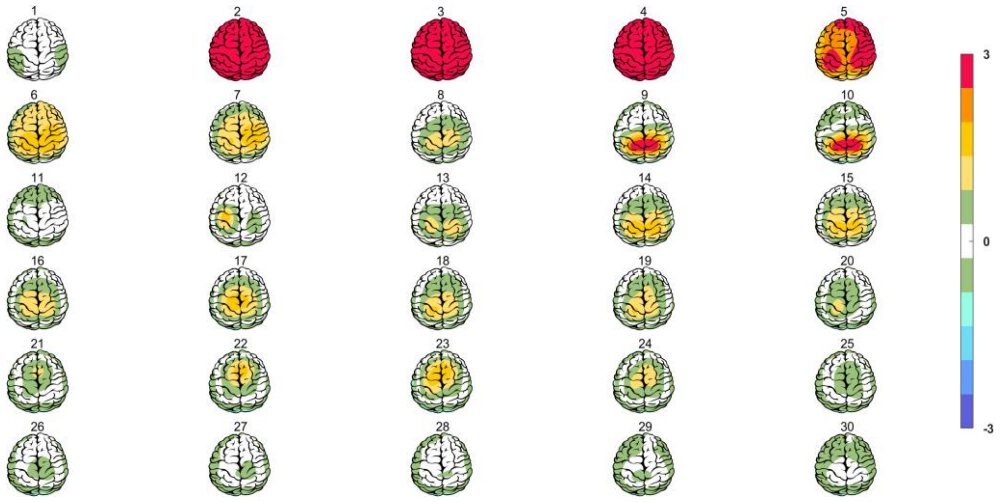
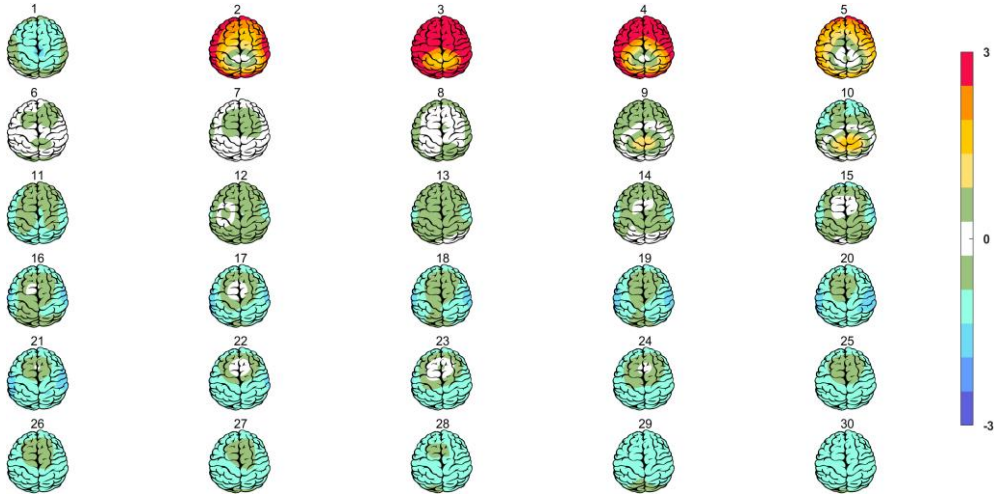
Absolute Power-Eye Closed (EC)



Relative Power-Eye Closed (EC)



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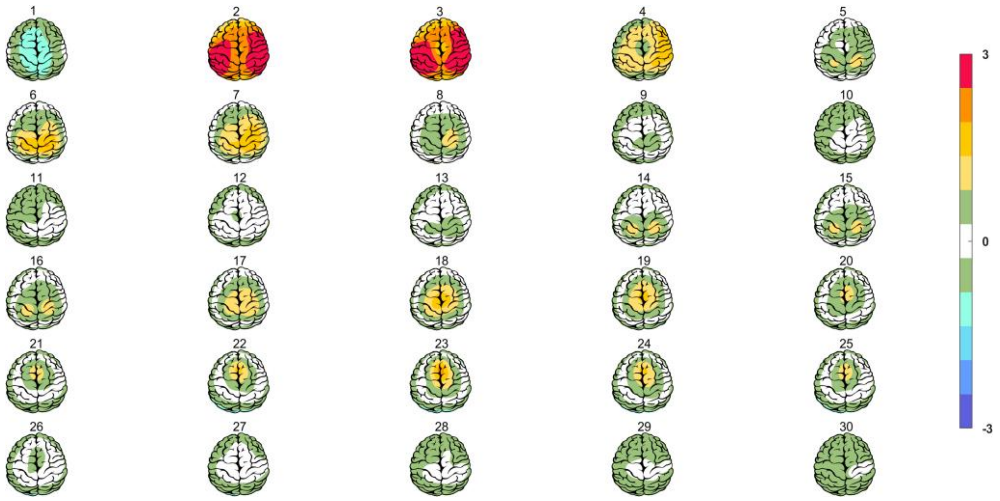
Absolute Power-Eye Open (EO)



Relative Power-Eye Open (EO)