The Changes in the Absolute Total Power of the Faradarmangars' Brain During, Before, and After the Use of the Faradarmani Consciousness Field

Mohammad Ali Taheri[1], Sara Torabi[2], Farid Semsarha[3*]

1. Sciencefact R&D Department, Cosmointel Inc. Research Center, Ontario, Canada
2. Department of Plant Biology, School of Biology, College of sciences, University of Tehran, Tehran, Iran
3.Institute of Biochemistry and Biophysics (IBB), University of Tehran, Tehran, Iran

* Corresponding author: Farid Semsarha Ph.D., Institute of Biochemistry and Biophysics (IBB), University of Tehran, P.O. Box: 13145-1384, Tehran, Iran
Tel.: +98-9121786577
Email: Semsarha@ut.ac.ir

DOI: https://doi.org/10.61450/joci.v4i19.224

Abstract

Based on Taheri's theory, the Faradarmani Consciousness Field is a non-physical field introduced as a complementary therapy. The effect of this field is initiated by a trained individual, known as a *Faradarmangar*, through a brief moment of focused attention. Changes in brain activity under the influence of Faradarmani have attracted the interest of researchers in this field. Previously, the brain activity of *Faradarmangars* was evaluated using an EEG device with 16 electrodes. The aim of this study was to investigate the absolute total power of a *Faradarmangar*'s brain using a 128-channel electroencephalograph cap in 32 adult participants. Absolute total power reflects the overall electrical activity of the brain and the direct response of the system under study. The results showed that power was reduced to varying degrees across different channels. Moreover, the average reduction in total brain power among the studied population was approximately 24% at the points of highest contrast across the channels.

Keywords: Brain electrical activity, Total absolute power, Electroencephalography

Introduction

Electroencephalogram (EEG) is an essential tool for studying the brain's electrical activity. The electrical properties of the brain were first discovered by an English scientist named Richard Caton in 1875, and about 50 years later, Hans Berger, a German psychiatrist, recorded the first human EEG (Haas, 2003; Tudor et al., 2005). EEG records the cumulative electrical activity of a population of nerve cells called pyramidal cells, measured using electrodes placed on the scalp and graphed over time. This electrical activity is an alternating current that fluctuates between positive and negative, depending on various factors, including changes in the permeability of the cell membrane caused by excitatory or inhibitory inputs from other neurons.

Several studies have demonstrated that mental practices such as meditation and mindfulness can lead to measurable changes in brain electrical activity. EEG studies have shown that meditation is associated with increased alpha and theta oscillations, reflecting states of relaxation and focused attention (Cahn and Polich, 2006). Similarly, mindfulness practices have been linked to enhanced frontal midline theta and alpha activity, indicating changes in attention and awareness (Lomas et al., 2015). These findings suggest that non-physical factors, particularly those related to mental states, can influence neural activity.

Furthermore, absolute total power serves as a comprehensive measure of the brain's electrical activity, reflecting the overall level of cortical engagement across all frequency bands (Tan et al., 2024). This parameter is frequently used in studies investigating consciousness, and the impact of non-invasive interventions such as meditation and neurofeedback (Lutz et al., 2004; Hammond, 2005; Chennu et al., 2014)

Based on Taheri's theory, there are various T-Consciousness Fields (TCFs), which are subcategories of the Cosmic Consciousness Network (CCN). The Faradarmani Consciousness Field is one of these non-physical fields. In this approach, these fields can be utilized by humans. In fact, information transmitted from TCFs can induce alterations in the subject under study. This hypothesis has been examined in a series of experiments, ranging from studies on plants and animals to material studies (Taheri et al., 2021; Torabi et al., 2023; Taheri et al., 2024).

The effect of the Faradarmani Consciousness Field (FCF) is initiated through a brief attention to this field. Unlike meditation or mindfulness, Faradarmani does not involve breathing control, visualization, or bodily focus, and requires no training or practice by the recipient. In other words, what induces an alteration under the influence of Faradarmani is attributed to the transmitted information from this field, not to the intervention of individuals.

Previous studies have reported an increase in gamma wave power and enhanced activity in brain regions associated with memory, attention, perception, and the default mode network under the influence of Faradarmani Consciousness Field (Taheri et al., 2022). However, the direct influence of T-Consciousness Fields on the brain's electrical behavior, as an immediate system response, and the timing of this effect by determining time intervals from the onset of the connection with the field have not yet been investigated. In the present study, absolute total power was utilized to assess the brain's general response to the Faradarmani Consciousness Field, allowing for a system-level evaluation of the influence of this non-physical treatment.

Method

Forty-four healthy adult participants (mean age: 41 ± 7 years), none of whom had used any neurological or psychiatric medications in the six months prior to the test day, were included in the study group. Of these participants, 41% were male (n=18) and 59% were female (n=26). The Faradarmani Consciousness Field treatment was initiated by the participants themselves at a predetermined time (upon hearing a soft beep sound from the computer system located

on the desk in front of the seating area). In this study, a task referred to the action in which Faradarmangars personally initiated a connection with the Cosmic Consciousness Network. The study was approved by the Ethics Committee of Iran University of Medical Sciences (Approval ID: IR.IUMS.REC.1402.940).

The time intervals were defined as follows:

1. Rest 1: In this stage, the trained participants, referred to as *Faradarmangars*, were asked not to engage any type of T-Consciousness Fields and to remain simply relaxed and tension-free. The aim of this stage was to collect baseline data for each individual as a control before applying the FCF, which is useful for creating a collective control dataset.

2. Task: At the beginning of Rest 1, upon hearing the sound of a horn, predefined before the experiment, the participants initiated their connection with the FCF, marking the beginning of Task 1. In fact, the task involved a continuous connection for 10 minutes. During this stage, data was continuously collected from the participants' brains. In the analysis phase, the data was examined both as a whole and in three equal, consecutive intervals, referred to as Task 1, Task 2, and Task 3. The purpose of this segmented analysis was to evaluate how the FCF affects the brain over time.

3. Rest 2: Another three-minute stage followed, during which the participants disengaged from their connection with the FCF upon hearing the second horn sound, as defined prior to the experiment. Similar to Rest 1, they remained relaxed and tension-free without using the FCF.

EEG data acquisition

The participants' brain electrical activity was recorded at the National Brain Mapping Laboratory (NBML) of Iran using the g.tec g.HIamp system (g.tec, Graz, Austria) with a 128-channel cap equipped with passive Ag/AgCl electrodes. The electrodes were evenly distributed across the scalp based on the international 10/20 system for electrode placement. The ground electrode was placed on the forehead, and the online reference was positioned on the right earlobe. Data was recorded with a sampling frequency of 512 Hz, and impedance was maintained below 10 kΩ.

Data Processing

The EEG data were preprocessed using the EEGLAB (Delorme and Makeig, 2004) and FieldTrip (Oostenveld et al., 2011) toolboxes for MATLAB (MATLAB R2016a, The MathWorks, Inc., Natick, MA, USA). High-pass filters (with a cutoff frequency of 2 Hz) and band-stop filters (to remove 50 Hz line noise and its harmonic frequencies) were applied to the raw data. The data were re-referenced to the common average reference, and artifacts were manually rejected through visual inspection using EEGLAB. Independent Component Analysis (ICA) was performed to remove artifact-related components (e.g., head and eye movements, heartbeat, and muscle tone). The preprocessed data, containing minimal artifacts, were segmented into different rest and task phases according to the study design. FieldTrip was then used for further EEG data processing.

Data analysis

Descriptive statistical analysis, frequency distribution analysis, and chart plotting were performed using GraphPad software version 9. Entropy calculations were carried out using SPSS software version 28. Differences between time-based populations were analyzed using two-way ANOVA. A p-value threshold of 0.05 was considered for significance; any change with a p-value less than this threshold was regarded as statistically significant, while changes above this value were considered non-significant (ns).

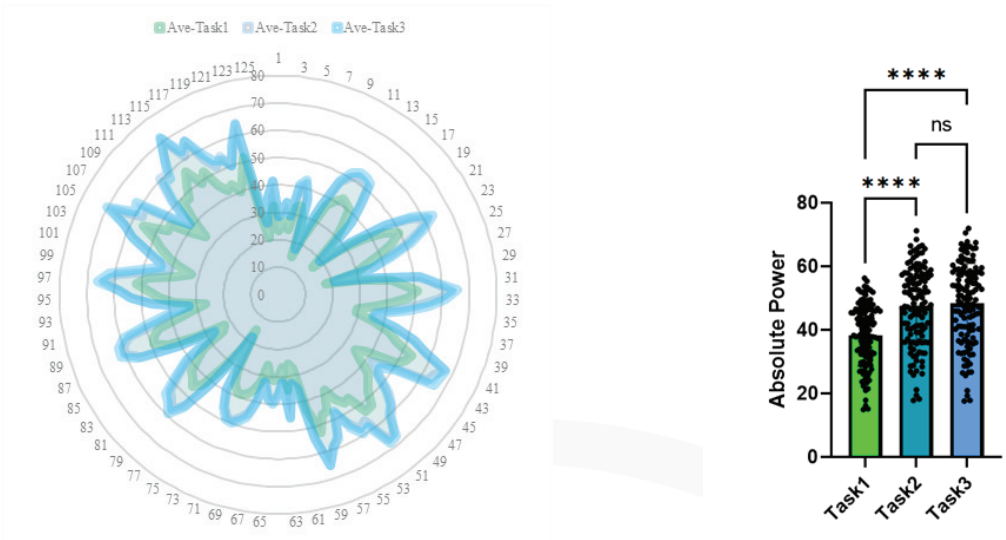

Figure 1. (Left) Radar chart illustrating the average absolute total power across different channels in the study population, segmented into three consecutive time intervals during the task phase. (Right) Statistical comparison of the population data obtained from the channels across the three analyzed segments of the task. ****: p-value < 0.0001.

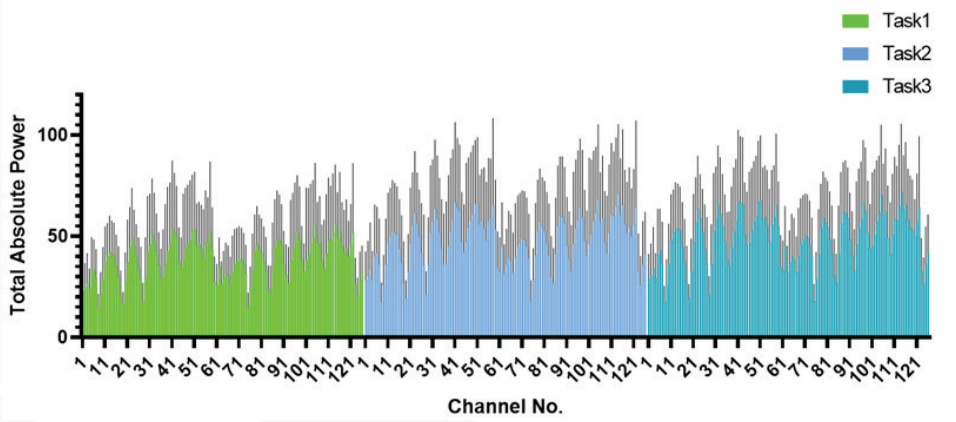

Figure 2. Illustration of the recorded absolute total power across the three consecutive task phases.

As shown in Figure 1, when comparing the absolute total power across all 128 channels, calculated as the average of this parameter for the entire study population, Task 1 exhibits a statistically significant difference from the subsequent two tasks. In contrast, Tasks 2 and 3 do not show significant differences from each other at the population level. The comparison between Task 1 and the other two tasks clearly demonstrates a reduction in absolute total power across the population. This finding, also illustrated in Figure 2 (showing changes along with standard deviations across all channels), reflects a noticeable effect of the Faradarmani Consciousness Field on brain power, specifically as a consistent decrease during the first 3 minutes of the connection. Subsequently, this reduction was further analyzed statistically across individual channels. Only the channels that showed significant differences between Task 1 and Task 2 (Table 1), and between Task 1 and Task 3 (Table 2) are included in the corresponding tables.

Table 1. Display of channels with significant differences in the contrast between Task 1 and Task 2, based on Tukey's statistical analysis in the two-way ANOVA test.

Channel No.	Mean Diff.	Summary	Adjusted p-value	Channel No.	Mean Diff.	Summary	Adjusted p-value
22	-7.904	*	0.0287	80	-8.002	*	0.0241
23	-8.94	**	0.004	81	-7.717	*	0.04
24	-8.385	*	0.0118	87	-8.106	*	0.0199
31	-8.767	**	0.0056	88	-8.543	**	0.0087
32	-9.485	**	0.0013	89	-8.559	**	0.0085
33	-8.53	**	0.009	90	-8.127	*	0.0192
34	-7.823	*	0.0332	95	-7.604	*	0.0486
39	-8.172	*	0.0176	96	-8.931	**	0.0041
40	-9.33	**	0.0018	97	-9.638	***	0.0009
41	-10.1	***	0.0003	98	-8.298	*	0.0139
42	-9.373	**	0.0016	103	-9.32	**	0.0018
43	-10.16	***	0.0003	104	-10.09	***	0.0003
46	-7.847	*	0.0318	105	-10.26	***	0.0002
47	-9.202	**	0.0023	106	-8.397	*	0.0116
48	-9.769	***	0.0007	107	-8.936	**	0.004
49	-10.59	***	0.0001	110	-8.37	*	0.0122
50	-11.25	****	<0.0001	111	-10.67	****	<0.0001
51	-11.2	****	<0.0001	112	-10.23	***	0.0003
52	-7.739	*	0.0384	113	-11.27	****	<0.0001
53	-8.71	**	0.0063	114	-13.28	****	<0.0001
54	-8.178	*	0.0174	115	-9.861	***	0.0006
55	-7.601	*	0.0488	116	-10.74	****	<0.0001
56	-9.669	***	0.0009	117	-8.552	**	0.0086
57	-10.58	***	0.0001	118	-7.733	*	0.0388
58	-11.1	****	<0.0001	119	-9.254	**	0.0021
59	-8.04	*	0.0225	120	-8.148	*	0.0184
62	-7.755	*	0.0373	121	-8.639	**	0.0072
79	-8.245	*	0.0154	122	-10.88	****	<0.0001

Table 2. Display of channels with significant differences in the contrast between Task 1 and Task 3, based on Tukey's statistical analysis in the two-way ANOVA test.

Channel No.	Mean Diff.	Summary	Adjusted p-value	Channel No.	Mean Diff.	Summary	Adjusted p-value
14	-10.45	*	0.0308	107	-12.99	***	0.0007
15	-10.21	*	0.0423	113	-12.1	**	0.0028
22	-10.47	*	0.0298	114	-15.01	****	<0.0001
23	-12.07	**	0.003	115	-13.06	***	0.0006
24	-11.68	**	0.0054	116	-11.68	**	0.0053
25	-10.43	*	0.0314	117	-11.56	**	0.0064
31	-10.94	*	0.0157	118	-10.38	*	0.0335
32	-12.89	***	0.0008	121	-11.36	**	0.0086
33	-12.06	**	0.003	122	-11.5	**	0.007
34	-12.25	**	0.0022				
41	-12.17	**	0.0025				
42	-12.81	***	0.0009				
43	-14.24	****	<0.0001				
44	-11.02	*	0.0141				
48	-10.36	*	0.0348				
49	-10.58	*	0.0256				
50	-13.26	***	0.0004				
51	-13.44	***	0.0003				
52	-11.36	**	0.0086				
53	-11.81	**	0.0044				
57	-12.21	**	0.0024				
58	-11.82	**	0.0044				
59	-10.08	*	0.0498				
79	-11.28	**	0.0096				
80	-10.93	*	0.0158				
81	-10.63	*	0.024				
87	-10.32	*	0.0365				
88	-11.52	**	0.0068				
89	-11.7	**	0.0052				
90	-11.77	**	0.0047				
91	-10.55	*	0.0268				
97	-12.76	**	0.001				
98	-12.16	**	0.0026				
99	-11.3	**	0.0093				
104	-11.43	**	0.0077				
105	-13.46	***	0.0003				
106	-12.62	**	0.0012				

Comparison of the total absolute power across the entire population at all test intervals

After evaluating the tasks in the previous section, the current section presents an analysis of all the time segments of this study together.

As shown in Figure 3, Rest 1 demonstrates the highest absolute total power predominantly in the approximate range of channels 37 to 57 and 95 to 120. On the other hand, Tasks 2 and 3 exhibit dominant absolute total power across a greater number of channels (3–37; 65–95).

Additionally, Rest 2 shows increased absolute total power—though not higher than Rest 1, but comparable to it—in channels 57–65 and 117–126. When the data presented in Figure 3 are analyzed at the channel level, a clearer and more precise understanding of Rest 2's performance emerges.

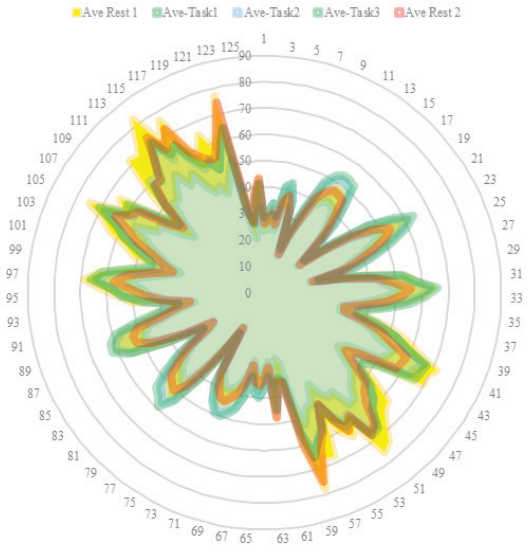

Figure 3. Illustration of the recorded absolute total power across all test intervals in the population.

Table 3. Display of channels with significant differences in pairwise comparisons of absolute total power across all test intervals, based on Tukey's statistical analysis in the two-way ANOVA test.

Rest1 — Task1				Rest1 – Task2			
Channel No.	Mean Diff.	Summary	Adjusted p-value	Channel No.	Mean Diff.	Summary	Adjusted p-value
43	21.75	*	0.0313	122	17.5	*	0.0362
47	21.43	*	0.0384		Task1 — Rest2		
50	22.25	*	0.0226	51	-17.17	*	0.0166
51	23.58	**	0.0092	53	-18.35	**	0.0056
52	25.46	**	0.0024	57	-19.01	**	0.0030
57	24.56	**	0.0046	58	-26.55	****	<0.0001
58	23.25	*	0.0115	59	-19.00	**	0.0030
59	28.8	***	0.0002	113	-16.49	*	0.0298
106	21.52	*	0.0362	114	-20.97	***	0.0004
112	26.38	**	0.0012	115	-20.00	**	0.0011
113	25.24	**	0.0028	116	-23.64	****	<0.0001
114	26.59	**	0.001	117	-18.71	**	0.0040
115	29.72	****	<0.0001	118	-18.87	**	0.0034
116	22.37	*	0.021	120	-17.22	*	0.0158
117	26.85	***	0.0008	121	-20.73	***	0.0005
120	23.63	**	0.0089	122	-26.42	****	<0.0001
121	21.36	*	0.04		Task2 — Rest2		
122	21.01	*	0.0497	58	-15.45	*	0.0170
123	28.38	***	0.0002	122	-15.54	*	0.0154

As shown in Table 3, significant differences at the channel level and in the specified contrasts lead to the following multiple conclusions:

1. In the comparison between Rest 1 and the Tasks, it is revealed that the channels contributing to the difference with Task 1 (19 out of 128 channels) indicate a connection with the Field. Only one of these channels (channel 122) showed a significant difference in the contrast with Task 2, and there was no significant difference between Rest 1 and Task 3.

2. In the contrast between Rest 2 and Task 1, 14 out of the same 19 channels (equivalent to 74%) showed a significant difference, indicating that Rest 2 reflects the disconnection from the Faradarmani Consciousness Field in terms of absolute total power across the population. In the contrast between Task 2 and Rest 2, channels 58 and 122 appear to be particularly indicative of this effect.

Comparison of brain activity before and after the application of the Faradarmani Consciousness Field (Rest 1 and Rest 2)

Rest 1 refers to the stage before the application of Faradarmani, while Rest 2 refers to the period after 10 minutes of exposure to the field and the subsequent announcement of its termination, lasting for three minutes.

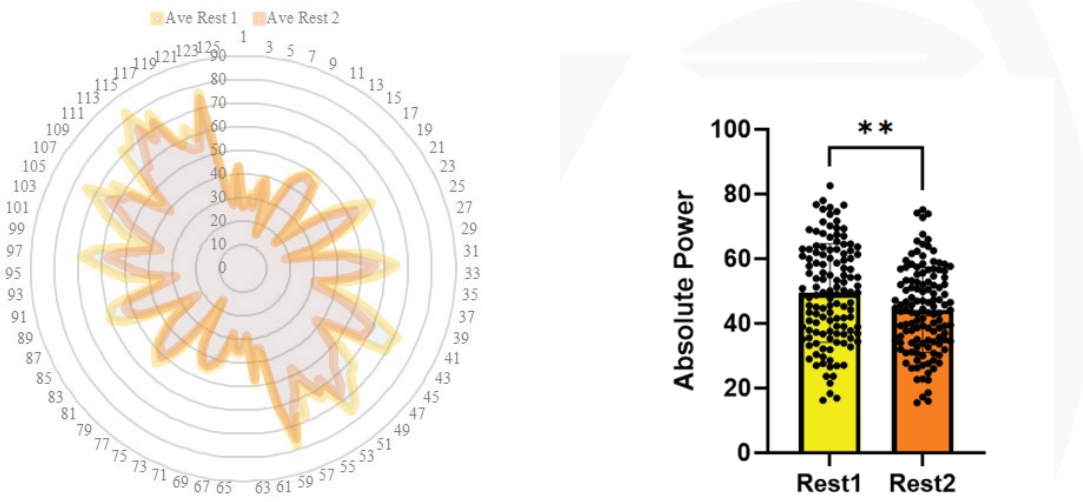

Figure 4. (Left) Radar chart showing the average total absolute power across different channels in the study population during Rest 1 and Rest 2. (Right) Statistical comparison of the population data obtained from the channels between the two rest states. p-value < 0.0039.

Despite the analysis in the previous section indicating that Rest 2 reflects the disconnection from the field, Figure 4 shows a noticeable difference between Rest 1 and Rest 2, with the total absolute power in the population during Rest 2 being lower than in Rest 1. This suggests that the diminishing effects of the Faradarmani connection may persist for up to 15 minutes after its initiation. While this observation may reflect a form of residual effect or memory, clear signs of termination are still evident, particularly in the channels identified in the previous section.

To gain a more precise understanding of the changes induced by the Faradarmani Consciousness Field, four cases with threshold-level values were selected. As shown in Figure 5, different patterns of behavior can be observed. In one case, the absolute power during Rest 2 is lower than in Rest 1, while in another case, the opposite is true. In one instance, the values of the two rest states are nearly identical, whereas in another, the comparison of absolute power between the two rest states across corresponding channels shows a varied increase in power. Notably, in the case where Rest 2 shows a decrease compared to Rest 1, the power levels in most channels range

between 100 and 200, whereas in the case with an increase in Rest 2, the values rise from around 30–40. From these observations, a key takeaway appears to be that, in addition to the absolute total power serving as an indicator of the Consciousness Field's effect, the brain's power adjustments (as a system influenced by the Faradarmani Consciousness Field) following the termination of the connection are also noteworthy and supported by the data. In other words, the observed variations suggest that the Faradarmani Consciousness Field may apply changes based on the individual's specific needs.

Figure 5. Radar chart showing the average total absolute power across different channels in the study population during Rest 1 and Rest 2 in four cases.

Analysis of brain activity in cases at different stages of the task

Analyzing the stages of the task in selected cases, alongside the population-level analysis presented above, can offer deeper insight into the effects of Faradarmani at the brain level.

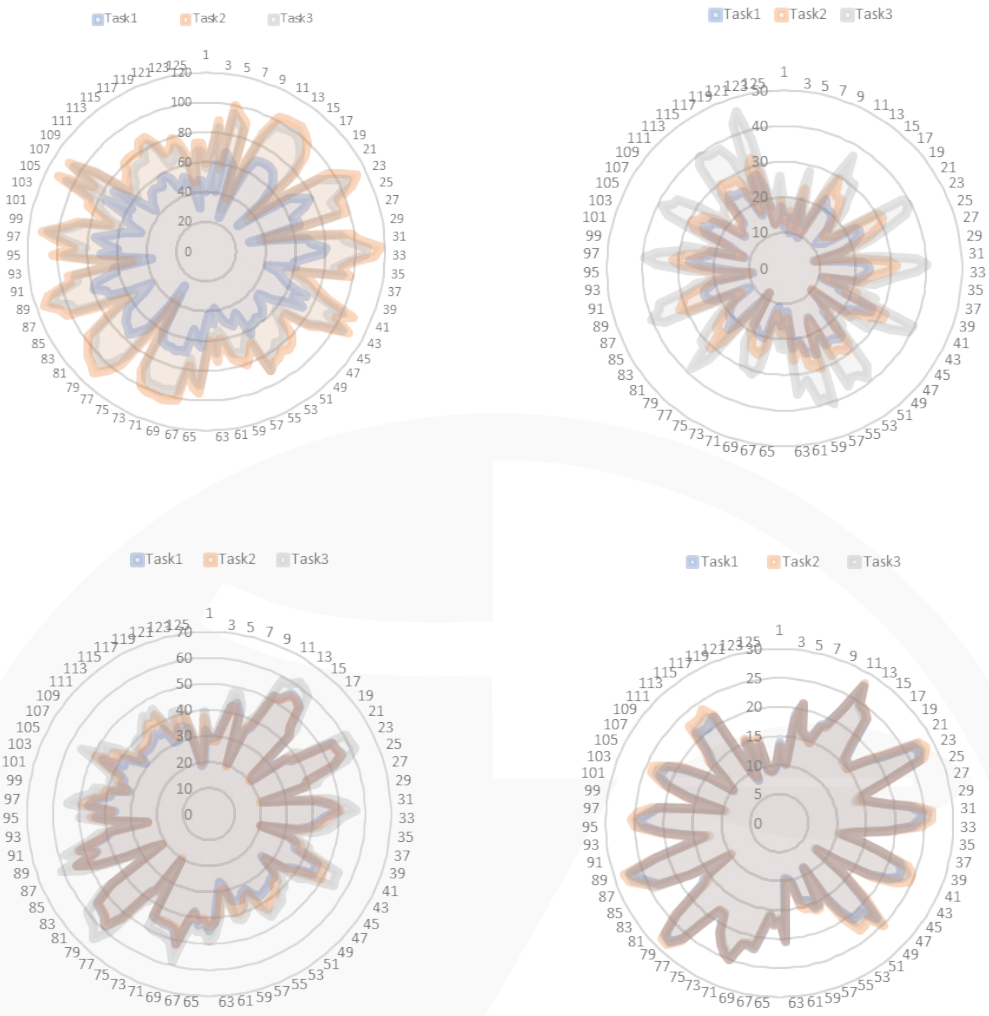

Figure 6. Radar chart showing the average total absolute power across different channels in the study population at various stages of the task in four cases.

As shown in Figure 6, Task 1 exhibits a decrease in absolute power, reaching a range of approximately 20–80. This reduction in absolute power, compared to the Rest state or Tasks 2 and 3, not only indicates the effect of the T-Consciousness Field but also represents an approach to brain modulation and power regulation within a specific range during the connection.

Analysis of brain activity in cases at the onset of the Faradarmani Consciousness Field application compared to the pre-application state

Continuing the analysis of brain activity in the cases, the contrast between Rest 1 and Task 1 is also noteworthy. In line with previous comparisons, this contrast reflects the regulation of absolute power within a specific range as a result of the Faradarmani Consciousness Field treatment, indicating the purposeful effect of this field (Figure 7).

Figure 7. Radar chart showing the average total absolute power across different channels in the comparison between Rest 1 and Task 1 in six cases.

Analysis of brain activity across all stages of the study in the cases

Analyzing all the time segments of this study together provides additional evidence of the effect of the Faradarmani Consciousness Field on the brain's absolute power over time. As observed, Task 3 and Rest 2 act as enhancers of approximately 100% power compared to Rest 1 for Case 1 (below 30), while for Cases 2 and 3, the effect is the complete opposite (Figure 8).

Figure 8. Radar chart showing the average total absolute power across different channels in the comparison of all stages in three cases.

Average percentage change in total absolute power in the study population in contrast with the most significant channel (Task 1 – Rest 1)

Following the population-level analysis, the examination of channels across different contrasts and the related cases, the average percentage change across all channels serves as a notable metric for the preliminary assessment of the Faradarmani Consciousness Field's effect on brain power. As shown in Figure 9, despite varying levels of reduction across different channels, the average decrease in absolute brain power across the population and channels is approximately 24%.

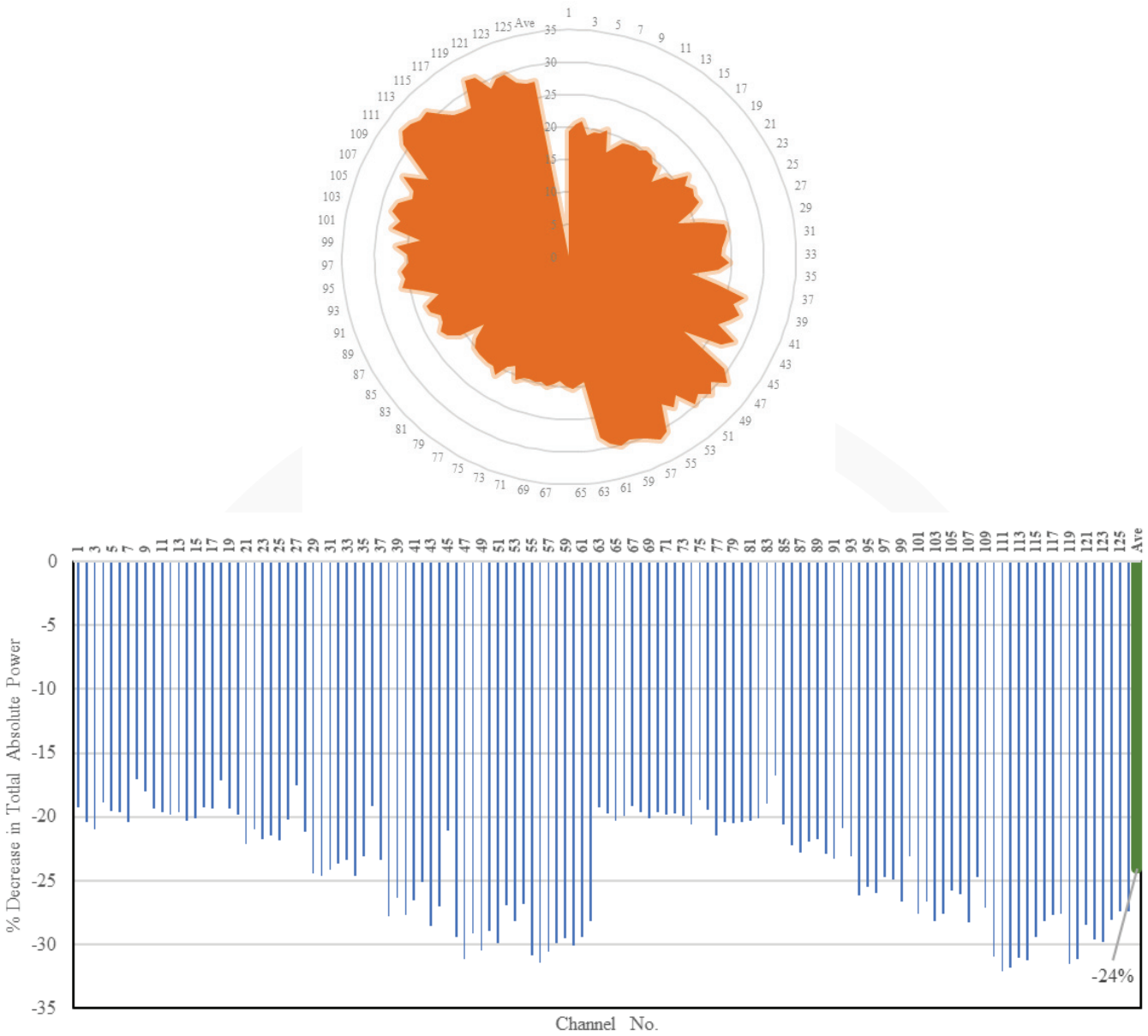

Figure 9. Radar chart (top) and bar chart (bottom) showing the average reduction in total absolute power across different channels in the study population in the comparison between Rest 1 and Task 1.

Acknowledgment

Authors would like to acknowledge the Iranian National Brain Mapping Laboratory (NBML), Tehran, Iran, for providing data acquisition service for this research work.

References

Cahn, B. R., & Polich, J. (2006). Meditation states and traits: EEG, ERP, and neuroimaging studies. *Psychological bulletin*, *132*(2), 180–211. https://doi.org/10.1037/0033-2909.132.2.180

Chennu, S., Finoia, P., Kamau, E., Allanson, J., Williams, G. B., Monti, M. M., Noreika, V., Arnatkeviciute, A., Canales-Johnson, A., Olivares, F., Cabezas-Soto, D., Menon, D. K., Pickard, J. D., Owen, A. M., & Bekinschtein, T. A. (2014). Spectral signatures of reorganised brain networks in disorders of consciousness. *PLoS computational biology*, *10*(10), e1003887. https://doi.org/10.1371/journal.pcbi.1003887

Delorme, A., & Makeig, S. (2004). EEGLAB: an open source toolbox for analysis of single-trial EEG dynamics including independent component analysis. *Journal of neuroscience methods*, *134*(1), 9–21. https://doi.org/10.1016/j.jneumeth.2003.10.009

Haas L. F. (2003). Hans Berger (1873-1941), Richard Caton (1842-1926), and electroencephalography. *Journal of neurology, neurosurgery, and psychiatry*, *74*(1), 9. https://doi.org/10.1136/jnnp.74.1.9

Hammond, D. C. (2005). Neurofeedback treatment of depression and anxiety. *Journal of Adult Development*, *12*(2), 131-137. https://doi.org/10.1007/s10804-005-7029-5

Lomas, T., Ivtzan, I., & Fu, C. H. (2015). A systematic review of the neurophysiology of mindfulness on EEG oscillations. *Neuroscience and biobehavioral reviews*, *57*, 401–410. https://doi.org/10.1016/j.neubiorev.2015.09.018

Lutz, A., Greischar, L. L., Rawlings, N. B., Ricard, M., & Davidson, R. J. (2004). Long-term meditators self-induce high-amplitude gamma synchrony during mental practice. *Proceedings of the National Academy of Sciences of the United States of America*, *101*(46), 16369–16373. https://doi.org/10.1073/pnas.0407401101

Oostenveld, R., Fries, P., Maris, E., & Schoffelen, J. M. (2011). FieldTrip: Open source software for advanced analysis of MEG, EEG, and invasive electrophysiological data. *Computational intelligence and neuroscience*, *2011*, 156869. https://doi.org/10.1155/2011/156869

Taheri, M. A., Modarresi-Asem, F., & Semsarha, F. (2022). An Investigation of the Electrical Activity of the Brain during the Treatment with Faradarmani Consciousness Field in the Faradarmangar Population. *The Scientific Journal of Cosmointel, 1*(2), 22–32. https://doi.org/10.61450/joci.v1i2.19

Taheri, M. A., Payervand, F., Ahmadkhanlou, F., Yazdanparast, R., Torabi, S., & Semsarha, F. (2021). Investigation of the Effect of Consciousness Fields on the Mechanical Properties of Materials. *Available at SSRN 3955533*. https://ssrn.com/abstract=3955533

Taheri, M. A., Torabi, S., Nabavi, N., & Semsarha, F. (2024). Influence of Faradarmani Consciousness Field on Spatial Memory and Passive Avoidance Behavior of Scopolamine Model of Alzheimer Disease in Male Wistar Rats. *The Scientific Journal of Cosmointel*, *3*(15), 25–36. https://doi.org/10.61450/joci.v3i15.197

Tan, E., Troller-Renfree, S. V., Morales, S., Buzzell, G. A., McSweeney, M., Antúnez, M., & Fox, N. A. (2024). Theta activity and cognitive functioning: Integrating evidence from resting-state and task-related

developmental electroencephalography (EEG) research. *Developmental cognitive neuroscience*, *67*, 101404. https://doi.org/10.1016/j.dcn.2024.101404

Torabi, S., Taheri, M. A., & Semsarha, F. (2023). Alleviative effects of Faradarmani Consciousness Field on Triticum aestivum L. under salinity stress. *F1000Research*, *9*, 1089. (https://doi.org/10.12688/f1000research.25247.4)

Tudor, M., Tudor, L., & Tudor, K. I. (2005). Hans Berger (1873-1941)--the history of electroencephalography. *Acta medica Croatica: casopis Hravatske akademije medicinskih znanosti*, *59*(4), 307-313.