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Transmissibility of microwaves to ELF waves compatible to brain rhythms

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ABSTRACT

Brain function can be affected by electromagnetic waves having very long wave length if the frequency is kept very low. There is no known means of shielding such disturbances that happen to coincide with the frequency range of the brain waves.

The quality of wave transmissibility determines the sustainability the threshold and the time span of waveform lock-on. A postulate is proposed for assessing the permanent set and lock-on time.

A transmissibility constant b is defined in accordance with the surface energy density SED_{ELF} related to the extreme low frequency (ELF) waves. The SED_{ELF} for the gamma, beta, alpha, theta and delta waves at their average frequencies is found to dwell in a very *narrow band* for microwave frequency in the range of 1000–2400 MHz. The band width is negligibly small up to 1800 MHz, after which the SED_{ELF} increased only 15 mW/cm^2 at 2400 MHz. Approximately the same SED_{ELF} for all the five brain waves can be used at each microwave frequency within the range mentioned earlier. The transmissibility constant b varied from 2.2×10^{-16} to 5.0×10^{-21} mW(μV)^2/cm^2. The five orders of magnitude change in b is indicative of its capability to cover an extremely wide range of transmission of thousands of MHz to a few Hz. Brain waves are most vulnerable to artificial alterations in the range of 6–10 Hz. This work explores the quality of wave transmissibility by using ELG and EEG (electroencephalography) data on brain waves.

1. Introduction

The brain is said to function electromagnetically by waves originated from above the beneath the earth. From above, the earth is engulfed by magnetic flux emerging continuously from the South pole and descending into the North pole. Acting as a shield 100 km above earth is a layer of electrically charged particles (ECP) to protect the earth from solar winds. This layer is the *Ionosphere* that acts like an electromagnetic-wave conductor. Additional electrical activity is created in the atmosphere by multiple lightning storms. These disturbances are known as ‘‘*The Schumann Resonance*’’ [1] with the current registering at 7.8 Hz. They are quasi-standing waves with extremely low frequency (ELF) that exist in the space between the ‘‘ground and the Ionosphere’’. *They are dubbed as the ''earth brainwaves'' that are identical to the frequency spectrum of the human brainwaves*. By nature, the brainwaves are constantly bombarded by these electromagnetic disturbances and they can alter the DNA in ways that are not yet known. Off more immediate concern is the assessment of the short term effects.

Beneath the earth are the sixty-four elements of the ground modulate. They generate the geomagnetic waves coming from the ground. The earth's ‘‘brain rhythm’’ from above interact with those from below. It is a balancing act encountering constant human interference. The ground minerals are the same as those found in red blood corpuscles. A natural relation exists between the blood and geomagnetic waves. An imbalance between the Schumann [1] and geomagnetic waves can disrupt these biorhythms. These geomagnetic waves are being replaced by artificially created low frequency (LF) ground waves coming from the Ground Wave Emergency Network (GWEN) [3] Towers. The GWEN transmitters placed 320 km apart across the US allow the magnetic field to be altered to specific frequencies. They operate in the low frequency (LF) range, with transmissions between LF of 150 and 175 kHz. They also emit waves from the upper very high frequency (VHF) to the lower ultra high frequency (UHF) range of 225–400 MHz. The LF signals travel by waves that hug the ground rather than radiating into the atmosphere. A GWEN station transmits in a 360 degree circle up to 480 km. The signal drops off sharply with distance. The US is bathed in this magnetic field which can rise from ground up to 150 m, but goes down into basements such that

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everyone can be affected and mind-controlled. The entire artificial ground-wave has spread out over the US like a web. It is easier to mind-control and hypnotize people who are bathed in an artificial electromagnetic-wave. Some of the functions of GWEN may include controlling the weather, the mind and the behavior & mood. Least but not all, synthetic-telepathy can send infrasound to victims with US government mind-control implants.

There is also the High-Frequency Active Auroral Research Program (HAARP) [2] making use of the Alaskan transmitter that can heat up part of the Ionosphere which in turn bounces power into the atmosphere. ELF waves produced from HAARP, when targeted on selected areas, can weather-engineer and create mood changes affecting millions of people. The intended wattage is 1700 billion watts of power. GWEN can work together with HAARP to emit enormous energy into the atmosphere that may have caused major floods of the US Mid-West in 1993 [3]. Clinical research [4] has also shown that ELF fields of 6.67 Hz, 6.26 Hz and lower tend to produce symptoms of confusion, anxiety, depression, tension, fear, mild nausea and headaches, cholinergia, arthritic-like aches, insomnia, and many other undesirable effects. Electromagnetic oscillations of 7.8, 8.0 and 9 Hz can produce anxiety-relieving and stress-reducing effects mimicking some "meditative" states. Analytical studies of EEG brain rhythms mimicked by sinusoidal waves was also studied in [5,6].

The motivation for this work on the transmissibility of microwaves cannot be divorced from the implications associated with the misuse of the technology. The objective here is not to advance the technology for sending artificial brain-like waves for mind-control, but rather to be better prepared on preventive measures.

2. Ballpark master surface energy density template

A ballpark master surface energy density can be developed from the data in Table 1, which was regarded as ballpark figures. There is no claim on the originality of this information, but rather as common knowledge.

Table 1
Data of ELF surface energy density versus mega Hertz.

Microwave	SED_{ELF} (mW/cm^2)[a]	Freq. (MHz)
Point 1	5	900
Point 2	50	1000
Point 3	100	2000

[a] One watt = 1000 mW.

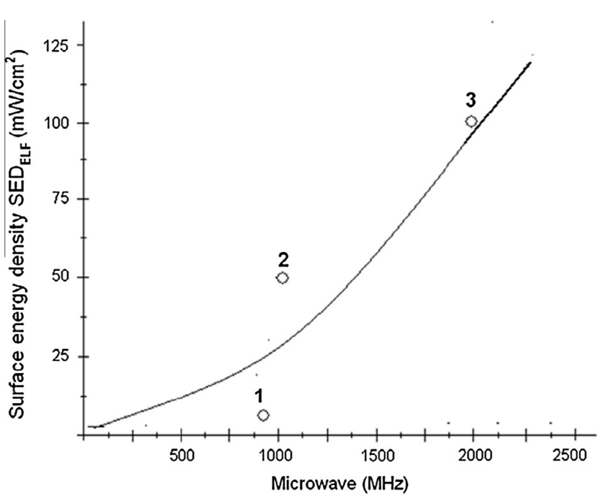

Fig. 1. Ballpark relation of ELF surface energy density versus microwave frequency in MHz.

Table 2
Frequency and amplitude of EEG brain wave.

Wave type	Freq. range (Hz)	Amplitude (μV)	Ave. ω (Hz)	Ave. B (μV)
Gamma	36–44	3–5	40	4
Beta	14–30	2–20	22	11
Alpha	8–15	20–60	12	40
Theta	4–7	20–100	6	60
Delta	0.5–3	20–200	2	110

2.1. Selected choice of SED_{ELF}

Fig. 1 gives a trend of SED_{ELF} that increases slowly with the frequency at first and then more quickly. Refinement of the trend will be made from other requirements.

On physical ground, the energy impinged on a unit area of the subject would increase with the microwave frequency as shown in Fig. 1. The surface energy density (SED) would thus be a function of the microwave frequency in MHz. The SED of the extreme low frequency (ELF) waves will be made *compatible* to that for the EEG data. This necessitates the se of a postulate.

2.2. Postulate of the SED_{ELF} model

Consider the postulate:

The surface energy density SED is assumed to be

proportional to the square of the wave amplitude.

The surface energy density (SED) and volume energy density (VED [7]) have been used to establish thresholds, abrupt or otherwise, for biological and mechanical systems. The application of the concept to the transmission of microwaves and ELF waves related to the brain can be best stated by the Corollary:

Energy transmitted from the microwaves to the ELF waves of the brain is assumed to be connected with that for the EEG data via the transmissibility constant b.

Stated mathematically is the expression

$$SED_{ELF} = bB^2(\omega) \quad (1)$$

The transmissibility constant is b while $B(\omega)$ stands for the EEG wave amplitude that is displayed in Table 2 for the five type of brain waves. In the sequel, it is expedient to use the average wave associated with the average frequency for each of the wave type. Note that the left side of Eq. (1) is related to the ELF microwave in contrast to the right side of Eq. (1), where $B(\omega)$ is the EEG wave amplitude. There remains the compatibility of ELF and EEG:

$$g_{EEG}(\omega) = bB^2(\omega) \quad (2)$$

In other words, the remote microwaves in thousands of MHz are transformed to the ELF waves in the range of 6–10 Hz. Keep in mind that what is measured by EEG is only an indication of the brain rhythm. Both ELF and EEG are not the direct response of the brain. Eqs. (1) and (2) need to be connected.

3. Transmissibility model: compatible ELF and EEG

A compatible condition for joining Eqs. (1) and (2) can be found from the Corollary stated earlier. This allows a consistent way for determining the transmissibility constant b.

3.1. Polynomial representation of EEG frequency and amplitude

Let the data for the average frequencies of the five EEG brain waves in Table 2 be fitted by the polynomials in Tables 3 and 4. The polynomials in Tables 3 and 4 will yield data that are compatible to those for the ELF microwaves in the 6–10 Hz range.

3.2. Compatible transmissibility constant for segmented frequency range

Matching Eqs. (1) and (2) for the frequency ranges of interest, there results the transmissibility constant b for the segmented frequencies of 0–50, 0–40,...,0–4 Hz as shown in Table 5. The order of b varied six orders of magnitude, which is comparably small considering the enormous range of frequencies that b must cover from thousands of MHz to a few Hz. The apparent advantage of using b is obvious.

3.3. ELF surface energy density for segmented frequency range

Once Eqs. (1) and (2) are made compatible, the contemplated master curve in Fig. 1 can be replaced by the compatible master curve for SED_{ELF} as shown in Fig. 2. Note that the trend of Fig. 1 is preserved.

Displayed in Fig. 3 are plots of the ELF surface energy density for 0–10 to 0–50 Hz with different b. The order of the transmissibility constant b changed from 10^{-14} to 10^{-17}. The values of SED_{ELF} lie in a very narrow band width.

Shown in Fig. 4 are curves of the ELF surface energy density for 0–10 to 0–4 Hz covering a smaller range of frequencies. The order of the transmissibility constant b changed from 10^{-17} to 10^{-20}. By changing the scale, the band width for the SED_{ELF} variations appeared to be larger.

Presented in Fig. 5 are curves of the ELF surface energy density for 0–10 to 0–4 Hz covering a smaller range of frequencies. The order of the transmissibility constant b changed from 10^{-17} to 10^{-20}.

Table 3
Polynomials function of EEG frequency.

(Hz)	Amplitude
0–50	$B(\omega) = 296.883 - 30.2713\omega + 1.01228\omega^2 - 0.0105738\omega^3$
0–40	$B(\omega) = 296.436 - 33.7729\omega + 1.34431\omega^2 - 0.017086\omega^3$
0–30	$B(\omega) = 320.789 - 49.2188\omega + 2.93486\omega^2 - 0.0542805\omega^3$
0–20	$B(\omega) = 312.052 - 50.1449\omega + 3.46382\omega^2 - 0.0828278\omega^3$
0–10	$B(\omega) = 312.206 - 50.5029\omega + 3.53512\omega^2 - 0.0835556\omega^3$
0–8	$B(\omega) = 313.798 - 57.9234\omega + 6.94437\omega^2 - 0.415179\omega^3$
0–6	$B(\omega) = 320.0 - 92.6667\omega + 25.2222\omega^2 - 2.55556\omega^3$
0–4	$B(\omega) = 320 - 105\omega + 41.6667\omega^2 - 6.66667\omega^3$

Table 4
Polynomials function of EEG amplitude for average frequencies.

Wave type	Amplitude
Gamma 40 Hz	$B(\omega) = 296.436 - 33.7729\omega + 1.34431\omega^2 - 0.017086\omega^3$
Beta 24 Hz	$B(\omega) = 311.211 - 48.5213\omega + 3.10574\omega^2 - 0.0658018\omega^3$
Alpha 10 Hz	$B(\omega) = 312.206 - 50.5029\omega + 3.53512\omega^2 - 0.0835556\omega^3$
Theta 5.5 Hz	$B(\omega) = 320.077 - 93.8101\omega + 26.3579\omega^2 - 2.80269\omega^3$
Delta 1.75 Hz	$B(\omega) = 320 - 107.143\omega + 48.5714\omega^2 - 11.4286\omega^3$

Table 5
Transmissibility constant b for segmented frequency.

Freq. range(Hz)	b (mW $(\mu V)^2/cm^2$)
0–50	0.6×10^{-14}
0–40	2.2×10^{-15}
0–30	0.2×10^{-15}
0–20	0.9×10^{-16}
0–10	8.8×10^{-17}
0–8	3.4×10^{-18}
0–6	1.0×10^{-19}
0–4	1.4×10^{-20}

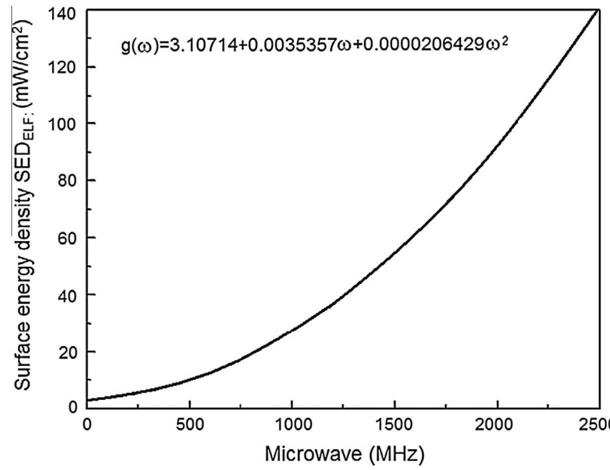

Fig. 2. Compatible master ELF surface energy density.

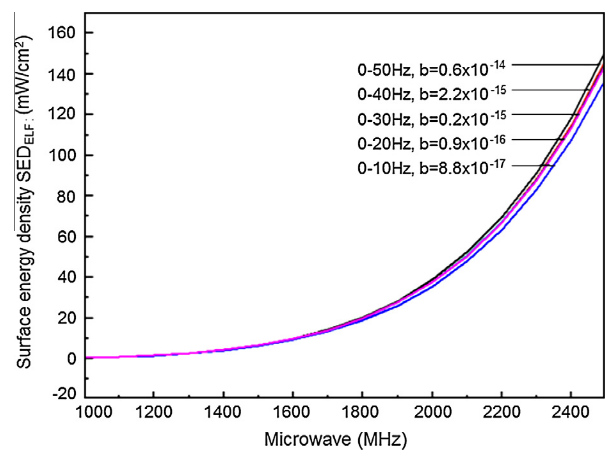

Fig. 3. ELF surface energy density for 0–10 to 0–50 Hz with different b.

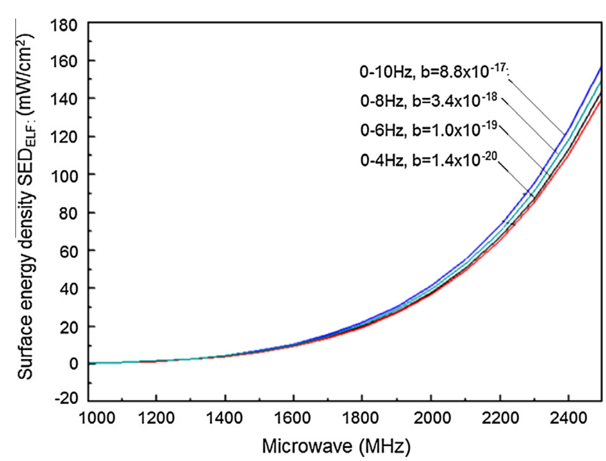

Fig. 4. ELF surface energy density for 0–4 to 0–10 Hz with different b.

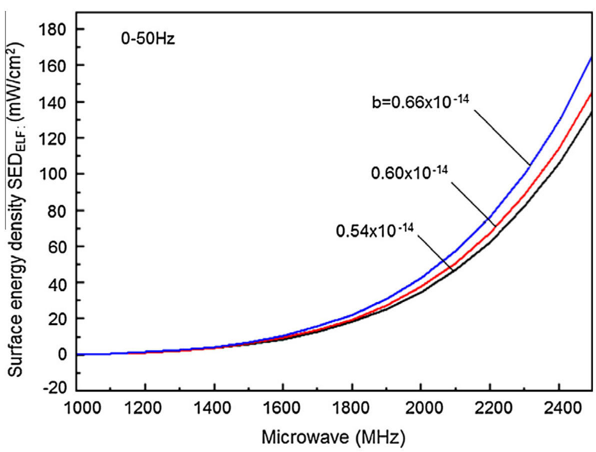

Fig. 5. ELF surface energy density for 0–50 Hz with different *b*.

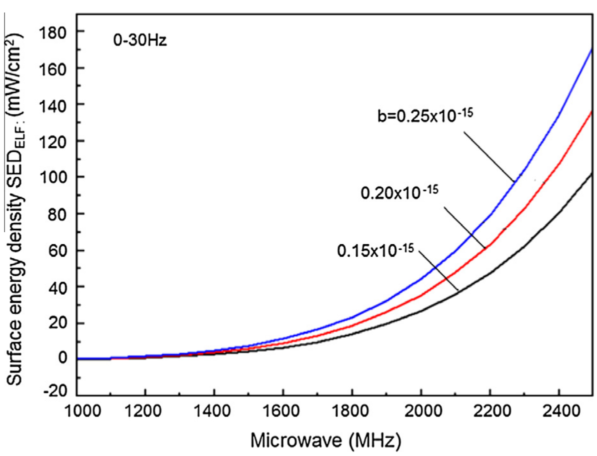

Fig. 6. ELF surface energy density for 0–30 Hz with different *b*.

By changing the scale, the band width for the SED_{ELF} variations appeared to be larger.

3.4. ELF surface energy density for fixed frequency range

By fixing the frequency segment, the transmissibility constant *b* can be made to vary. The results in Fig. 5 for the segment 0–50 Hz correspond to 10^{-14} for *b*, which increased with increasing SED_{ELF}.

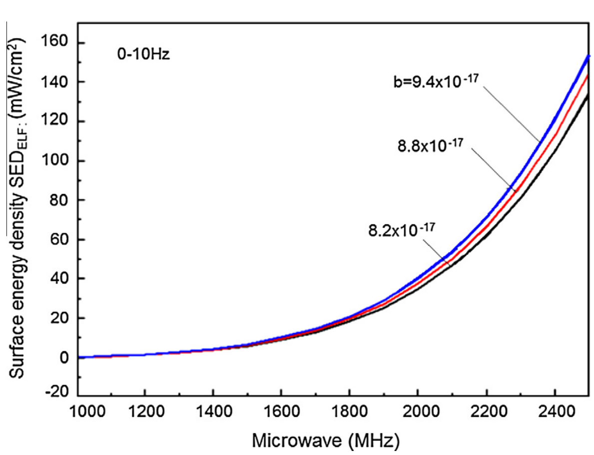

Fig. 7. ELF surface energy density for 0–10 Hz with different.

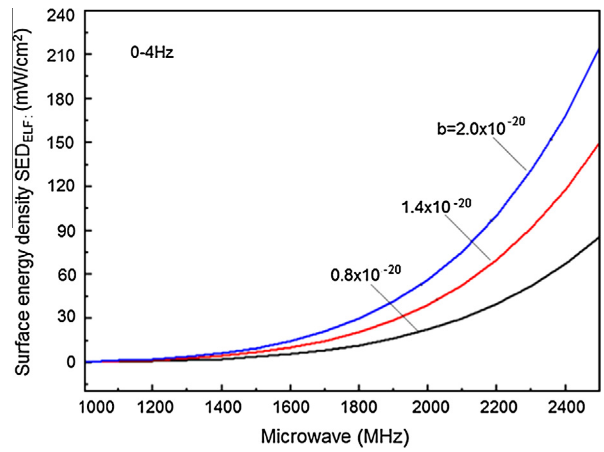

Fig. 8. ELF surface energy density for 0–4 Hz with different*b*.

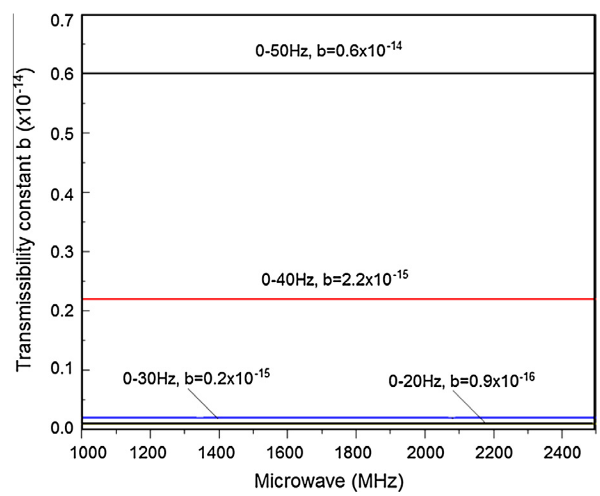

Fig. 9. Transmissibility constant b versus MHz for 0–50, 0–40, 0–30 and 0–20 Hz.

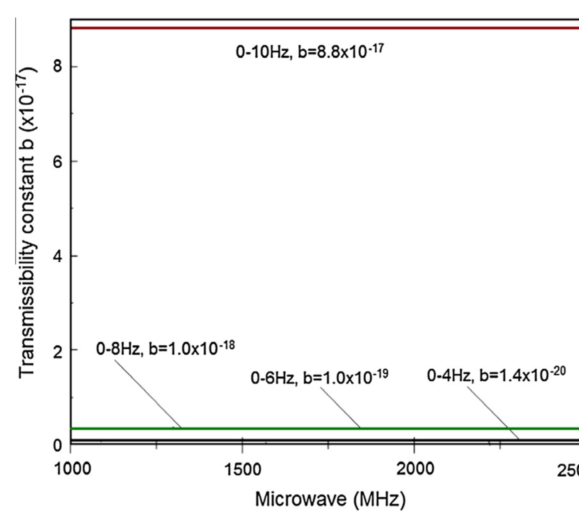

Fig. 10. Transmissibility constant *b* versus MHz for 0–10, 0–8, 0–6 and 0–4 Hz.

The curves in Fig. 6 are spread out more for the segment 0–30 Hz. They correspond to 10^{-15} for *b*. Again, *b* increased with increasing SED_{ELF}. This trend is the same as that in Fig. 5.

Figs. 7 and 8 show the results for 0–10 and 0–4 Hz, respectively. The order for *b* are decreased accordingly to 10^{-17} and 10^{-20} for *b*.

3.5. Transmissibility constant for segmented frequency range

Figs. 9 and 10 show, respectively, the transmissibility constant b plotted as a function of the frequency in MHz for segments of 0–50 to 0–20 Hz and 0–10 to 0–4 Hz. As emphasized earlier, the use of these curves should be made within the limits of validity of the model.

4. Sustainable lock-on capability and changeability

The sustainability of brain wave transmissibility depends on the quality of the lock-on waveforms that may change when the source of wave transmission may also be unstable. Switch-on and switch-off of theta-delta brain waves [8] have been related to falling asleep and awakening. Intermittent wave change behavior is not uncommon.

Tests [1] on the 410–420 MHz cycle have been said to affect the human consciousness by correlation with the electro-magnetic and electro-static fields exhibiting similarity to biorhythms. These magnetic frequencies can be mimicked and manipulated at extremely low power levels. After a few seconds, the neurons and brainwaves can be affected.

4.1. Lock-on capability

Brain waves are susceptible to lock-on at ELF that can be mimicked artificially. The brain is vulnerable to frequencies in the range of 6–10 Hz. The lock-on time can be a fraction of a second with power as low as a few milliwatts. A sine wave has been recognized to have superior lock-on power than a square wave or a triangle wave. Output of sinusoidal waves produces a rotating magnetic field. The build up and drop of the field intensity is gradual on account of the smooth reversal of the wave. A square wave output produces a pulsed alternating magnetic field where the build-up, collapse and reversal of the magnetic field are more abrupt. These features are not known precisely and even more remotely when the effects may be connected with irregularities.

Figs. 11 and 12 display the SED_{ELF} of the gamma, beta, alpha, theta and delta brain waves at their average frequencies, which are shown to vary in a very *narrow band* for a microwave frequency range of 1000–2400 MHz. The band width is negligibly small at a fixed microwave frequency. A mere increase of 15mW/cm^2 is found for the SED_{ELF}. Practically speaking, the SED_{ELF} for all the five brain waves are the same at a fixed microwave frequency. The transmissibility constant b varied from 2.2×10^{-16} to

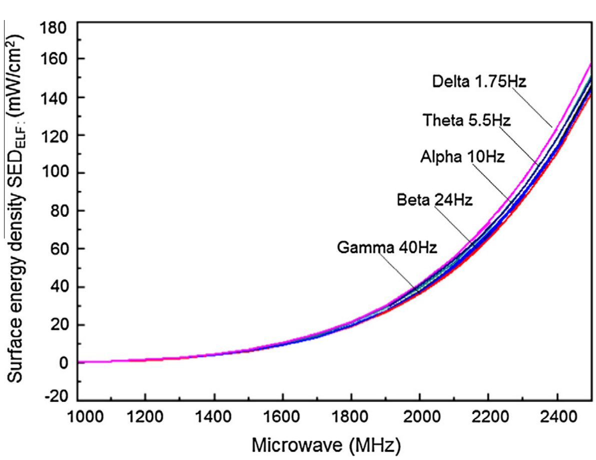

Fig. 11. ELF surface energy density versus MHz for ave. freq. 40, 24, 10, 5.5 and 1.75 Hz.

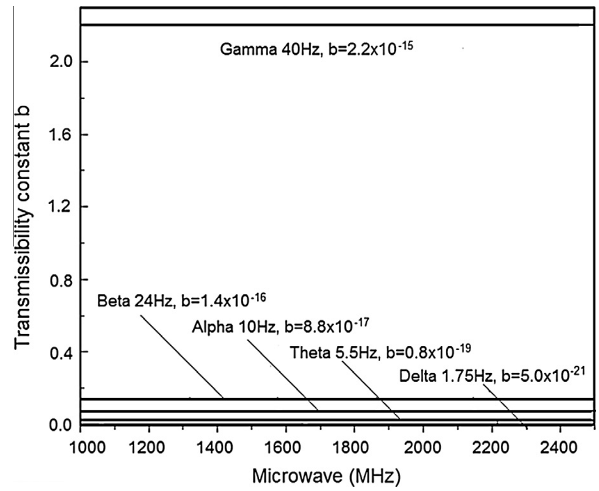

Fig. 12. Transmissibility constant b versus MHz for ave. freq. 40, 24, 10, 5.5 and 1.75 Hz.

5.0×10^{-21} mW(μV)^2/cm^2. The five orders of magnitude change displayed in Fig. 12 for the transmissibility constant b is relatively small considering the transmission of information from thousands of MHz to a few Hz of ELF in the range of 6–10 Hz.

4.2. Sustainable time by LVP

The sustainable time of brain wave transmissibility is determinable from the principle of least variance (LVP) [9] by using the wave length of the brain wave length as the input. More stable brain waves would correspond to less irregularities and thus less variances. The method makes use of a set of a posteriori conditions that determine the weighting functions. They are combined with the brain wave length to obtain the sustainable time. The a posteriori conditions can be found directly from tests. For the present undertaking, data of brain waves from EEG can be a valuable source.

5. Quality of transmissibility

The postulate [1] that the earth and ionosphere constitute a cavity wave guide whose physical constants and magnetic field would oscillate at a resonant frequency identical to the range of human brain waves has paved the way to brain wave and mind-control research. Both theory and laboratory tests have also proved that magnetic-wave shielding is impossible at the extreme low frequencies, even with highly sophisticated multiple iron or mu-metal shielding. ELF signals can be a potential weapon with global capabilities in psycho-physiological warfare. The wavelength of an 8 Hz signal is 35,661 km. This explains the high interest in mimicking artificial waves in the range of 6–10 Hz.

Theoretical and experimental works on the sustainability and reliability of brain wave transmissibility have far reaching consequences. Their advances, however, rest on the quality of the lock-on waveforms that may change when the source of wave transmission can also be unstable and changeable, naturally or intentionally. At the present, artificial waveforms have centered on using sinusoidal waves in contrast to the pulsed square, triangle and saw-toothed waveforms, although more advanced waveforms have yet been found. The desynchronization of frequencies can also be a potential weapon to create confusion to the mind. Thoughts have been given for quantifying and mimicking the irregularities by application of the LVP [9] such that relevant experiments can be developed. The quality of wave transmissibility cannot be over-emphasized for research relater to mind-control by manipulation of the brain waves.

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