

# **Eigenfrequency determination of biocells by a multibioresonance treatment device**

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## **Abstract:**

Now a great interest has been attracted to the study on the physiological and the pathological eigenfrequency of the given biocell for bioresonance treatment. Until now few method for determining of eigenfrequency has been introduced, while some known eigenfrequencies are also considered to be different by each researcher.

As shown in previous studies, under a certain external electromagnetic vibration, physiological eigenfrequency becomes larger while pathological eigenfrequency becomes smaller. Bioresonance treatment is just based on this simple principle.

In this paper a method for determining the most important eigenfrequency of given biocell based on continuous variation of frequency has been presented, which can be effectively used in multi-bioresonance treatment equipments.

**Keywords:** medical electron device, bioresonance treatment equipments, eigenfrequency

## **1. Introduction**

As well-known, all the living things, even including microorganisms(bacteria, virus etc.) radiate their own electromagnetic wave [2, 3]. For human beings, this electromagnetic wave is induced by muscular activity(e. g., the rhythmical contraction and expansion of the heart muscle) and nervous activity (e. g., the transmission of the electric signal from the sensor to the brain and the transmission of the electric signal from the brain to the actuator) and the metabolic activity in the organisms. On the contrast, much of microorganisms have not muscular activity and nervous activity, and thus the main source of the electromagnetic field is only the simple metabolic activity.

This fact implies us that that the radiated electromagnetic frequencies of human body and that of microbiology will be different from each other. Previous studies show that the eigenfrequencies of human body and the pathogenic microorganisms have significant difference.

Nowadays, much attentions have been paid in confirming the external electromagnetic oscillations, including waveform, frequency and amplitude, and development of appropriate treatment equipments.

In human body, electromagnetic oscillation will not occurred in one band, but in series of frequency bands. It is important to let biocells set in resonance state for all frequency bands, that will be helpful to improve the effectiveness of resonance treatment This technique is just called as multi- bioresonance [8, 9, 13, 14, 15, 17]. The bioreasonance treatment method, also called “MORA” method, have already been investigated and corresponding treatment equipments have been manufactured in various forms [4, 5, 6, 7, 10, 12].

For using the bioreasonance treatment, the eigenfrequency of the given biocell is firstly needed to be known.. Each biocell has its own physicochemical and electromagnetic eigenfrequency, which will induce a change in the dermal surface resistance. It is previously known that the healthy state of human body can measuring the variation of dermal surface resistance.

As well known, the electric resistance of each human body is from  $100\Omega$  to hundreds  $k\Omega$ , even several  $M\Omega$  [1]. When the psychophysical states of human change (being in bad health or getting drunk with alcohol or anesthetic, unpleasant life environment, in high stress and so on), the electric resistance of human body changes remarkably even for healthy man. An interesting fact is that the electric resistance of human body changes also when internal emotions (excitement and indignation) change.

Simply measuring the electric resistance can distinguish the abnormal or normal state of human body, while can not determine the eigenfrequency of biocells. As the amplitude of bio-signal is very weak, it can not be measured in brief method, and thus complex experimental equipments and method have been used for its measurement [11,16,18]. They tried to impress human eigen

electromagnetic field by resonating eigenelectromagnetic field of human body with a certain external electromagnetic field to increase the amplitude of it. But the correct eigenfrequency has not yet firmly determined, which is the main factor in the resonance.

Franz Morell and Erich Rasche successfully made a equipment that can measure eigen electromagnetic field of bio-organism in 1970, and made public MORA, the world's first bioresonance treatment equipment in 1977, and continuously developed MORA-COLOUR and MORA-Combi in 1982. They developed MORA-SUPER, a generalized treatment equipment in the ends of 1990s.

On the other hand, a woman doctor processed research work of 20 years under the help of her son, an electronic circuit expert, and exactly measured the eigenfrequency of the organisms including microorganisms, insects , mammals and human body.

Based on these frequencies, study on bioresonance began to widely processed in many countries. But the method of determining of eigenfrequency of all the bio-organisms is not so fully studied and still needs to be improved.

In this paper, the theoretical foundation for the determining of eigenfrequency has been established and its effectiveness has been experimentally verified.

## **2. Theoretical basis for the determination of eigenfrequency**

The bio-current that will be participated in the life of living body can be classified into stable current, damage current and action current. Stable current flows by the potential difference between the outer and inner side of normal cell, and the potential difference is in the range of 40~100mV. The damage current flows from the normal muscular surface to the damaged part. The current under an electronic stimulating is called action current, and in this case, the normal current increases to 110~120mV.

If the frequency of this electronic stimulation and the eigenfrequency of the living body is identical, there will be an occurred an electronic resonance, which will give a possibility for the

measuring of very weak biopotential [4,5,6].

When we continuously change the frequency of treatment equipment, the resonance will certainly occur in the eigenfrequency of the given living body, which we have not known before.

### 3. An experimental method and results

A treatment equipment has been manufactured and its specifications are given in Table1.

Table1. Specifications of treatment equipment

characteristics	value
Total range of changeable frequency	10Hz ~ 400kHz
Interval of frequency change	1 Hz , in case of 10 Hz ~ 1 kHz
	1 kHz, in case of 1 kHz ~ 400 kHz
Rate of frequency change	1 Hz /s, in case of 10 Hz ~ 1 kHz
	1 kHz /s, in case of 1 kHz ~ 400 kHz
The output pulse amplitude	$V_{p-p} = 100V_{p-p} \sim 180V_{p-p}$
Duty rate of output pulse	$\tau = 0.01 \sim 0.2$
The output pulse form	short unipolar square wave pulse

Two electrodes are consisted of the silver-coated buttons with diameter of 5mm.

The device can be operated in both of manual and automatic configuration. The output frequency is fixed in manual configuration, while is continuously changed in automatic configuration,

In our equipment, the output pulse waveform has been presented in Fig.1.

According to our experiment, though exist a slight difference for each man, but most of them feels electronic sense in the range of  $\tau > 0.05$ .

As shown in Fig.1, we fixed  $\tau = 0.1$  and  $V_{p-p} = 180 \cdot V_{p-p}$ , and the equipment has been operated in automatic configuration.

Experiment results show that the appropriate frequency for nose is in the case of  $f = 13\text{Hz}$ , and the patients had a successful improvement in a week.

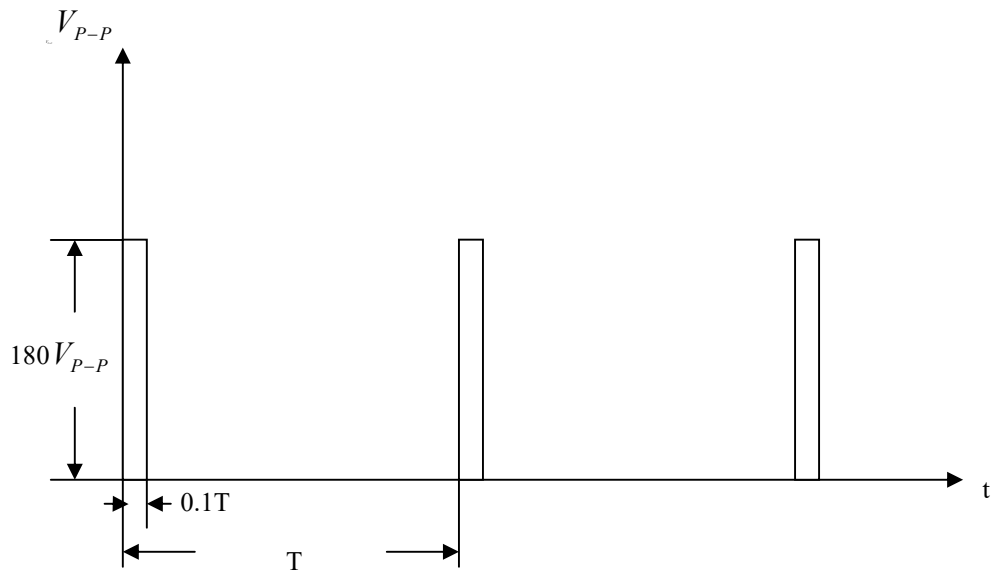


Figure 1. Output pulse waveform of multibioresonance treatment equipment in no-load.

We took impulse of  $13 \pm 1 \text{ Hz}$  into continuous and discontinuous wave form during the treatment as shown in Fig.2.

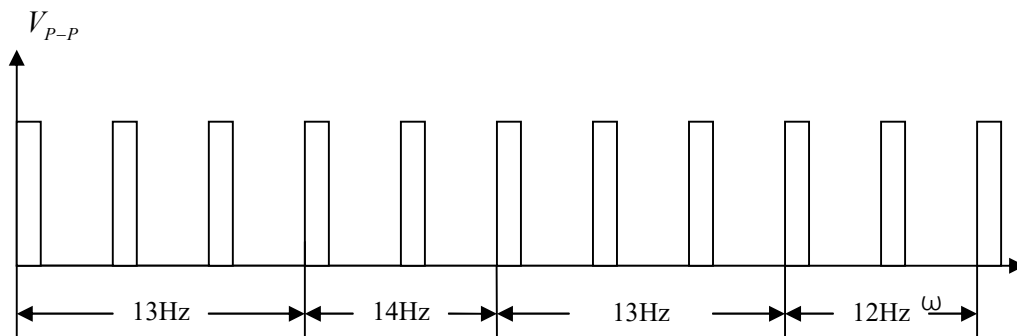


Figure 2. The continuous impulse wave used in the treatment

The treatment was proceeded for 10 minutes twice (in the morning and in the evening) in a day for a week.

To verify the effectiveness of our method, this has also been applied to rheumatoid arthritis, and the treatment efficiency was increased by more than 10%.

Experiment has been processed as follows. Each group of 10 patients has been selected as test and control. All of them have been treated with nonsteroidal anti-inflammatory drug and steroidal hormone, while the test group has additionally applied our bioresonance treatment.

After 10 days, the average main life indexes of test and control group have a certain difference in their values, as shown in Table 2.

Table 2. Main life indexes for test and control

Life index	Operation relation	
	control	test
The number of breathing (time/min)	18.2±0.2	18.8±0.2
pulse rate (time /min)	70.0±0.8	70.0±0.1
systaltic blood pressure(mmHg)	126.5±1.0	125.7±1.2
dilator (mmHg)	82.5±1.1	82.6±1.0
temperature(°C)	36.4±0.1	36.5±0.2
the number of erythrocytes(T/L)	5.22±0.2	5.23±0.1
the number of leukocytes(G/L)	6.33±0.3	6.35±0.2
the number of thrombocytes(G/L)	210.1±5.0	209.1±5.1
blood sedimentation(mm/h)	8.3±0.4	8.2±0.5

The comparison of treatment for the patients in test group and control group has been shown in Table. 3

Table 3. Comparison of treatment results for test and control

group	complete cure	better	unchangeability	effective ratio (%)
test (10 people)	2	7	1	90
control (10 people)	1	7	2	80

Experiment results show that bioresonance treatment has a great potential in the real clinical practice, which will be helpful to guarantee a good health for people. And the effectiveness of our method for the determining of bioresonance frequency has been demonstrated.

#### 4. Conclusions

Eigenfrequencies of the organisms are generally in the range of below hundreds Hz, and the effect of bioresonance treatment is significant in clinical practice, while it does not induce a great influence in the main life indexes. Even for same organism, the eigenfrequency differs slightly for each people. This can be explained by considering the biocells to be consisted of complex mixing of

R, L, and C. And these values can possibly differ by mental and physical state of each people and the measurement method of each researcher.

Further study should be implemented to uniformly determine the eigenfrequency of all specific organisms. Current study can offer a possibility for determining eigenfrequencies that will be used in bioresonance treatment, which has become an effective tool in clinical practice.

In general, it is more the problem to study to uniformly determine the eigenfrequency of all organisms and at the present moment we can reach a conclusion that the multibioresonance treatment allowing the organism to turn into the resonance state in the different dimension is effective.

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