

# **ELECTROPHOTONIC ANALYSIS OF COMPLEX PARAMETERS OF THE ENVIRONMENT AND PSYCHO-EMOTIONAL STATE OF A PERSON**

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## **Introduction**

Ecological state of the environment and its influence on the health and well-being of people is determined by the total set of parameters bio and techno-sphere. These include features and climate of the area, in particular, the level of solarization, the level of air pollution, the distribution of the electromagnetic fields, both natural and anthropogenic origin, and many other factors. As shown in recent years, a significant contribution is made by such heterogeneity of the earth's crust structure as discontinuous zones of tectonic disturbances and tensions, in particular, ancient buried rivers<sup>1, 2</sup>. In the period 1992-2005 in St. Petersburg, Russia, a large scientific team took a number of geological, geochemical, geographical and ecological surveys, correlating them with the health status of population. As a result, a statistically significant correlation between the level of disease in different areas of St. Petersburg and the presence of underground anomalies was demonstrated<sup>3</sup>. The influence of the electromagnetic field on the human health is widely discussed<sup>4</sup>, including the response of biological systems to perturbations of the electromagnetic field in the high frequency (HF) and very high frequency (VHF) bands through human activities<sup>5</sup>. The variety of factors and their dynamic nature requires the use of complex specialized methods that is not always available, even for well-equipped research centers. This makes the evaluation of hazards difficult even for large companies, not to mention the individual citizens. Meanwhile, a similar assessment is fundamentally important both at the design phase of new constructions, and in the analysis of the causes of poor health and increased incidence of people in certain climatic and geographical areas. Therefore, the actual challenge for engineering is to develop a low-cost device for informative comprehensive evaluation of the integral parameters of the ecological environment, which can be used both in a professional environment, and the civilian population.

## **EPI/GDV Technique**

The Human Energy Field (HEF) is a highly sensitive reflection of the physical, emotional, and in some instances, the spiritual assessment of an individual. To measure this, data is obtained from the fingers of both hands and is converted into an HEF image using proprietary sophisticated software. This technology is predicated on the Gas Discharge Visualization (GDV) process. The results are interpreted based on the energy connection of fingers with different organs and systems via meridians that are used in acupuncture and traditional Chinese medicine. A promising method already utilized in sixty-two countries to great success is bioelectrography, based on the Kirlian effect. This effect occurs when an object is placed on a glass plate and stimulated with current; a visible glow occurs, the gas discharge. With EPI/GDV (electrophotonic imaging through gaseous discharge visualization) bioelectrography cameras, the Kirlian effect is quantifiable and reproducible for scientific research purposes. Images captured (BIO-grams) of all ten fingers on each human subject provide detailed information on the

person's psycho-somatic and physiological state<sup>6</sup>. The EPI/GDV camera systems and their accompanying software are currently the most effective and reliable instruments in the field of bioelectrography<sup>7,8,9,10,11</sup>. EPI/GDV applications in other areas are being developed as well<sup>12,13,14,15,16,17,18,19,20</sup>.

Through investigating the fluorescent fingertip images, which dynamically change with emotional and health states, one can identify areas of congestion or health in the whole system. Each generated fingertip photograph is analyzed by sector division, according to acupuncture meridians. Dr. Peter Mandel, in Germany<sup>21</sup> over many decades, has developed this intricate and well-defined method of seeing into the entire body through the fingertips. EPI/GDV technique researchers created a diagnostic table based on years of their own clinical field-testing, the sector basis of which differs from that of Dr Mandel<sup>22</sup>.

The parameters of the image generated from photographing the finger surface under electrical stimulation creates a neurovascular reaction of the skin, influenced by the nervous-humoral status of all organs and systems. Due to this, the images captured on the EPI/GDV register an ever-changing range of states<sup>23</sup>. In addition, most healthy people's EPI/GDV readings vary only 8-10% over many years of measurements, indicating a high level of precision in this technique. A specialized software complex registers these readings into parameters which elucidate the person's state of wellbeing at that time<sup>24</sup>. The latest Bio-Well device is using all data processing via Internet ([www.Bio-Well.com](http://www.Bio-Well.com)).

## Monitoring the Environment

The Bio-Well device with a specially designed Environment Energy Sensor called the "Sputnik antenna" is used to monitor the Energy of the Environment and its effects on emotional status. The "Sputnik antenna" is a specialized Bio-Well device that measures the energy of the environment in a room that enables you to see how it varies when people meditate, pray or listen to a presentation. The physical principle it is based on measuring the electrical capacitance of a space by using two connected resonance contours.

Schematic representation of the experimental setup is shown in Figure 1.

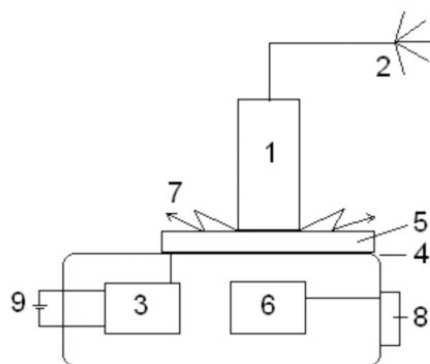


Fig. 1 The experimental setup. 1 - metal cylinder; 2 Antenna "GDV Sputnik"; 3 - high-voltage pulse generator; 4 - transparent conductive coating; 5 - transparent quartz electrode; 6 - video converter; 7 - glow; 8 - USB-drive; 9 - Power Supply

Titanium cylinder 15 mm in diameter connected to an antenna 2 is positioned on the quartz surface of the electrode 5, the reverse side of which is covered with a transparent conductive coating 4; from the generator 3 every 5 seconds a voltage in the form of a pulse sequence of up to 7 kV amplitude, 10 microsecond duration at a frequency of 1 kHz is applied to the coating. Ultraviolet light 7 is transformed by optoelectronic system 6 in a series of images, which are analyzed in a computer. Experimental system in case of being in the room can be represented as an equivalent circuit of the connected LC circuits (see Fig. 2).

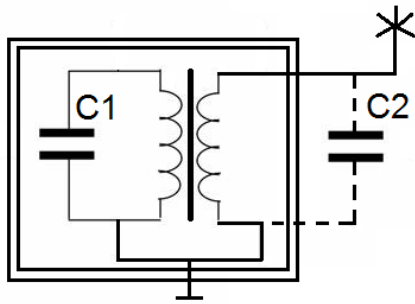


Fig. 2 Equivalent circuit diagram of the experimental setup, where C1 corresponds to the capacity of the electronic circuit of the Bio-Well device, C2 - the equivalent capacitance of the antenna in the premises.

Discharge develops due to displacement currents between the antenna 2 and grounded or conductive objects in the environment. Depending on the availability of fields of different nature in the environment, the chemical composition of the air and the state of the conductive objects (which includes humans), conditions of electromagnetic wave propagation in space are changing, therefore the currents in the system are redistributed, thus influencing parameters of the glow. Thus, this experimental system can react to changes in the electrical capacitance of the space surrounding it and the presence of the conductive objects. In other words, we may say that the signal depends on the propagation of standing electromagnetic waves in space.

Changes in the functional state of the human body leads to a change in the impedance of the body, the field distribution around the body, the chemical composition of the ambient air due to exhaled air and emissions of endocrine substances through the skin.

Data processing was carried out in a specially designed software ([www.Bio-Well.com](http://www.Bio-Well.com)). For analysis both the absolute values of the parameters and their standard deviations in the series were taken into consideration. During the measurements the control of the environment parameters: relative humidity, temperature and pressure was undertaken. In some cases, available through the Internet geophysical parameters: phases of the moon, geomagnetic situation on the day of measurement and a number of other parameters were taken into account as well.

Sputnik sensor may be useful for the following purposes:

1. Testing different places in a search for locations that are calm or contain turbulent energy.
2. Testing the energy status of different sites that are significantly affected by the position of the sun, moon, season or time of the year, etc.
3. Measuring the energy in the Places of Power – both natural and man-made, such as temples and other houses of worship, sacred places, ancient cities, etc.
4. Testing Geoactive Zones, in particular, Geopathic Stress Zones<sup>25</sup>.
5. Detecting the influence of emotions, meditation and focused attention on the parameters of the device.

It has long been observed that people feel differently depending on environmental factors that may include temperature, humidity, atmospheric pressure and geographic location. There are some places where you sleep like a baby, have wonderful dreams and wake up full of energy. But there are others where sleeping is disrupted, fatigue is frequent and there is increased susceptibility to illness. Western science has no explanation for this other than it represents a confluence of geomagnetic influences, subterranean anomalies, hollows, water streams, natural and industrial atmospheric gases; gases, electromagnetic fields, and especially solar and cosmic emanations. It has been practically impossible to distinguish between all these factors or to

determine what each contributes, so our ability to measure the cumulative effect at any particular place can best be described as primitive and rudimentary.



Figure 3. Bio-Well device and a "Sputnik" sensor.

The software allows to perform automatically statistical analysis of a time series data. The program calculates the mean and standard deviation for each interval and statistical comparisons of adjacent intervals by the method of Student's t and Mann-Whitney tests. All input data are stored in a file for further processing in the statistical programs.

## Results

A large series of studies and field trials in Russia, Venezuela, Colombia, England, in the period 2008-2014 showed that the instrument is sensitive to changes in environmental parameters<sup>26</sup>. For example, in August 1, 2008, a series of measurements in Novosibirsk, Berdsk, Irkutsk and Abakan using 7 independent GDV devices during a total solar eclipse was conducted. All experimental curves had two distinct phases: before and after the eclipse (Figure 4). Before the eclipse in all graphs long-wave oscillations of two types were observed: decreasing (for two devices) and increasing (for five devices). After the eclipse signal has stabilized with the variability of less than 1%.

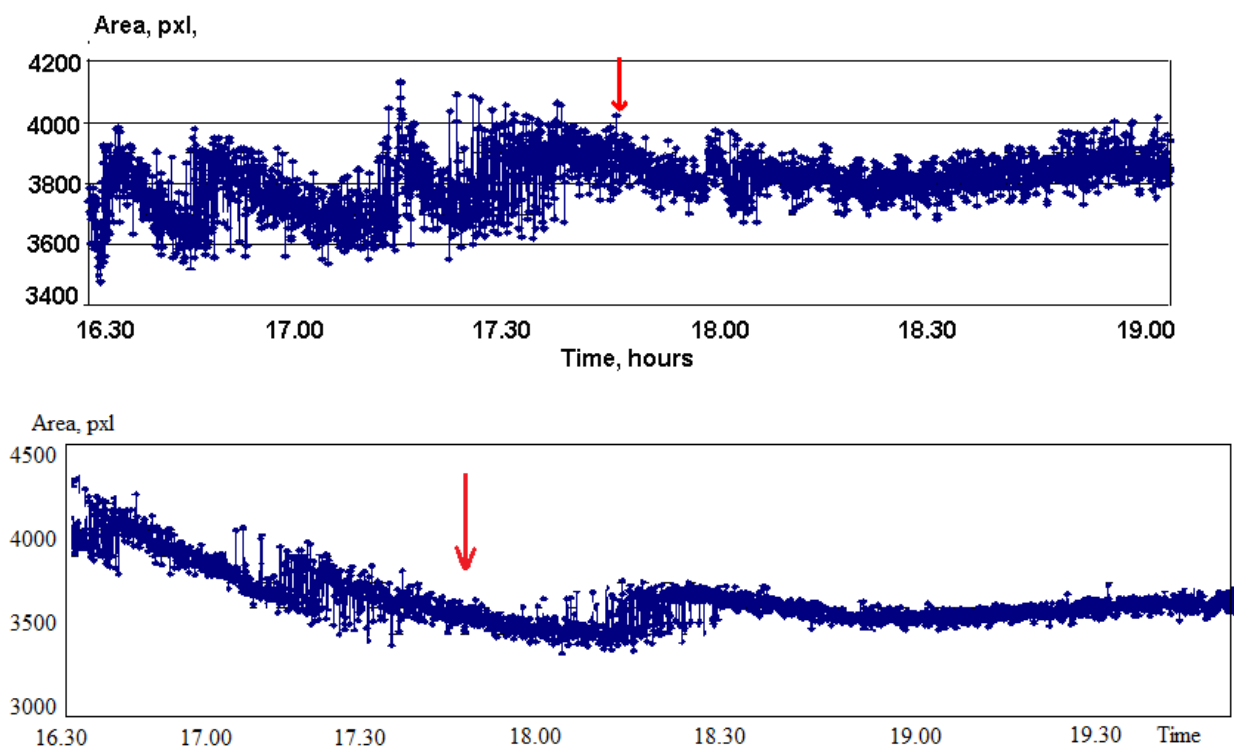


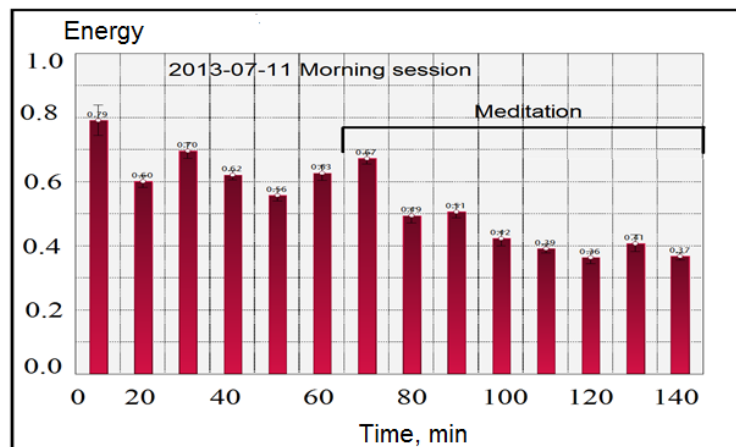
Figure 4. Temporal dynamics of changes in the area of the signal of the "GDV Sputnik" during a total solar eclipse in Novosibirsk 01.08.2008 at two measurement points. The arrow shows the moment of complete coverage of the disk of the sun by the moon shadow.

Measurements have shown that the device responds to the phases of the moon, sunrise and sunset in the southern countries, where this process has a distinct character; variability of the signal increases significantly in geoactive areas<sup>27</sup>. Vadim Seyidov in Berlin conducted measurements with the "Sputnik" at the same time of the day during the year. He found that the amplitude of the signal varies significantly during the full moon phase<sup>28</sup>. Of particular interest is the measurement of subliminal psycho-emotional reactions of groups of people.

Based on these data we can conclude that the developed system and methodology allow us to study the change of mental and emotional states of groups of people. Psycho-emotional state closely associated with the functional activity of the human body, such as the nervous system, the endocrine system, the cardiovascular system. In 2009-2015, various researchers in Russia, USA, India, Italy and the Netherlands have held more than 100 measurements during social events, and in all cases reaction to the change of mental and emotional state of the members of the study group was recorded. Studies have shown that the higher the standard deviation of the Bio-gram area, the higher functional activity of groups of people in the test room.

As an example, let us discuss results of a series of measurements in the United States during a workshop conducted by Joe Dispensa 11-14 July 2013. The workshop was attended by 113 people who listened to lectures and had a collective meditation for 80-90 minutes twice a day. Joe Dispensa guided the process of meditation in the hall with calm music. Bio-Well device with "Sputnik" sensor and the computer were installed in the corner of the room, the recording was carried out automatically with the processing of data on the server in real time every day before and during meditation in the morning and afternoon session for 6-8 hours continuously.

The day before the seminar recording of a sensor signal for 4 hours in an empty workshop room was conducted. After establishing a stable signal level 20 minutes after the start of measurement variability signal does not exceed 10-15%. Analysis of the data showed a decrease in the signal of the sensor in the process of meditation (Figure 5). Signal processing data were broken up into 10 minute intervals, allowing calculates the average values and standard deviations.



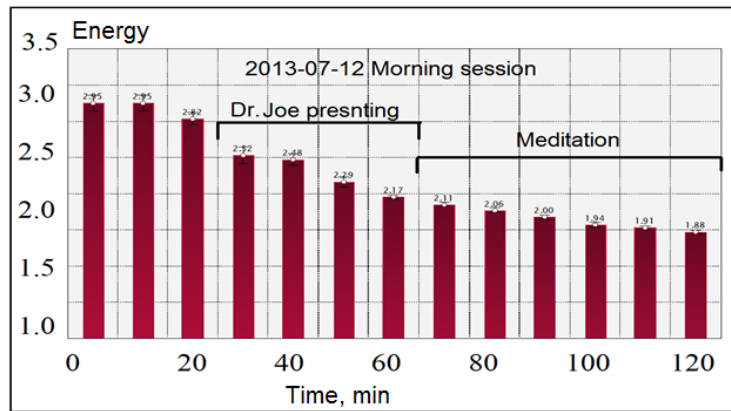


Fig. 5. An example of a signal processing recorded during a morning session on 11 and 12 July 2013.

Decrease in the signal in the process of meditation for all 4 days of the workshop was observed. During the break, the signal level increased. There was also an increase in the signal from day to day (Figure 6).

Similar measurements were carried out repeatedly at various seminars. Interesting trends in the measurements during musical performances were found. Numerous experiments have shown that in most cases the output signal of the device changes significantly at the "live" musical performances.

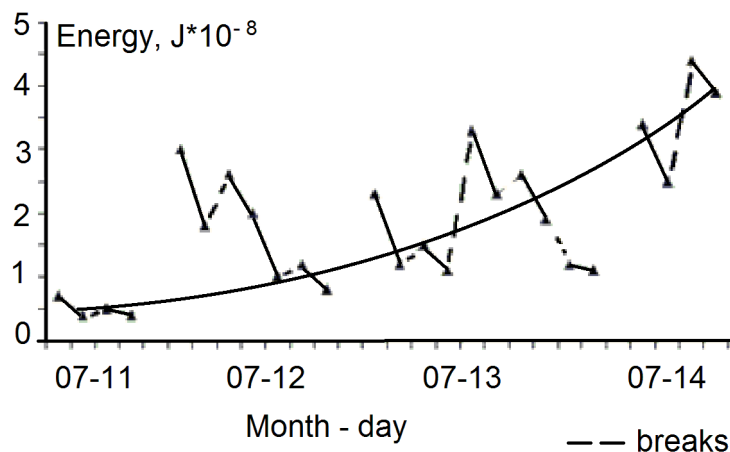


Figure 6. The mean values of the signal energy at the beginning and end of each session during the 4 days of Joe Dispensa seminar.

### Conclusion

The use of Bio-Well in conjunction with a special "Sputnik" antenna allows monitoring both non-selective characteristics of the environment and the functional state (in particular emotional state) of groups of people. The developed method was tested during theater performances and concerts, workshops and lectures, as well as in the process of group meditation. In many cases correlation of Bio-Well parameters and emotional state of the audience was recorded. A series of devices to work with the sensor is developed and produced. Data processing is carried out on the server in real time ([www.bio-well.com](http://www.bio-well.com)). Russian Company [avdspb.ru](http://avdspb.ru) offers services in the comprehensive analysis of environmental parameters as in the

open air and indoors. Sensor can be used in education, security services, geophysics, study of geo-active zones. Currently, different researchers use more than 100 devices with a "Sputnik" sensor.

Correlation measurements are planned to link the signal of the experimental system with changes of physiological parameters such as EEG, ECG, GSR, etc., as well as changes in the level of infrasound, ultrasound, noise pollution, radiation, electromagnetic fields of different range and amplitude.

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