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Gripped by a fear, he outlined a circle around himself. Nikolay Gogol, *Viy*

$$\oint_{l} H_{l} dl = I$$

(Circled integral of magnetic field **H** equals sum I of all the currents included inside the closed contour *l*)

Ampere's theorem.

When science discovers the true purpose of life, science will be the true occultism.

Torkom Saraydarian. *The Ageless Wisdom*

FOREWORD

We live in an age when some ancient human activities are experiencing a second birth and becoming scientific disciplines. Dowsing and Feng Shui are two such disciplines. On the one hand, *dowsing* can be easily discredited as not being a serious scientific discipline. On the other hand, the history of science has many examples of how initial misleading and limited conceptions were eventually immortalized in science. Recall that such an important conception as an *electromotive force* (e.m.f.) is not a force at all but rather a work that transfers a unit of positive charge through a closed circuit.

Thermodynamics is another good example of how an initially limited concept became an entrenched area of science, whereas it really should be called a universal energetics. This science initially resulted from the development of early heat machines. Later it became a discipline, which considers formal transformations of different kinds of energy without detailed analysis of the nature of each of the energies involved. Thermo- is what conveys such transformations but it is not the only result of that.

We keep using the term *dowsing* as a tribute of respect to a longstanding experience of mankind. We keep it as a memory of those profound minds who were killed through dark ignorance.

Today the world is about to experience a new breakthrough that will set up a paradigm of great impact. Brought from the depth of millenniums during which its practitioners were persecuted due to an obscurantism based on incomprehension, this collective knowledge will become both an object of scientific research and a powerful tool for the improvement of human life. It demonstrates a deep holistic approach and a harmony in its nature.

Today there is much reference devoted to a large circle of phenomena that was considered paranormal not that long ago. But we do not propose to document these sources here. Anybody who wants to criticize us for our modest list of references can find abundant documentation elsewhere. Originality rather than quantity is our prime goal.

As far as the accumulated experience and literature sources are concerned, we have to mention the remarkable *The Divining Hands* by Christopher Bird. It provides a complete history of the art of dowsing around the world and discusses in detail the various existing theories, which attempt to explain this extraordinary phenomenon.

We hope the result of our study will be a modest contribution to understanding the physical processes of this activity and its place in a holistic world outlook

FOR THOSE WHO HATE FORMULAS

(Brief content of the Chapter 1)

The authors understand that math formulas make majority of the readers drowsing. Although the math is a language, not everybody has to know it. That would be pity if some of the readers can skip interesting things in the chapter because of the scaring formulas.

For those, we need them to know the following. Everything living on the Earth became such as it is during longstanding evolution in Earth electro-magnetic and other fields.

These fields are imprinted in our organisms. Genetically, we inherited information about their physical characteristics: strength, frequency, phase and so on. No wonder that their disturbance results in our feelings.

Our planet can offer a liberate menu of electromagnetic dishes.

The Chapter 1 deals with mechanisms of formation of such the fields on Earth.

How they are related to Dowsing and Feng Shui?

1. Earth has its own permanent electric field of the strength of 130 V/m at the ground level. Under the certain conditions, like influence of turbulent subterranean waters and others, this permanent field is being converted into an alternating field (ac field). And what is interesting: the frequencies of this newborn field coincide with operating frequencies of our brain and other organs. Moreover, the strength of this new ac field exceeds drastically that of our brain. This chaotic natural ac field

is dangerous to us, because it disturbs our internal pace, affecting our health.

This is why a lot of the bio- geo-pathogenic zones are related to the sources of water.

2. Our planet is surrounded with ionosphere. The floor of ionosphere and the ground form a resonator, which extracts a set of electromagnetic waves, including the super long ones, from the cosmic radiation and lighting discharges. The contours of Earth landscape cause another interesting phenomenon: under the influence of these contours, said electromagnetic waves split, gaining mutual phase shift and then superimposing again. As the result of this superposition, something new, — the rotating electric field is being born. This rotating field is actually a gyroscope.

Back the decades ago, N.A. Kozyrev, a prominent Russian astrophysicist, had shown that rotational motion influences fundamental properties of space-time.

His experiments with a spinning gyroscope revealed changing weight as a result of this phenomenon. This is why authors consider that the rotating electric field is a source of many anomalies on Earth. On the other hand, phenomenon of the rotating electric field, shown as the spinning vector, is encountered pretty frequently in our everyday life.

It can be defined by mutual allocation of subjects around us. This is why Feng Shui devotes a lot of attention to mutual allocation of the natural and artificial subjects.

There are a lot of other interesting things discussed between the formulas of the Chapter One.

I. SOME PHYSICAL ASPECTS OF DOWSING AND FENG SHUI

Dowsing is a complex phenomenon based on the interaction of a human organism and ambient geophysical as well as space environment. To be more precise, one has to say that an organism and the environment form a whole system that is subject to fundamental laws of thermodynamics.

A thermodynamic approach is energetic by its nature. The set of thermodynamic functions has to be taken into consideration when attempting to depict the phenomenon. On the other hand, a human organism can be considered as a complex sensor that produces electric signals in response to external influences. Such a reaction can be determined by the **Le Chatelier-Braun** principle: when a constraint is applied to a dynamic system in equilibrium, a change takes place within the system, opposing the constraint and tending to restore the equilibrium. External electromagnetic forces (and not only they) can play a role in such a constraint. This shows the importance of considering combined electro- and thermodynamic processes in such a system.

In its turn, contemporary physics tries to unify all the known fundamental forces within the scope of superstrings, twisters [1], and torsion field [2] theories. Today's physics does not consider vacuum as absolutely void anymore. Pairs of virtual particles are generated in strong electric fields in vacuum. The twistor theory offers an explanation of originating the quantum of gravitational field from the same vacuum that gives birth to quanta of electromagnetic fields. This is explained within the scope of a topological approach, which is geometrical by its nature. Despite the fact that some fundamental principles of the superstring and twister theory have no experimental support yet, they look beneficial as some of the components to explain the phenomenon of dowsing. The topological approach itself has achieved success in physics.

The said above provides enough reasons to consider electromagnetic effects in dowsing as having more complex origination within the scope of the unified theory. The topological approach can be fruitful if one tries to relate experimental facts of dowsing to the great practical experience

accumulated in esoteric knowledge like Kabala, Yoga, Feng Shui and others. The experimental studies of last years that revealed such phenomena like decreasing a gamma-radiation in the vicinity of a healer during a therapeutic session [3] and The DNA Phantom Effect [4] confirm this approach. This gives some hope that contours- and- patterns-related methods and devices claimed by numerous authors will be transferred from the area of obscurantism into the field of careful scientific analysis based on contemporary knowledge and philosophy.

We also perceive that mankind is a component of a complex System that evolves according to objective laws. These laws reflect the overwhelming harmony existing in the System. Our penetration in the subtle levels of the System will be allowed only if we follow these laws of harmony. First of all, it concerns our way of thinking and viewing the world.

Actually, we have received some signs of a coming new epoch of spiritual and scientific symbiosis. The twentieth century was filled with both dramatic events and great scientific discoveries. *Cracking the Bible Code* [5], more precisely, its beginning was an event we cannot over-estimate. Messages encrypted in Five Books of Moses narrate about events occurred long after Five Books of Moses came into the world, including our days and the future. **Jeffrey Satinover**, the author of *Cracking the Bible Code*, writes: "The Bible Code could signal the start of an age of combined scientific and spiritual exploration such as has not been seen since the great sea journeys that ushered in the global society of the modern world".

All the cited above shows us the background and a gives new paradigm of a contemporary approach to the practice of dowsing.

Today's dowsing can be subdivided into traditional and instrumental branches. The latter has been under intensive development during the last decade. Each branch has its advantages and drawbacks. Traditional dowsing has a wider spectrum of possibilities, but suffers from the numerous factors of physical and psychic conditions of an operator. The instrumental branch is limited in the spectrum of its possibilities, but looks more stable and independent from physical and emotional conditions of an operator.

It seems to us that the best indication of dowsing is a combination of both of them. It can be introduced as a complex number, where its real portion is the reading of the instrument, while the imaginable one is dowser's opinion.

1. ELECTROMAGNETIC EFFECTS INVOLVED IN DOWSING

There is a lot of literature devoted to a mechanism of how dowsers detect *anomaly* places. A certain percentage of it is devoted to an electrophysiological nature of dowsing. According to it, an electric potential is

generated and applied to muscles when a dowser gets in an appropriate place. In its turn, the contraction of muscles under such a voltage causes a rod in the dowser's palm to move. Naturally, a leading role of a human brain as a coordinator of an electrical activity is implied in this process. An American researcher **Dr. Edith M. Jurka** was the first who reported changes in dowser's electro-encephalogram when working over anomaly places [6].

Changes in the neuron network cause an apparent muscle electric activity. There is a ~ 100 mV potential between trained dowser's hands when working over such places. Recent studies performed by **Giel Dutoit** of South Africa revealed a decrease in dowser's ability when shorting such a hand-to-hand voltage with a low-ohm resistor placed between palms [7].

What is understood under an *anomaly place* term? What kind of anomaly is that? Some researchers report a change in gamma radiation in the zones where a dowser's indicator moves. The natural radiation of those spots is not the best answer. At the very same places, motion of a pendulum experiences some deviations, which is indicative of possible changes in a space-time curvature. The radiation can be a secondary effect of distortion of space-time metrics, as it was shown above. The primary cause of the distortion can originate from the topological roots, where a shape plays a certain role.

The heterogeneity of structures and contours of anomaly places in natural Earth's fields causes polarization effects. The caused additional charges manifest themselves in the increasing intensity of the original field and a phase shift between the primary field and the induced one. These phenomena can be used for electronic dowsing.

Employing natural sources of Earth's emanation and radiation was developed during the last years by **Mersmann** [8], **Kravchenko** [9] and others. Both Earth's electric and magnetic fields and super long electromagnetic waves are used for that. In this connection, a question arises: what is harmful for human health - the heterogeneities and distortions of electromagnetic field caused by them, or a more considerable process, whose sub-product the distorted fields are? It seems to us that both points of view are acceptable. Whichever the answer is, one has to focus on the nature of Earth's electromagnetic fields and how they interact with the structure of anomaly places.

Y. Mizun did a good review of dowsing hypotheses [10]. Among other things, electromagnetic origination of dowsing was considered.

In the current work we set forth our own results. The constants are taken from reference books.

Life on Earth was developing under the conditions of thermodynamic equilibrium with changing the electromagnetic field of the planet. One of natural sources involved in that and playing a very important role in dowsing is Earth's own electric field. An average surface density of the earth charge is -1.15×10^{-9} C/m². The total charge of the planet equals -5.7×10^5 C. The electric field of our planet is 130 V/m at the ground level. Such a high intensity field can cause dowsing-related phenomenon, which we will consider further.

Another source of electromagnetic activity of our planet is the waves produced by series of lightning discharges in Earth's atmosphere. Each discharge produces a wide spectrum of electromagnetic radiation. A great deal of such discharges takes place in Earth's atmosphere every minute providing a continuous radiation. Another source of such a radiation is the lower portion of Van Allen belt, where velocities of charged particles coming from Space are so reduced that their radiation is reposed in low frequencies.

The system consisting of Earth's surface, atmosphere and the lower portion of ionosphere can be considered as a combination of a concentric spherical resonator and a waveguide of electromagnetic waves. It operates as a resonator for waves propagating normally to Earth's surface (Fig. 1.1b). Besides that, Earth–ionosphere cavity channel forms a waveguide along Earth perimeter. As the length of Earth perimeter and the distance between the ground and the lower border of ionosphere differ drastically, there are two major types of waves.

The waves of the first type, **Fig.1.1a**, are supported by a closed wave channel along the perimeter. The length of the perimeter is roughly 40,000 km (25,000 ml). The interference phenomenon of two waves propagating in opposite directions along the closed channel takes place here. This looks like in a resonator. An integer number of half-waves have to be placed between the walls of the resonator. The major wave produced under such conditions has a frequency of 10 Hz. This is a primary EEG frequency in all animals [11]. There is also a set of more short waves in this channel. Electric oscillations with frequencies up to 30 Hz are referred to a special category of extremely low frequencies, ELF.

The role of ELF waves, their influence on a human body should be particularly emphasized. One of the prominent teachers of The Ageless Wisdom Teaching, **Torkom Saraydarian** assigns ELF waves to a manifestation of the Cosmic Shocks, which guide the evolution of mankind [12, p. 41].

As a confirmation of the very special role of ELF waves, a new concept of a gravitational mass reduction by means of ELF electromagnetic radiation, developed by **Fran DeAquino**, can be presented [34, 35]. Today, the author claims achieving zero- and negative gravitation due to absorbed ELF EM radiation. Taking into consideration an equivalency of gravitation and space-time curvature, one can assume a profound influence of ELF EM radiation on the fundamental base of Universe with all the following consequences for mankind.

The waves of the second type **(Fig. 1.1b)** propagate normally to the earth. The lower layers of ionosphere have the lowest concentration of charged particles and reflect low frequency waves. The waves that propagate normally to the earth experience reflection from the upper and lower conducting surfaces and form standing waves typical for a resonator. The distance between Earth and lower border of ionosphere is 50-80 km. The condition of integer number of half-waves between the spheres defines the wavelength of supported waves. It does not exceed 160 km, which corresponds to frequencies more than 2 kHz.

As seen from this analysis, both types of waves differ in wavelength and polarization. A great role the ionosphere plays in dowsing is obvious from the following example. Conditionally, the ionosphere consists of four major layers: D, E, F1 and F2. Maximum concentrations of electrons in cm³ are 10^4 , 2×10^5 , 4×10^5 and 10^6 respectively. Their altitudes are 80, 120, 220 and 350 km. The D-layer exists only during daylight hours, while F1 exists only during a summer time. Concentration of electrons in the layers varies depending upon a season and time of the day, latitude and solar activity. Dependence of dowsing on these factors is known and can be considered in terms of the condition of ionosphere.

The condition of amplification of certain waves in resonators is defined by an integer number of half-waves being inserted between the walls of the resonator. The altitude of ionosphere plays a major role in forming super-long electromagnetic waves. Both the resonators and the waveguides are characterized by different modes of operation. A major criterion of that is the allocation of electric and magnetic vectors. Depending on the way of the excitation of an electromagnetic wave and geometry of a waveguide, there can be transversal electric and transversal magnetic modes, TEM and TMM respectively. Unlike free space, an electric field in TEM waveguides is not a curl by its nature; it starts and ends on charges, while there is a longitude component of a curl electric field in TMM waveguides along their axis. Such a variety of geometry of electric contours has to be taken into account when discussing physical processes of dowsing. For instance, a lightning discharge between clouds and the ground can produce TEM waves in a natural waveguide, while the discharge between clouds in a horizontal plane can cause TMM waves.

Produced by a lightning discharge, waves propagate in opposite directions along curvature of the earth forming interferential patterns. The said patterns can be mechanisms originating **Curry [39]** and **Hartman's [40]** energy grids.

Besides those major frequencies, there is an additional spectrum caused by an amplification of lighting discharge by local resonators formed by a temporal configuration of clouds, which play a role of walls of the resonator.

2. DOWSING AND A SPECIAL ROLE OF WATER IN A HUMAN ORGANISM

Speaking of electromagnetism, we cannot bypass its influence on a human organism activated by means of water in it. Our organism consists of almost three quarters water. Water can be considered as a matrix of biological systems. The thin layers of water border two-ply lipid membranes in our cells, influencing important ion transport through the membranes. These thin layers manifest very special physical properties. There is also a bulk mode of water in inter-cellular space. Both thin and bulk modes of water play a tremendous role in our life and, as it was revealed during last decades are extremely sensitive to the influence of physical fields.

Today, there is no need to convince somebody in a firm correlation of various biological processes and variations of an electromagnetic field. Citing the results of some pioneer researchers like **G. Piccardi** [13] became a tradition. Studying the processes of settling particles of bismuth chloride in water in the early 50's, he noted the correlation between the electromagnetic activity of the Sun and the rate of the reaction. The phenomenon was attributed to changing the structure of water in the electromagnetic field. Studying the dependence of cycles of biological processes on the periodicity of geo-space processes resulted in the origin of chronobiology. Some recent results in this field were presented by **A. Dubrov**, [14].

The influence of water on human beings can be demonstrated by **Fig. 1.2,** which explains why the temperature of a healthy human body is 36.7° ÷ 37.0° C. (The illustration is edited from [15]). The heat of water is minimal at these temperatures. This condition is thermodynamically profitable. Any distortion of physical properties of water will be resulted in its thermodynamic characteristic and, consequently, in the condition of a human body.

It is a well-known fact that water subjected to the influence of a magnetic field gains special properties widely used today. There are a lot of intellectual property documents on the treatment of water by physical fields: electromagnetic (in its various appearances), acoustic, and so on.

There is a special direction in this field: treatment of water by means of a laser beam. Priority of this new direction in science belongs to a Soviet scientist **V. Iniushin** [16] and his fellow scientists, who initiated these studies in late 70's. They first reported about changes in some physical and biological properties of water after such a treatment: reduced evaporation, accelerated water consumption [16]. Due to a classified character of the information related to the laser treatment of materials in the former USSR, the major results of the research works on laser-activated water were not known to Western scientists.

In the early 80's, one of the authors of this publication was the manager of an interdisciplinary research group, which was studying physical and biological properties of water activated by a laser beam [17]. The author and his colleagues obtained new results. In particular, two modes of water were observed during the treatment. One of them had a tendency towards increasing the concentration and activity of hydrogen ions pH, while the other demonstrated the opposite. These two types of water demonstrated different biological properties. One of the stunning results was that the water gained psychotropic properties. The experiments were conducted by the scientists at The Odessa Mental Hospital Research Center in 1982 according to the method for testing psychotropic medicine developed by them. The essence of the method was that specially selected pairs of white male rats were subjected to the injection of water followed by a dosed electric shock in a special chamber equipped with shocking electrodes and motion sensors. There was a specific threshold level of the shocking voltage for each pair of rats, after which the rats demonstrated aggressiveness to each other. The threshold voltage level, therefore, was an indicator of the psycho-action of a special medicine: the higher the voltage threshold was, the more sedative the action of the medicine was, and vice versa. In these experiments on rats, the scientists revealed that both types of water described above cause a strong influence on animals' brain. While one of water modes caused aggressive pairs of mail rats to be calm, the opposite mode converted the pairs marked as non-aggressive into obviously aggressive after injecting water. We observed as some pairs of rats demonstrated mutual aggressiveness after the shock of 80 V AC if no injection of water was done, and as the same pair didn't want to fight with each other even after being subjected to 250 V AC shock (there was simply no more voltage produced by the equipment) after injecting one of the water modes. The injection of the opposite mode made the rats, which normally didn't fight after 120-130 V fight at 70 V after injecting water. Although laser radiation produces quanta with relatively high energy, at least higher than the energy of radio wave frequencies, the spectrum of physical agents that are able to change the structure and biological properties of water is pretty wide today. This allows to suppose that the influence of "bad and good" in dowsing can be caused by changing the structure of water in a human organism.

3. PHYSICAL PATTERNS OF DOWSING

Historically, dowsing was originated by needs of prospecting subterranean water. Let us consider now a heterogeneous system comprising two layers with resistances, capacitances and thickness R1, C1, D1, and R2, C2, D2 respectively. **Fig. 1.3** shows a geometrical location of such layers, one of which looks like a lens. That can be a liquid lens (water, oil lens, etc.) in soil. **Fig. 1.4** shows an electric equivalent of such a system.

This disposition is for an electric vector that acts normally to the ground. It can be either an electric vector of an electromagnetic wave propagating in parallels to the surface or Earth's own electric field. We will find the phase shift of the original field and the current caused by it, as well as the variation of the phase shift depending on the subterranean relief. This model implies that the entire field is concentrated in this structure, that is to say, there is a high conductive layer under this structure, while a measuring instrument is located in the immediate proximity to the liquid lens. The suggestion of a high conductivity layer is justified by a real existence of water-bearing layers.

Vector **E** of an electric component of an electromagnetic wave is directed vertically along the long axis. The Maxwell-Wagner polarization is a dominant process in such a heterogeneous system placed in an external field. This kind of polarization produces bound charges located on adjacent surfaces. These charges, the so-called secondary sources, produce an additional field that adds to the original one. That is why the intensity of the electromagnetic field over heterogeneous structures is elevated. The process can be characterized both by the intensity of the resulting field and the phase shift. Electric relaxation processes in such a system cause the phase shift mentioned above.

One can show the total impedance of the system

$$Z = \frac{R_1}{1 + (\varpi C_1 R_1)^2} + \frac{R_2}{1 + (\varpi C_2 R_2)^2} - j\omega \left(\frac{C_1 R_1^2}{1 + (\varpi C_1 R_1)^2} + \frac{C_2 R_2^2}{1 + (\varpi C_2 R_2)^2} \right)$$
(1)

Where ω is an angular frequency, and $j = \sqrt{-1}$.

From here, the tangent of the phase shift between the voltage and the current can be obtained: $tg\phi^1 = B/A$ where B is an imaginable portion of the expression, while A is its real one.

One can transfer from these technical characteristics to physical ones if replaces CR parameters for $\varepsilon \epsilon_0 \rho$ where ε is a relative dielectric permittivity, ε_0 is a dielectric permittivity of vacuum, and ρ is a resistivity.

Taking into consideration that $R = \rho D/S$, $C = \epsilon_0 \epsilon S/D$, where D is thickness and S is a section, one can get

tg - European notation of tangent, = tan is US equivalent of European tg.

$$tg\varphi = \frac{\omega\varepsilon_0 \left[\frac{\varepsilon_1 \rho_1^2 D_1}{1 + \left(\varpi\varepsilon_1 \varepsilon_0 \rho_1 \right)^2} + \frac{\varepsilon_2 \rho_2^2 D_2}{1 + \left(\varpi\varepsilon_2 \varepsilon_0 \rho_2 \right)^2} \right]}{\left[\frac{\rho_1 D_1}{1 + \left(\varpi\varepsilon_1 \varepsilon_0 \rho_1 \right)^2} + \frac{\rho_2 D_2}{1 + \left(\varpi\varepsilon_2 \varepsilon_0 \rho_2 \right)^2} \right]}$$
(2)

Analysis of 1 + $(\omega\epsilon_{1,2}\epsilon_0\rho_{1,2})^2$ expression shows that its square portion is much less than 1 up to frequencies 1MHz and resistivity $\rho \sim 10^4$ Ohm • m, and can be ignored under these conditions. Taking into consideration these circumstances and that D_2 = KD_1 , one can write down for the phase shift angle

$$\varphi = Arctg\left(\frac{\omega\varepsilon_0\left(\varepsilon_1\rho_1^2 + K\varepsilon_2\rho_2^2\right)}{\rho_1 + K\rho_2}\right)$$
(3)

Angle φ is that of the phase shift between the voltage and the current The voltage is produced by the electric vector \mathbf{E} of the electromagnetic wave, while the current represents both the polarization processes and the free charges transfer in a complex medium caused by the said electric field \mathbf{E} .

The energetic contribution of boundary media in dowsing can be estimated with a conception of secondary sources via an electric potential they create in the original electric field of the earth. The essence of a secondary source conception in electrodynamics is that the original/primary sources of the field induce surface charges at the border of the media with different dielectric permittivity. The action of the induced surface in material media can be shown as that of some secondary sources in vacuum [18].

The total electric potential V of any arbitrary point r is the sum of potentials formed both by primary and secondary sources of an electric field. Secondary sources originate at the borders of the locally-homogeneous areas of the object. They are uncompensated bound charges induced by the field of a primary source.

Fig.1.5 shows a general conception of the secondary sources method. The original source is a space charge of density ρ . Its field induces surface charges (secondary sources) at the borders of the media. The said sources make a contribution in the energetics of this process. If O is an observation point, then an electric potential at an arbitrary point, where E_n is a normal component of the field P in area $ε_2$, is defined by the original field of area $ε_1$ and all the surface charges located at the border $ε_1$ – $ε_2$. The surface density of the secondary sources is:

$$\sigma = 2\varepsilon_0 E_n \frac{\varepsilon_2 - \varepsilon_1}{\varepsilon_2 + \varepsilon_1} \tag{4}$$

There is a step of a normal component of the field at the surface charged by the secondary sources.

$$E_{n_1} - E_{n_2} = \frac{\sigma}{\varepsilon_0} \tag{5}$$

The total electric potential V can be found as the sum of the primary and secondary sources. The left and right integrals represent the contributions of the original (primary) and secondary sources of the field respectively.

$$V = \frac{1}{4\pi\varepsilon_0} \int_{V'} \frac{1}{|r - r'|} \frac{\rho}{\varepsilon(r') / \varepsilon_0} dV' + \frac{1}{4\pi\varepsilon_0} \int_{S'} \frac{1}{|r - r'|} \sigma dS'$$
 (6)

A simple analysis shows that the contribution of the secondary sources is comparable with that of the primary sources and can even drastically exceed it in the immediate vicinity of the secondary sources.

Let us estimate the characteristics of the systems that consist of a layer of soil with ρ_1 = 10^2 Ohm•m, ϵ_1 = 2 and a water lens with ρ_2 = 10^4 Ohm•m, ϵ_2 = 81. The operating frequency of the measuring instrument is 10 kHz. Put K=D₂/D₁ =0.1, one gets ϕ = 22.27°. For the heterogeneous system, $tg\phi = \omega\epsilon_1\epsilon\rho$, which brings ϕ = 0.01° for the soil and 24.23 for the water alone. The difference between both angles is the result of the influence of the water lens.

An operator working with a phase-sensitive instrument detects such a phase shift. Table shows phase shifts in such a system calculated for different frequencies.

It is seen from the table that the homogeneous structure consisting of the soil alone actually does not cause a considerable phase shift at frequencies up to hundreds of kHz. However, it makes its visible contribution to the electric behavior of the heterogeneous structure. That is why a dowsing instrument will not "see" such a homogeneous soil until even a small presence of localized water is detected.

The energetics of anomaly places can be evaluated from the following. Let us consider the primary alternating field of a natural origination, $E=10^2\,V/m$. The spatial density of electric field energy is $W\epsilon_0\epsilon E^2$. For air we have $W=10^{-7}\,J/m^3$. Now consider the field right above a water lens. The water-air border forms $\sigma=2 \cdot 10^{-9}\,C/m^2$ uncompensated charges, according to (4). The field created by them is calculated according to (5) and equals $2 \cdot 10^2\,V/m$. The total field will be $3 \cdot 10^2\,V/m$, which brings $W=9 \cdot 10^{-7}\,J/m^3$. For the areas of an industrial field, the result can be much more dramatic.

Phase shift in different structures (above)

f, Hz	φ, homogeneous structure	φ, heterogeneous structure	φ, water alone
10	-	0.02	0.03
30	-	0.07	0.08
100	-	0.23	0.26
300	-	0.70	0.77
1 10 ³	-	2.35	2.57
$3 \ 10^3$	-	7.01	7.69
10 10 ³	0.01	22.27	24.23
$30\ 10^3$	0.02	50.87	53.47
100 10 ³	0.06	76.28	77.47

A Russian scientist **Youry Kravchenko** [9] has developed an electronic dowsing instrument that operates as an electrometric meter of a phase shift, while has no channel sensitive to the intensity of the field. The instrument detects a phase shift of an electric component of super long electromagnetic waves at 5 and 10 kHz frequencies. The said phase shift can be caused by the mechanisms of polarization processes considered above.

4. MECHANISMS OF THE INFLUENCE OF ANOMALY PLACES ON HUMAN HEALTH

GENERAL ENERGETICS OF HUMAN ORGANISM IN EXTERNAL FIELDS

Although the energy considered above is much less than that of the thermal motion of molecules in the same volume, one has to take into consideration that biological influence of extremely weak electromagnetic fields (EMF) was proved back in the 60's., [19, p.7]. At that time, it looked amazing that the weak energy of EMF, which was sufficient only to change rotation of molecules, i.e. convert EMF energy into heat, was able to produce drastic biological effects. Two explanations are possible.

Let us estimate the energetic contribution of an external field with the intensity $E=10^2~V/m$ into a living cell. Membranes are important compnents of cells. A lipid cell membrane has $\sim\!10^{-8}~m$ thickness. The membrane voltage is $\sim\!10~mV$. Therefore, the internal field of the membrane is $\sim\!10^6~V/m$. One has to take into consideration that such intensity takes place only

inside the membranes. An average field of a cell is lower by several orders. A living cell is a heterogeneous stratified structure. For such systems, as it follows from electrodynamics, the intensity of the internal electric field Ei in a narrow cross gap equals that of electric inductance $D=\epsilon\epsilon_0 E=\epsilon_0 E_i$. Taking into consideration that for water $\epsilon\sim80$, one gets $E_i\sim10^4$ V/m, which can be comparable to cell average field, i.e. applying the external field drastically changes cell's energetics in some of its compartments.

On the other hand, modern physics claims a rotation as a source of torsion fields, propagating information rather than energy. This will allow a new understanding of the role of weak EMFs in dowsing. Besides their own energetic contribution, they can play the role of a driver of torsion fields. Heavy EMF, besides that, brings notable energetic misbalance in living organisms.

A human body can be considered as an interacting system of resonators and relaxators. Depending on structure levels (organism, organ, molecule aggregates and so on), these aggregates are represented in a wide spectrum from a few Hz up to hundreds of kHz. Energetically, they dwell in equilibrium with a surrounding media. If the surrounding energetic changes faster than the system can react to, the equilibrium is being upset. The system will react to that according to **Le Chatelier-Braun** principle. Elevated density of energy is free energy in this case. Any system tries to reach a state of minimum free energy under current conditions, and the reaction of a disturbed system will aim to restore the equilibrium. The reaction of a living organism will follow this principle too. In these terms, one can assume that changing in a human brain activity reflected on EEG under the influence of external fields is the result of the reaction of adaptation to changing conditions. This can be both a cause of dowsing phenomenon and a factor of a health risk.

As it was shown above, the phase shift and intensity of electromagnetic field can vary within limited space. If, within a human body or an organ, the phase shift and intensity experience spatial changes, it causes the organism to loose its pace. The latter is harmful during long exposition. If the dimension of heterogeneity drastically exceeds that of the body, and, if a human being does not quit this place for a long time, the risk is elevated. The same can be related to the variation of the phase shift and intensity during a long period.

ROTATING ELECTRIC FIELD AS A NEW AGENT OF EXTERNAL INFLUENCE

The said phase shift can be a cause of one principal phenomenon. Exposing an object to the action of two vectors of the same electromagnetic

wave, shifted in phase and spatially, forms the resulting vector that rotates in space pretty much like it takes place with a resulting magnetic vector in AC motors. There are a lot of contours in nature, where the arrangement of adjacent layers creates the appropriate condition to initiate this process. One of such arrangements is illustrated by Fig. 1.6, where a system consisting of three regions, with relative dielectric permittivities $\epsilon_1 > \epsilon_2 > \epsilon_3$ is shown. When an electric vector crosses the border of two adjacent layers with different dielectric properties, it experiences deflection, which depends on the ratio of the relative permittivities of the layers. The more the ratio is, the more the deflection is. The two vectors that initially had equal phases gain phase shifts when passing the borders of different media, like it was shown in Fig. 1.3, 1.4. Moreover, the refraction and superposition of the electric vectors ϵ_1 and ϵ_2 creates the third vector ϵ_3 in the upper medium of Fig.1.6.

Moreover, what is extremely important: due to the phase shift of vectors $\mathbf{E_1}$ and $\mathbf{E_2}$, the third vector $\mathbf{E_3}$ rotates in space and time with the frequency of the electromagnetic wave. Its intensity exceeds that for $\mathbf{E_{1,2}}$. The considered example is illustrated for vectors $\mathbf{E_1}$ and $\mathbf{E_2}$, which are initially in a phase. For a traveling electromagnetic wave, it means that its wavelength has to be much more than the dimension of the heterogeneous place. Super long electromagnetic waves meet these conditions.

This leads to at least two major consequences:

- 1) Changes in the energetic equilibrium of an organism and its following reaction.
- 2) Special properties of spin studied by modern physics can cause anomaly phenomena (like torsion fields and others), which can change the metric of space-time with all the resulting consequences.

We can show analytically that spinning S of the resulting vector E₃ is

$$\mathbf{S} = \sin \left(\Delta \phi \right) \omega [\mathbf{E}_1 \mathbf{E}_2] \tag{7}$$

Its vector properties are defined by the vector product $[E_1E_2]$. S is a vector located normally to the plane of vectors E_1-E_2 according to the right screw rule: turning the screw from E_1 to E_2 counterclockwise defines the direction of the resulting vector as it is seen by an observer at the end of the resulting vector. Its absolute value is E_1E_2 sin α , where α is an angle between them. Here, $\Delta \phi$ is a phase shift between E_1 and E_2 , and ω is an angular frequency of these fields. As it is seen from the equation, the direction of the rotation depends on the mutual allocation of E_1 , E_2 and the phase shift $\Delta \phi$.

Fig.1.7 illustrates general properties of the vector product c of the two original vectors **a** and **b**. Spatial orientation of vector **c** in **Fig. 1.6** corresponds to that of spinning S in the equation above.

According to the theory [2], generating electromagnetic fields is accompanied by forming torsion fields. Researchers of torsion fields claim that their action on a human being depends on the direction of spinning their original source: counterclockwise rotation causes positive effects for human beings, while a clockwise rotation is negative for human beings, [20].

Taking into consideration that $[\mathbf{E_1}\mathbf{E_2}] = -[\mathbf{E_2}\mathbf{E_1}]$, we understand that the sign of the generated torsion fields and their influence on human beings depends both on the electro-physical characteristics of the soil and the geometrical patterns of the landscape.

It confirms that the origination of anomaly places is possible under special conditions related to the topological profile of a certain arrangement. In the light of that, some postulates of Feng Shui can find a physical interpretation.

We also want to note that human cells with their heterogeneous (both geometrical and electro-physical) structure meet all the requirements to form the spinning vector inside it when placed in external EMF.

Fig. 1.8 explains in details how the spinning vectors are formed. Fig. 1.8a. shows two sine waves, 1 and 2, shifted in a phase by 90° during one period T of the oscillations. Thin dash lines project the extreme positions of sine waves 1 and 2 onto two normally shifted coordinate axes 1 and 2 respectively. Furthermore, wave 1 is being projected onto axis 1, while axis 2 serves for wave 2. What is important to note here is that axis 1 and axis 2 are spatially shifted by 90°. This shift corresponds to a different orientation of the physical landscape. Fig.1.8b. and 1.8c show the resulting vector – the spinning vector. Its current position is defined by the maximum of one of the two waves. As seen from pictures 1.8b and 1.8c, beginning from the moment of 0, the resulting vector rotates step by step spatially for each of the quarters of the period. The directions of the rotation are opposite to each other for Fig. 1.8b and 1.8c.

As far as the relation between the spinning electric field and anomaly places is concerned, we have to note the following. Rotational motion got a special status in physics during last decades. It was revealed that rotation influences Space-Time metrics.

The great merit of that belongs to a prominent Russian astrophysicist N.A. Kozyrev (1908-1983). He proposed the theory stating that time and rotation are closely interconnected. To verify it, in the 50s, he conducted a large series of experiments with gyroscopes and found that the weight of the gyroscope depends on the angular velocity and the direction of rotation [36, 37]. Although the observed phenomenon was pretty small (insignificant fraction of percent), it was completely confirmed by other scientists. There is one major condition of reproduction of these experiments: the gyroscope must be in a state of non-stationary rotation.

Spinning electric field can be considered as a virtual gyroscope. Naturally generated spinning electric fields meet the requirements of the non-stationary rotation.

Kozyrev found that the fractional weight variations are proportional to linear rotational velocity *u* of the body:

$$\frac{\Delta Q}{Q} = \frac{u}{c_2} \tag{8}$$

The constant c_2 was considered by Kozyrev as a "cause to effect conversion rate". It was found from his experiments that $c_2 = 700$ km/s.

When considering the spinning electric vector, we have to note that, unlike real mechanical objects, it can reach both c_2 and the speed of light c. This can result in interesting consequences. When rotating, the end of the electric vector of radius R can reach and exceed c_2 . Formally, according to expression (8), it means that the field can experience a gravity reduction (or increase it – depending on the direction of the rotation). These changes have to be equivalent to space-time variations. It happens at some critical frequency f_{crit} .

It is interesting to note that for the natural landscape ($d \sim 10^2 - 10^5 \text{m}$), f_{crt} can be of the order of $1-10^3 \text{Hz}$. The lower limit coincides with a range claimed by Fran DeAquino for diminishing gravitational mass to zero in electromagnetic fields [34, 35]. The upper limit represents the range used in electronic dowsing and bio-location. Formally, according to the accepted above terms, it means that at the higher frequencies, the system will experience the condition of antigravity. Distortions of Space-Time metrics can be accompanied by generating so-called "elemental" particles. Generally, all of this creates the conditions for originating anomalous zones.

Beside the natural sources of formation of the spinning vector, the modern industrial society generates one more: distorted EMF produced by the power lines and various equipment, **Fig.1.9**. As seen from Fig.1.9, this portion of the 60 Hz sine waves has obvious distortions, which produce higher number harmonics. The modern industrial world widely uses non-linear devices and equipment, which produces these harmonics. As the spectral measurements show, the harmonics within 2-10 kHz are so intensive, that they can compete and exceed the discussed above super long electromagnetic waves produced by the earth-ionosphere resonator.

Speaking of the influence of external electric fields on human health, we want to set fourth our interpretation of existing personal zones around a human being, [21]. Allan Pease shows four such zones: an intimate zone (15-45 cm), a private zone (46 cm - 1.22 m), a social zone (1.22-3.6 m),

and a public zone (over 3.6 m). We consider that forming the said zones is caused by a human organism's own electric field, produced by body organs. Such a field and its patterns are a mirror of organs' functioning (Fig. 1.10.). [22]

We want to note that the most intensive area of this field corresponds, by a distance, to what is called an intimate zone (15-45 cm around a body). The electric field around the body is a vector sum of the body's own field and that of the earth origin. The thermodynamic equilibrium of the body-environment system is achieved under minimum free energy, which is here the energy of the total field. The intrusion of another object into the intimate zone disturbs the field and increases its energy, which violates the equilibrium. Taking into consideration a square character of energy versus intensity dependence, it has become obvious how sensitive this equilibrium is. The distortion of patterns of a human electric field can disturb organs' functioning and eventually cause organic problems.

In our view, one of major causes of mass illnesses in urban areas originates from the distortion of a human electric field in the intimate and private zones. This is what takes place in anomaly zones, where an external field distorts patterns of a human congenital field.

There is a remarkable relation between classical studying electromagnetic components of human nature, on the one hand, and how The Ageless Wisdom considers it, on the other hand.

Dr. Ribhi M. Kalla, the President and Dean of The Ageless Wisdom University writes: "The Ageless Wisdom Teaching states that the aura is an electromagnetic field surrounding the human form. It is a colorful, scintillating body of energy with an average diameter of approximately 2.5 feet, but may go well beyond that measurement depending on several factors. For example, the aura's size may be determined by the physical, etheric, astral, mental, and spiritual health of the individual's personality. In turn, the level of vibrations within the aura is reflected in the health (or weaknesses) of the physical body, but also the radiation of the etheric, astral, and mental vehicles, the soul, and the spark of the spirit in the individual personality. In humanity, the levels of consciousness, awareness, and beingness vacillates; these increase and decrease in coordination with energy and vibration of their electromagnetic fields".

5. EARTH'S ELF ELECTRIC FIELD AND SUBTERRANEAN WATERS

The importance of the interaction of ELF Earth's electric field and subterranean waters deserves a special consideration. The intensity of Earth's electric field equals 130V/m at the ground level. This intensity

exceeds drastically the one for super long electromagnetic waves, which makes its contribution considerable.

As it seems to us, turbulent subterranean and surface water flows can modulate the intensity of the second sources field over water level. The modulation occurs due to the fluctuation of effective dielectric permittivity of water tract caused by a turbulent flow and collapsing air bubbles. Unlike a curl electric field of an electromagnetic wave, this field remains potential in its nature.

There is a possibility of a special phenomenon when the Shuman ELF waves superimpose on ELF modulated field considered above. As their frequency spectrums can overlap, while directions of vectors can be orthogonal, there are perfect conditions to form a rotating field if there is a phase shift between vectors. The presence of the said phase shift looks much more probable than a phase coincidence. As the intensity of the potential fields drastically exceeds that of the Shuman wave, the end of the resulting rotating vector spins an ellipse rather than a circle. Such a scenario is possible both in the vicinity of a waterfall and over subterranean waters.

Let us estimate the energetics of such a process. One considers the modulation of Earth's field by alternating water-bubble-water sections in a turbulent water flow. According to (4) and (5), for Earth's field ~100 V/m, one gets σ =2•10⁻⁹ C/m² on the water-air border. The field produced by these charges is 2•10² V/m. Under modulation, when water and air bubbles follow alternatively, this field deviates from 100 V/m to 200 V/m that is this process produces 100 V/m alternating field above the water flux. Let us also consider how much the electric potential changes according to (6). The estimation also can be done according to the definition of electric field intensity as a gradient of an electric potential taken with the opposite sign. The result depends on a total surface of the water and the distance between the water and the point of measurement. If the radius of the water area is 10 times bigger than the distance, then, at the level of 1m above the water, one gets ~100 V alternating potential. The characters are rounded off for convenience.

From the examples considered above, one sees that water doubles the intensity of the original field. Therefore, the oscillations produced by the process considered above have a swing that equals the intensity of the original permanent field. A turbulent-water-flow works like a Permanent Field-to-Alternating field converter.

The frequency of such oscillations is defined by the velocity of the water flow and the distance between the adjacent sections. The estimation shows that the frequency range can be located in ELF band and coincides with the frequencies of the electric activity of a human brain. The modulation of the intensity of Earth's field can be drastic, as it follows

from the example above. The said explains why the electroencephalogram of a dowser reacts to a water flow. On the other hand, permanent living in such places can cause health problems according to the process described above.

The influence of ELF on a human brain was studied in [23] and others, where it was found that a brain reacts to external ELF. Sometimes it looked like a brain was fighting the ELF to maintain its own frequencies. The resistance was characterized by low amplitude beta frequencies in 15–20 Hz range. Other physiological effects were also noticed.

The likeliness of water-modulated Earth's field and human EEG was shown experimentally in this research. The results are shown in *Experiment* section.

In order to evaluate the degree of the risk more objectively, complex criteria are suggested. If one takes the result obtained by an operator with a physical instrument for X and that for a dowser for Y, the complex presentation is Z = X + jY, where $j = \sqrt{-1}$. To estimate the complex result, the modulus of that value $|Z| = \sqrt{X^2 + Y^2}$ has to be taken. Such an approach allows combining an ancient wisdom and contemporary technology.

6. THE INFLUENCE OF THE BIOELECTRIC ACTIVITY OF AN OPERATOR ON THE READINGS OF A MEASUREMENT INSTRUMENT

All known measurement instruments used for electronic dowsing are based on the measurement of either magnetic or electric field distortions of the medium caused by physical heterogeneities of a geological relief. Attempts to increase the sensitivity of the instruments make them sensitive to the fields of the bioelectric activity of an operator. When dowsing, an operator holds the apparatus close to the body. The intensity of his electromagnetic field can be compared to that of the measured one. In our experiment that will be described further we observed the influence of the electric potential of the operator's legs on the readings of the Indicator of Geophysical Anomaly (IGA-1) developed by Y. Kravchenko, [9]. The indicator is an electrometric phase shift meter with 10¹² Ohms input impedance.

The instrument measures the phase shift of the electric vector of a natural super long electromagnetic wave when operating inside anomaly places. Its operating frequencies are 5 and 10 kHz. One of the versions of the instrument was supplied with batteries without a power cord. The instrument reacted to the operator's bending his legs when walking. It was even sensitive to the contraction of the leg and arm muscles when the operator was not walking. The physical activity of leg muscles can

generate electric pulses with a potential of tens of mV. Such a pulse has a wide spectrum that overlaps the bands of spectral sensitivity of the meter. Grounding the body of an operator eliminated the problem partially. Nevertheless, our measurements showed that the magnetic activity of human muscles, produced by weak currents while contracting, remains in ELF range and can influence the readings of dowsing apparatuses with magnetic field sensors.

Taking into consideration the great role electromagnetism plays in a human body, it should be noted that a physical condition of the operator also influences the reading. Dr. Ribhi Kalla notes "...the electromagnetic field of an individual who operates your instrument will have a direct influence upon the reading. In addition, I feel that an operator of these instruments who consume drugs or alcohol would have also an effect upon the reading".

7. THE INFLUENCE OF ELECTROMAGNETIC APPARATUSES

Electromagnetic apparatuses create a spectrum that overlaps bands used in electronic dowsing. The intensity of their fields can exceed that of the fields taken as criteria of anomaly. One has to make distinctions between radiation and emanation processes accompanying an electromagnetic activity. Depending on the configuration of the electromagnetic system and the distance between the source of energy and the receiver, one of these processes can be dominating.

While a square law of attenuation characterizes the emanation, the radiation is diminished hyperbolically. For instance, there are two zones around a transmitting antenna of Hertz vibrator type. The near one, or a Coulomb zone, is characterized by a dominating non-curled electric field and its rapid square-law decrease, while the field in a far one, a wave zone, is a curl-like by its nature, attenuating according to a 1/x law and propagating far away. If the configuration of an electromagnetic apparatus produces a changing magnetic field, the curl of the electric field originates right at the site and there is no Coulomb zone. These circumstances have to be taken into consideration when designing electronic dowsing instruments. The choice of a sensor depends on the nature of an electromagnetic field in the area being scanned. For instance, our measurements of the spectrum of working computer monitors have revealed that there are intensive lines produced by the deflection system of a vertical scan generator. The energy of the magnetic field spectrum at 5 kHz, where the instrument works, reveals the intensive line, which is the 58th harmonic of the vertical deflection field. Its intensity at 1m from the screen is 20 dB more

than that of the background noise. The instrument we used has a capacitor-like sensor. In a case of a magnetic field sensor, the problems with the magnetic fields of working monitors were unavoidable.

8. THE INFLUENCE OF FLORA ON DOWSING. TDR-DOWSING

As it was said above, dowsing is based on the influence of the environment on electromagnetic processes on Earth's surface. Dowsing originated from searching subterranean waters. In our study, we explain the mechanism of dowsing as the influence of water on propagating electromagnetic waves. Vectors of electric and magnetic fields describe the propagation. These vectors have a complex nature, and their components depend on relaxation process in water. As pure water is characterized by only one relaxation time, that dependence keeps its character in a wide range of electromagnetic spectrum up to GHz band, where the relaxation processes reveal themselves. Up to that range, electro-physical properties of water remain invariant. Nevertheless, water manifests its ability of a frequency-dependable polarization when combined with other media as it was shown above.

Unlike water, the plants have a multi-relaxation electro-physical nature due to the expressed heterogeneous structure. Their dielectric permittivity demonstrates strong dependence on frequency, **Fig. 1.11**.

On the other hand, the dielectric permittivity is unusually high at low frequencies. Plants, which for 70-90% consist of water with a relative dielectric permittivity of 81, demonstrate their own permittivity up to tens of thousands units at low frequencies. These both circumstances predestine the ability of plants to disturb an original electromagnetic field. That has to be taken into consideration in electronic dowsing. Unlike hidden structures of the earth, yet remote from an instrument, plants are located on a surface close to a measuring apparatus. Their influence can exceed that of geological structures. We can say that flora is a serious competitor to water and other media in dowsing and it cannot be ignored.

A new method to monitor vast tracts of plants and forests was introduced in the former USSR in the 80's and was developed later in the USA, [24, 25]. The method is based on a Time Domain Reflectometry [26], TDR, which deals with propagating a flat electromagnetic wave initiated by an electric pulse traveling along an electric line. While propagating, the pulse experiences reflections from the heterogeneities of the line, which is displayed on the screen of TDR-instrument. The novelty of the application of TDR for monitoring tracts of plants is that the probing line and the tract form a waveguide. The traveling wave which is scanning the

surrounding medium experiences a reflection from any heterogeneity in plants medium: changing the density of plants, condition of green tissue, variation of moisture and so on. The reflected signal, which is seen on the screen of TDR-instrument, brings the information about the distribution of the physical condition of the tract along the probing line (Fig. 1.12.).

The method can evaluate the flora for hundreds of miles. The influence of the density of plants and electro-physical characteristics of green media on propagating traveling waves was shown. Analysis of the contribution of the heterogeneity of plants to the complex dielectric permittivity of the medium, depending on the distance from the line, was accomplished.

To evaluate such a complex system as the tract of plants, the definition of effective dielectric permittivity of the tract, $\epsilon_{\mbox{\tiny eff}}$ was introduced. While the shown in Fig. 1.11 refers to plant tissue, effective permittivity is a characteristic of the whole system of plants. The dependence of $\epsilon_{\mbox{\tiny eff}}$ on the contents of water was shown in [25]. Later, as a further development of TDR-probing plant tracts, the author derived a simple relation between filling coefficient F and $\epsilon_{\mbox{\tiny eff}}$. The filling coefficient shows the ratio of the volume of plants to the total volume. It was shown, that in a wide band of probing frequencies up to hundreds of MHz that relation looks like

$$\varepsilon_{\rm eff} = (1 - F)^{-1} \tag{9}$$

for the tracts with developed surface of leaves rather than stems, i.e. frequency dependence of the permittivity of the tissue can be neglected. Depending on the thickness of the tract, ϵ_{eff} can vary from a unit to several ones.

The analysis of the contribution of tracts of plants in the readings of electronic dowsing instruments can be done basing on equations (3), (4) and (5). We consider a "sandwich" consisting of a soil layer of 10 m thickness and a 1 m thickness green tract growing on it. We take the tract as a whole entity. In the measurements accomplished with a TDR-instrument, eff was found to be 2.4 under 80% of water in plants for some tracts, [25]. Then, for 10 kHz, putting ρ_1 =10² Ohm•m, ϵ_1 =2.0 (the soil) and ρ_2 =10⁴ Ohm • m, $\varepsilon_2 = 2.4$ (the green tract), we get $\phi = 8.6 \cdot 10^{-1}$ °. The calculation for the soil alone brings $\phi = 3.6 \cdot 10^{-3}$ °. The relaxation processes in the green tract cause such a difference. The difference in phase shifts can be even much more, depending on the number of plants per square unit. Employing formulas (4) and (5) reveals elevated intensity of an electromagnetic field over the tract of plants. These calculations show that plants can cause a false reading. One visible way to avoid that is to check the measurement with a sensor located next to the ground rather than over the plants. Direct contacting the sensor and the plant can distort the reading due to a disturbed field around an object with high dielectric permittivity.

Relations of TDR and dowsing are not limited by the evaluation of the influence of plants on dowsing. TDR itself can be a prospective method of dowsing. The portion of an electromagnetic wave, which propagates along the probing wire, travels inside the soil. The less conductivity the soil has, the deeper it penetrates. This opens the way to develop a TDR-dowsing, where scanning can be done by a radial probing wire moved by steps along a circle. This new approach promises to be productive because the monitor displays the distribution of heterogeneities along its length at once.

9. THE EXPERIMENT

The experiment had a purpose to reveal a spectrum of Earth's electromagnetic field both under natural conditions and in a modeled environment. Studying the influence of water streams on Earth's electromagnetic spectrum, which defines electrophysiological activity of human beings, was an essential portion of the experiment.

To realize this purpose, a special experimental installation was designed (Fig. 1.13.).

To measure the electric component, a differential electrometer was designed. The input stage of the electrometer was performed on field effect transistors (FET), whose conductivity depends on the electric potential of a control electrode (gate) connected to a metal plate placed in the studied field. The field induces surface charges on the plate, causing changing in the current of FET. Another identical FET, not connected to external metal plate, serves as a reference to compensate unwanted deviation of the residual parameters of the input stage. The magnetic component of the said electromagnetic field was studied with a wide-band coil. Both the electric and magnetic sensors were connected to the input of the spectrum analyzer via a commutating switch.

The electromagnetic spectrum was measured in a range of $5\mathrm{Hz}-22\,\mathrm{kHz}$ for the electric and magnetic components. The spectrums were recorded with SpectraLab digital spectrum analyzer. The instrument performs Fast Fourier Transformation (FFT), which transforms original time-domain signal from the sensor into a frequency-domain form. The analyzer enables recording the spectrum both in a traditional 2-D frequency-relative amplitude format and quasi- 3-D mode with a time representation. The SpectraLab analyzer performs statistic averaging the signal, which enables to minimize the influence of random factors.

Most of the measurements were conducted during springtime, in April-May. Specifying a season is no coincidence here. As it was mentioned above, an electromagnetic activity of Earth and its atmosphere depends on a season. This also was notable in our experiments. The intensity of the electric field measured in August by our electrometer was several times as less as its value in March-April. All the described phenomena basically remain valid during the whole year. What does change is their magnitude.

Fig. 1.14 shows a 3-D spectrum of the relative intensity of the electric field in the room. There is an apparently visible 60 Hz industrial field and its harmonics. This is a curl electric field by its nature. Although the original carrier has a pure sinus shape, there are a lot of non-linear magnetic devices around (special transformers, thyristor-controlled circuits and so on), which generate the harmonics. The presence of a 60 Hz field and its harmonics has to be taken into consideration when choosing the proper bands for dowsing.

The spectrum can be subdivided into two major regions: a dependent 5Hz -3 kHz area and a 3-10 kHz band pass with 6 kHz maximum. It seems to us that the dependent region is the manifestation of Shuman waves driven by the electromagnetic radiation from Van Allen belt and lightning. These waves are realized in a waveguide corridor formed by Earth's surface and the lower border of ionosphere according to the conditions considered above: an integer numbers of half-waves have to be placed inside the corridor engirding Earth. The major modes of these waves are located in the range of tens of Hz. Life on Earth was developed in a balance with this field and imprinted its electric patterns in the physiology of all the living. A 6 kHz maximum band is originated by another structure - a resonator formed by the ground and the lower border of ionosphere. Unlike the engirding wave corridor considered above this resonator extracts waves propagating normally to the ground. Another difference is its smaller size. For the 6 kHz-maximum, the wavelength corresponds to 50 km, which is in agreement with the altitude of the lower border of ionosphere.

As far as Earth's natural electromagnetic field is concerned, one can see its slow fluctuation, especially in a low frequency range shown in 3-D-like time variation of the spectrum. The said variation with a frequency of fractions of Hz can be a manifestation of a flicker noise — a fundamental phenomenon of the Universe. In this particular case, this can be a variation of electromagnetic radiation of Van Allen belt. This is a layer over Earth, where charged particles arriving from space experience twisting their trajectories in Earth's magnetic field and radiate as a result of that. Both the intensity of a flux of particles and the intensity of Earth's magnetic field can be subject to flicker process. The flicker noise of Earth's electromagnetic field has to be taken into account when developing instrumental dowsing techniques.

A human organism produces an electromagnetic field as a result of its activity. We have mentioned this circumstance above. To evaluate its influence on the readings of dowsing instruments, the spectrum was observed both in natural conditions and in the presence of a walking operator. **Fig. 1.15** shows the original spectrum of an electric component of the field (the blue curve), and the spectrum with a walking operator present (the yellow line). As seen from Fig. 1.15, electric impulses generated by contracting leg muscles have a wide spectrum, superimposed on the original spectrum of the earth and drastically increasing the intensity of the field, especially in the low frequency range. The difference reaches as much as 40 dB (100 times) at 8 Hz, when the distance between the measuring electrode and the operator is 0.5m. The influence of a human-related field tapers to high frequencies. The phenomenon was drastically reduced after the operator was grounded by means of wearing special grounding strip on a wrist. Grounding an operator, as we see, is one of the necessary requirements for scientific dowsing, when working with the electric component of Earth's electromagnetic field.

As far as a magnetic component is concerned, its spectrum looks more homogeneous, with the inclusion of the lines of a 60 Hz industrial field and harmonic lines. The magnetic component of the electromagnetic pulses generated by human muscles when contracting was observed too. Unlike the electric component, this one cannot be eliminated by means of grounding an operator.

As it was considered above, the energetic contribution of standing water in dowsing is explained by forming second sources of a field – induced charges. Their field adds to the original one, enforcing it. **Fig. 1.16** shows both the spectrum of the original field (the blue curve), and the one measured over standing water of 0.1 m thickness (the yellow curve). As seen from the picture, an average gain of the intensity is 10dB in a wide range of the spectrum.

The low-frequency range of the spectrum plays a tremendous role in the mechanism of dowsing. One of our models depicting the influence of water flows on human beings states that subterranean waters can modulate Earth's permanent electric field, converting it into an oscillating field mostly concentrated in the low-frequency range. As it was considered above, this occurs due to modulating earth permanent electric field by turbulent waters, onto which the vector of the field is projected. The following experiment was devoted to this topic (Fig.1.17).

The flux of water was modeled by means of a reciprocating motion of a plastic vessel filled with water. The vessel was not filled completely, which left the water the freedom to move inside. While shaking the vessel with the water with the frequency of a few Hz, a turbulent condition was observed. There were a lot of collapsing bubbles inside the moving vessel, whose collapsing favors the modulation of originally permanent Earth's electric field.

The similarity of the human EEG and the water-modulated field can be demonstrated by comparing **Fig. 1.18** and **1.19**. The former shows a normal EEG, while the latter is the electric oscillations obtained in the experiment depicted in Fig. 1.17, with an oscillation recorder connected instead of the spectrum analyzer.

As it was mentioned above, the power of a water-modulated field drastically exceeds that of human-originated oscillations. So, we can expect obtruding oscillations by an external field, which was really noticed in [23].

Fig. 1.20 and **1.21** show the spectral result of the modulating process. The blue curve is the spectrum of the original Earth's electric field, while the yellow one represents the spectrum generated by the modulating.

As seen from the spectrum, a general gain of intensity is seen all around the spectrum. Most considerable result manifests itself in the range of 5–40 Hz, where the gain reaches 40 dB (100 times) at 10–12 Hz. What is most impressive here, that this is a range of an electric activity of a human brain. Fig. 1.20 depicts changes in the spectrum on an enlarged scale.

Low frequency area shown in **Fig. 1.22** is easy-to-grasp for estimating the influence of turbulent water. Each harmonic of the spectrum is characterized by its initial phase shift in Fourier series. The phase shift is sensitive to any change in a shape of the signal. It is a good indicator of changes in the signal. A phase of electric vector experiences a shift under the influence of a medium with certain permittivity and conductivity as it was shown previously. The case considered above is static by its nature. As to turbulent water, there has to be an additional phase shift caused by superimposing the generated oscillating field on the parent one, as well as the manifestation of instability of the modulated field. **Fig. 1.23** shows the spectral distribution of the phase for the parent field on low frequencies, while **Fig. 1.24** shows that for the field generated under the influence of turbulent water.

The distribution of a phase in the spectrum submits certain rules according to which the phase changes its sign periodically depending on the shape of the periodic signal. This periodicity is notable on these spectrums. **Fig. 1.25** and **1.26** illustrate this for a 5 kHz range. One can see the changes in the phase shift caused by the turbulence.

ILLUSTRATIONS

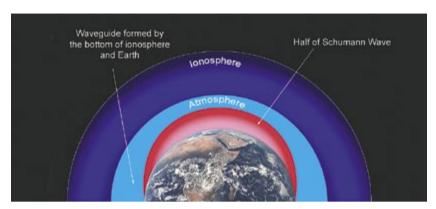


Fig. 1.1a. Origination of the first type of wave (Schumann wave). The waves are supported by the closed waveguide formed by the bottom of ionosphere and Earth. Integer numbers of the half-waves are arranged in the channel. The shown here corresponds to major Schumann wave of 7.8 Hz. The opposide half-wave is located over other hemisphere not shown here.

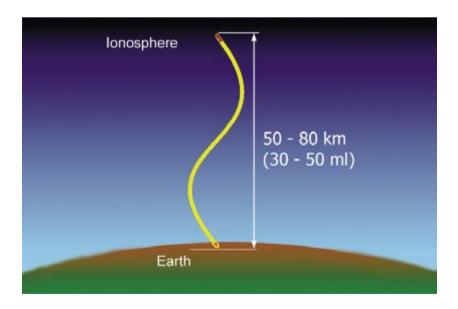


Fig 1.1b. Standing wave formed in earth-ionosphere resonator

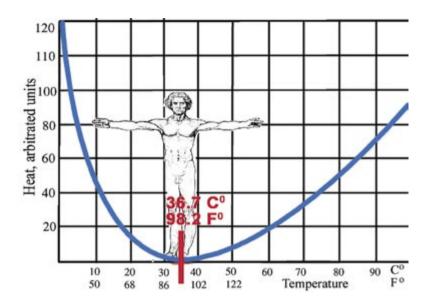


Fig. 1.2. A temperature dependence of specific heat of water (arbitrary units) as a regulating factor of human physiology (Edited from [15])

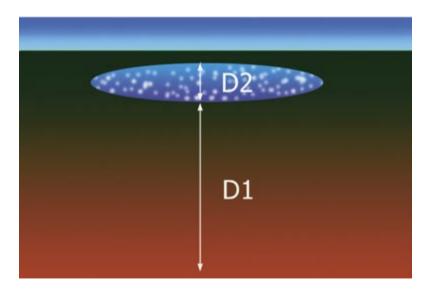


Fig. 1.3. Structure formed by a soil and adjacent water lens

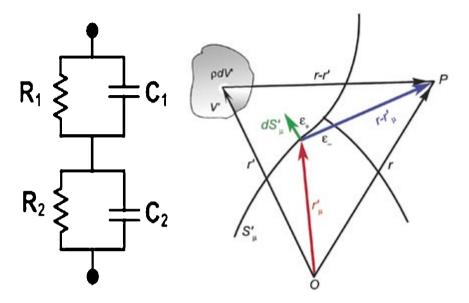


Fig. 1. 4. Electrical equivalent of a heterogeneous structure of Fig. 1.3.

Fig. 1.5. General conception of a Secondary Source Method

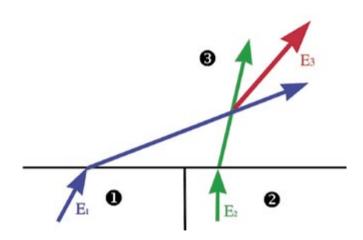


Fig. 1.6. Initial vectors E_1 and E_2 , shifted in phase, form resulting vector E_3 , which experiences rotation

Fig. 1.7. Vector product C of two initial vectors A and Ba

Fig. 1.8. Formation of Spinning Vector



Fig. 1.9. Distorted Industrial 60 Hz Field. This distorted sine wave is rich with higher harmonics, which can form a spinning vector at the certain conditions

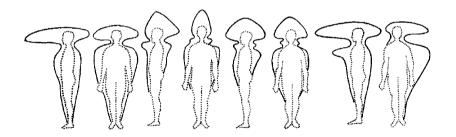


Fig. 1.10. Patterns of an electric field produced by a human body under normal health and different illnesses

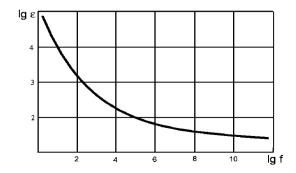


Fig. 1.11. Generalized dependence of dielectric permittivity of plant tissue vs. frequency

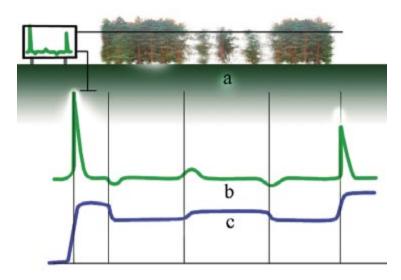


Fig. 1.12. Operating TDR-method in a tract of plants: a) – allocation of an instrument and probing line in a heterogeneous tract; b) – propagating probing video-signal and its reflection by heterogeneities of the tract; c) – propagating front porch of a voltage edge and its reflection

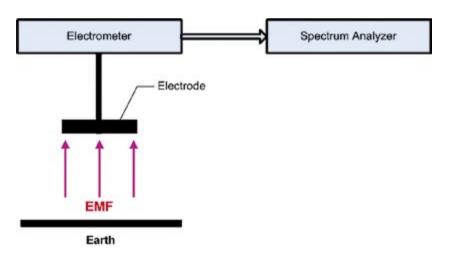


Fig. 1.13. Experimental installation for exploration of spectrum of Earth's EMF. For the Earth's electric field, Direction of arrows of vectors are shown opposite to conventionally accepted for convenience of perception

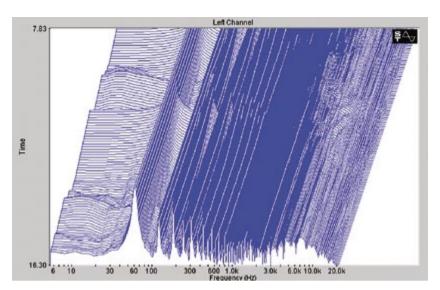


Fig. 1.14. 3-D spectrum of intensity of electric component of EMF in a room

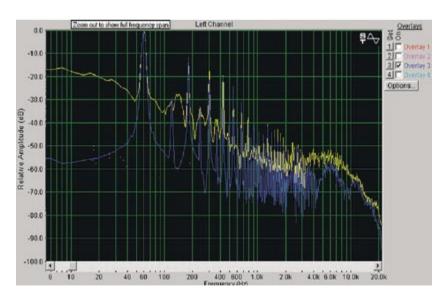


Fig. 1.15. Electric influence of muscle activity of walking operator on the spectrum of the field in a room

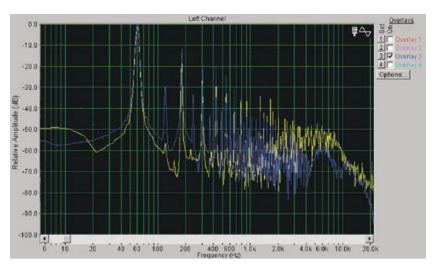


Fig. 1.16. The influence of standing water on the room EMF, blue curve – a parent field, yellow- that over water surface

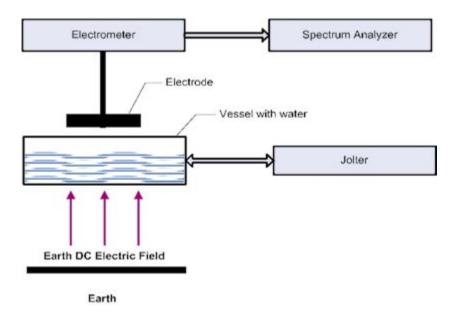


Fig. 1.17. Experimental installation to modulate Earth's permanent electric field. Direction of arrows of vectors are shown opposite to conventionally accepted for convenience of perception

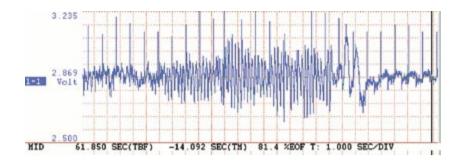


Fig. 1.18. Electric oscillations produced due to modulating Earth's permanent field by means of turbulent water

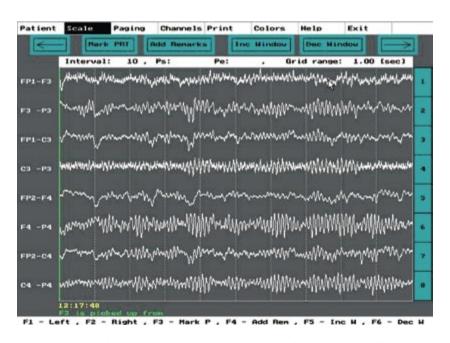


Fig. 1.19. Normal human EEG. Electrodes are located on conventionally accepted points of a head. The picture shows voltages between different electrodes

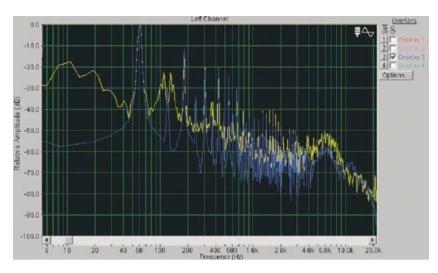


Fig. 1.20. The spectrum of the field in a room with a presence of the modulated component

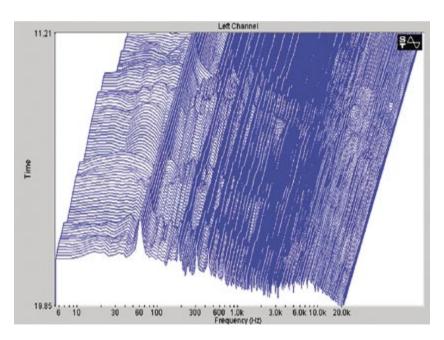


Fig. 1.21. The dynamic presentation of the spectrum under the influence of Modulation

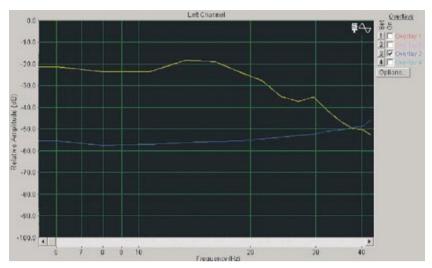


Fig. 1.22. The low-frequency portion of the spectrum shows appearance of additional alternating field (the yellow curve) formed due to modulation process

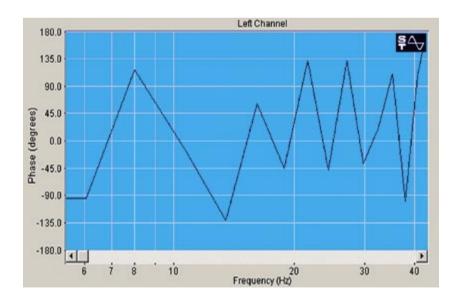


Fig. 1.23. Time-averaged ELF phase distribution of the field in a room

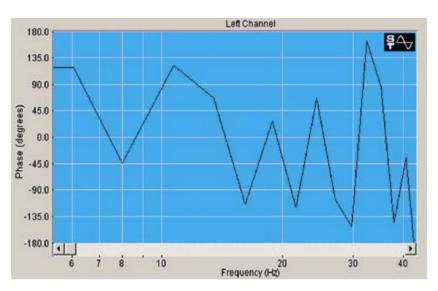


Fig. 1.24. Influence of water-activated modulation on the ELF phase distribution of Earth's field

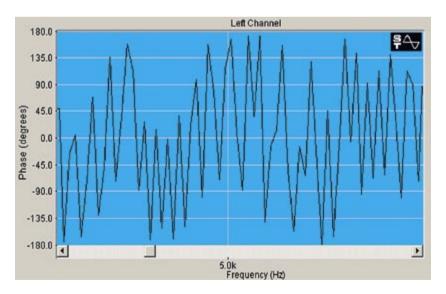


Fig. 1.25. Time-averaged phase distribution of the field in a room, 5 kHz range

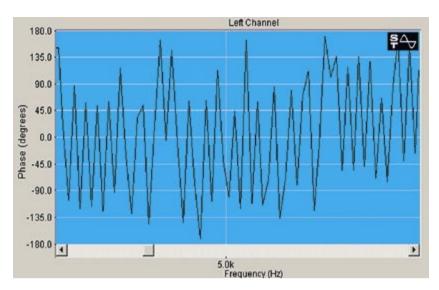


Fig. 1.26. Influence of water-activated modulation on the phase

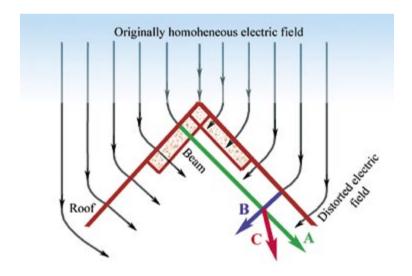


Fig. 2.1. To the explanation of the physical base of poison arrows of Feng Shui: sharp objects (here - the roof) drastically distort Earth's fields, both permanent and alternating ones. Electro physically heterogeneous sharp objects create conditions for originating rotating vector *C* by means of spatial and phase shift of initial alternating vectors *A* and *B* with their further addition



Fig. 2.2. Feng Shui Ruler

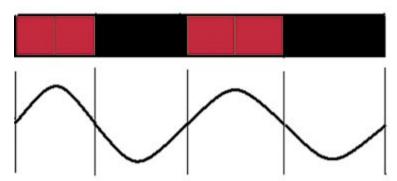
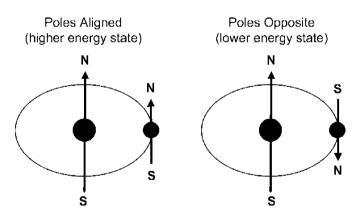


Fig. 2.3. Wave-like presentation of Feng Shui Ruler



A 21-cm photon is emitted when poles go from being aligned to opposite (a spin flip)

Fig. 2.4. Generating 211 mm Electromagnetic Wave (Radio Frequency Photon) When Switching Spin of the Electron in a Hydrogen Atom

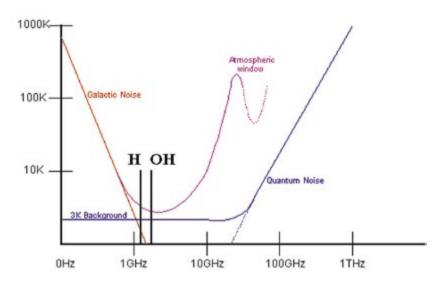


Fig. 2.5. The water-hole is a dissociated water-component-related window in a spectrum of the cosmic noise, prospective for SETI. Scientists believe that any civilization in the cosmos, which possess radio astronomy, know about the Hydrogen Line. The level of the noise is related to the level produced by a heated body (Kelvin temperature scale). The 3K background radiation level is the residual radiation of the Big Bang

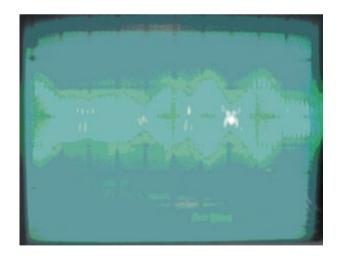


Fig. 2.6. The Voice-Modulated Signal of 6208 Hz, Observed in February 2003 In Adjustment of Electronic Dowsing Instrument

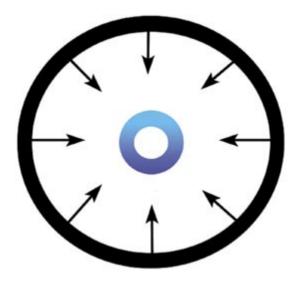


Fig. 2.7. Love of mankind (the big circle) to Supreme Object can be shown as a flux of vectors directed to the Object. The picture is symmetrical by its nature

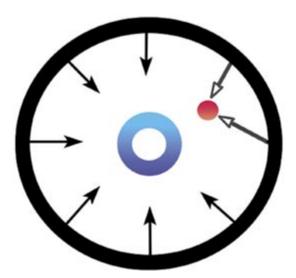


Fig. 2.8. Venerating local deities (the red circle) breaks the initial symmetry by means of distorting the vector flux

II. BEYOND THE DOWSING AND FENG SHUI

Both dowsing and Feng Shui are the products of human ancient wisdom and experience. Their attributes have much in common and can be explained today on the basis of contemporary physics. Feng Shui is subdivided into two major schools – compass and landscape ones, [27, and 28]. The former mostly considers the relation between a human life and the allocation of a human dwelling related to its position in Earth's magnetic field. The latter mostly emphasizes the dependence of living upon the allocation of local landscape details like rivers, waterfalls, roads, shape of paths to a dwelling, hills and so on. A philosophic basis for that is manifested in **Yin** and **Yang** dualism of everything. The major attributes of both schools and their keywords like chi energy, sha, poison arrows and others can be explained in terms of physics paradigm. The spirit of topology is seen both from Feng Shui postulates regarding the location of a human dwelling relative to roads, and the recommendations of Feng Shui concerning the location of windows, doors, stairways, beds, etc. in a house. Although the topological approach is expressing itself in the Unified Field Theory and is related to electrodynamics and other disciplines, it still remains the object of theoretical physics rather than a workaday tool to explain some phenomenon of dowsing and Feng Shui. No doubt, its time is coming. Nevertheless, already today, we can find a reasonable explanation of those things within traditional physics.

1. POISON ARROWS

In Feng Shui, a great deal of attention is devoted to the so-called poison arrows. Let us consider that in terms of thermo- and electrodynamics. Poison arrows – sharp things, some kind of trees, picked and triangle roofs, sharp corners of buildings, etc. - cause a distortion of an electromagnetic field. An example of this phenomenon is shown in **Fig. 2.1**, where the interaction of a triangle roof and an originally homogeneous field is con-

sidered. The surface of the roof deflects the field's lines of force. A metal roof produces the most dramatic result, although the influence of other materials is still considerable.

As seen from the picture, vector \mathbf{A} passes through a wooden beam, while vector \mathbf{B} doesn't. While passing through the beam, vector \mathbf{A} gains a phase shift relative to the original field. Due to the influence of the roof, both the vectors are allocated almost normally inside the roof. There are all the conditions to form a resulting rotating vector: two initial vectors, whose alternating fields have the same frequency but shifted in phase, placed at an angle. Vector \mathbf{C} is the product of vectors \mathbf{A} and \mathbf{B} . It experiences a spatial rotation.

Understanding the mechanisms of dowsing is impossible without knowing the niche, which it occupies in the hierarchy of levels of matter. In this regard, it looks beneficial to mention and analyze other fundamental phenomena, the knowledge of which came to us from the past and now is timely more than ever in the light of mzodern paradigm. Let us consider some of them.

2. FENG SHUI RULER

Chinese carpenters posses a simple measurement tape, which allows them to estimate at a glance if the dimensions of the attributes of our dwelling fall under the definition of auspicious or inauspicious. A general image of a portion of Feng Shui ruler is show in **Fig. 2.2** (from [28]).

The ruler consists of the sequence of alternating auspicious (red) and inauspicious (black) zones. The length of each zone equals 54 mm. What is the general impression of the ruler? It resembles a wave, **Fig. 2.3**. Its wavelength is 216 mm. What kind of wave is that?

A fundamental ancient knowledge Feng Shui is descended from cosmic processes, where we have to look for the proper analogies.

The interstellar hydrogen is one of such fundamental realities of the Universe. It has a unique spectral line at the frequency of 1420.40575 MHz, which corresponds to 211 mm wavelength. The line is formed by the radiation produced due to switching the spin of the only electron of hydrogen atom, **Fig.2.4**. In **Fig.2.4**, both the nuclei and the electron have their spins, which act like elemental magnets. A spin flip switches poles of one of them, which gives birth to the said radiation.

It attracted attention of scientists after Even and Purcell at Harvard University detected its radiation from space in 1951. This 21.1cm line is allocated at the bottom of the so- called Microwave Window – the band of the electromagnetic spectrum between 1-10 GHz, where a noise is minimal and, therefore, it is acceptable for a signal exchange in the Universe.

This is one of the major frequencies used for Search for Extraterrestrial Intellect, SETI, an international program currently involving a wide network of personal computers, **Fig. 2.5.** (http://www.setileague.org/general/waterhol.htm)

Is it just a chance that the wave of Feng Shui ruler matches the interstellar hydrogen wave by its wavelength? We do not think so. The 21.1 cm wave can be a universal carrier of information in the Universe. Moreover, an important role of the hydrogen in everything, particularly in the interactions of its electron in physical and chemical bondages, makes this line an indicator of energy-information exchange. Energy and Information can be clue words of Feng Shui too.

There is, of course, a room for skepticism. What should we do with these 5mm discrepancy in the wavelength? It is just 2.3%, but this gives a chance to opponents to argue with this hypothesis. However, there are also some pro-arguments. On the one hand, this 2.3% difference can be explained as a natural error of a measurement. Feng Shui is an ancient discipline, and the error might have accumulated through millenniums due to a natural aging of materials used for the Ruler.

On the other hand, there is a more interesting argument in support of this hypothesis. In our view, this 2.3% discrepancy is in a good agreement with such fundamental processes like a Red Shift caused by the receding Universe originated by Big Bang. Due to Doppler phenomenon, the light coming to us from far distant regions of the Universe is shifted to the red portion of the spectrum. Although astronomer Hubble, who discovered the red shift in 1929, found it to be 0.0033%, the shift depends on the area of the Universe the light comes from. The velocity of the receding Universe depends on the distance: the greater the distance is, the greater the velocity of receding is. Today, astronomers are armed with much more powerful instruments that allow them to look in more remote areas of the Universe, which bring imposing red shift.

Following 2.3% of the shift of 21 cm radiation, the calculations according to Doppler formula bring the velocity of a receding object to as much as 7109 km/s. Hubble found this speed to be 1000 km/s according to 0.0033% he obtained.

As far as a spin-switched nature of that 21 cm radiation is concerned, we have to emphasize the relation of the polarization of the produced electromagnetic wave and the sign of a torsion field accompanying this process. The radiation of this electromagnetic wave is an indicator of changing clockwise/counterclockwise origination of the spin-torsion wave. Taking into consideration the opposite influence of the direction of the original spin on a human organism, we can assume that the nature of alternating "good-bad" zones on the Feng Shui ruler is descended from a "good-bad" nature of the torsion field accompanying a 21 cm radiation. Alternatively,

vice-versa: the 21 cm wave caused by the mentioned cosmic processes and supported by a local resonant condition of the object stimulates switching spins of the object with all the consequences.

One more interesting possible experiment inevitably comes to mind. It is logical to suppose that all these things are related on topological level as it was mentioned above. The borders between auspicious and inauspicious zones can be a place where this 21.1 cm radiation can be detected. There can also be a change in other characteristics of such a wave, let us say, polarization, depending on the direction of scanning.

Following the above data, we think there is a profound reason to consider Feng Shui Ruler as an implementation of an ancient experience directly related to fundamental cosmic phenomena.

3. THE SEVEN CIRCLES OF HELL

Kabala, an ancient Jewish teaching, adapted by Christianity in the Middle Ages, about the relationship of human beings and the Universe, and achieving harmony with the world, depicts the structure of the Hell in one of its chapters. According to Kabala, the Hell consists of seven circles filled with raging fire. The temperature of the first level equals that of an ordinary earth flame, while each of the following levels has the temperature 61 times higher than the preceding one.

Some modern schools of philosophy consider the idea of Seven Circles of Hell in the light of soul developing. The Circles are the manifestation of outside-time dimension where the soul sees all the faults committed in the previous life, experiencing suffering, purging and choosing such a scenario of next life where it can be a victim of the evil committed in the previous incarnation.

We believe that Physics is what stands behind all of that. If yes, there has to be a link between data we find in Kabala and some fundamental characteristics of the Universe.

Let us consider the data. The temperature of the first level-circle is that of a regular flame, roughly 2000°K. Taking into consideration 61 times gain of the temperature for each next level, one can calculate that the temperature at the seventh level will be $2000 \times 61^6 = 10.3 \times 10^{13}$ K. From here we can calculate a temperature potential kT, where k is a **Boltzmann's** constant, $k = 1.380 \times 10^{-23} J \times K^{-1}$, the temperature potential equals 14.35×10^{-10} J. This is activation energy of some fundamental process, which can be characterized by some wavelength. Taking into account that kT = hv, where h is **Planck's** constant, $h = 6.623 \times 10^{-34} J \times s$, and v is frequency, we find $v = 2.17 \times 10^{24} s^{-1}$, which corresponds to $\lambda = 1.38 \times 10^{-16}$ m = 13.8×10^{-17} m.

This value matches pretty closely the so-called fundamental length, $\sim 10^{-16}$ m, based on **de Broglie** wave of a nucleon, i.e. proton, neutron. The de Broglie waves represent corpuscular-wave dualism of Nature, according to which each particle also possesses a wave property. Although there are other candidates for a role of fundamental length today, this matching plays a great philosophic role. Indeed, the Standard Model, a vanguard of the modern physics in its attempt to explain the origin of Everything, states that quarks and leptons ("elemental bricks" of the World from today's point of view) are acting on a scale of about 10^{-17} m [29, p.45]. What sense can such a matching make?

The world of Seven Circles is a space of our thoughts, which penetrate in the deepest levels of Matter. Thought can change the metric of Space-Time due to the extremely high energy it carries. That is why a thought has to be disciplined. Dirty thoughts have an immense destructive potential. Penetrating into the highest levels of Matter, they change the metric of physical vacuum and project back onto our world in a shape of evil events: wars, natural disasters, illnesses, terrorism and so on. As Tarkom Saraydarian, one of the prominent Teachers of Ageless Wisdom Teaching writes: "One must also note that natural disasters occur after the degeneration of religious, moral and social standards and relationships", [12, p. 117]. To imagine what energy is involved in this process, we note that the density of energy in a nuclear explosion is 10^{14} cm³ (according to E = mc²), while that of physical vacuum reaches 10⁹⁵ g/cm³. That is, one cubic centimeter of vacuum carries a hidden energy of millions hydrogen bombs! We have to understand our individual and collective responsibility in disturbing the structure of the Universe by our fierce emotions and thoughts. Instead of the traditional major question of philosophy – what is primal, thought or matter? – today we see a conception of their inseparable duality on the deepest structural levels of Everything. Our perception of this duality – either a thought or matter – depends on its projection onto our world located on the first level of The Circles.

This abstraction, even though it seems to be not directly connected with mechanisms of dowsing, has an immediate relation to it. The anomaly of a certain place may be caused not only by geophysical reasons, but also by social ones. We can talk about both geopathogenic and anthrop-mental pathogenic zones. The latter are created by human mental and emotional activity. Let us recall Fang Shui, which postulates that such places like jails, hospitals and others, filled with human pain, bring an inauspicious energy to those who settle around. In addition, vice versa, we know many examples of a beneficial energy of places and constructions to which people bring their fair thoughts. Even a long time after such constructions cease to exist, the effect of this energy imprints into the structure of these places.

The last is related to the conception of an *Egregore*:

..."An egregore is a kind of group mind which is created when people consciously come together for a common purpose. Whenever people gather together to do something and egregore is formed, but unless an attempt is made to maintain it deliberately it will dissipate rather quickly. However if the people wish to maintain it and know the techniques of how to do so, the egregore will continue to grow in strength and can last for centuries.

An egregore has the characteristic of having effectiveness greater than the mere sum of its individual members. It continuously interacts with its members, influencing them and being influenced by them. The interaction works positively by stimulating and assisting its members but only as long as they behave and act in line with its original aim. It will stimulate both individually and collectively all those faculties in the group which will permit the realization of the objectives of its original program. If this process is continued a long time the egregore will take on a kind of life of its own, and can become so strong that even if all its members should die, it would continue to exist on the inner dimensions and can be contacted even centuries later by a group of people prepared to live the lives of the original founders, particularly if they are willing to provide the initial input of energy to get it going again.

If the egregore is concerned with spiritual or esoteric activities, its influence will be even greater. People who discover the keys can tap in on a powerful egregore representing, for example, a spiritual or esoteric tradition, will, if they follow the line described above by activating and maintaining such an egregore, obtain access to the abilities, knowledge, and drive of all that has been accumulated in that egregore since its beginnings. A group or order, which manages to do this can, with a clear conscience, claim to be an authentic order of the tradition represented by that egregore. In my view this is the only yardstick by which a genuine Templar order should be measured."

(http://www.chaosmatrix.org/library/chaos/texts/gegregor.html)

4. EVIL AND GOOD: \ SPINNING LEFTWARD – SPINNING RIGHTWARD?

Earlier in this book, considering the behavior of the electric vector in heterogeneous media, we came to conclusion that it can result in forming a spinning vector. It was shown that the vector can spin leftward or rightward, depending on the conditions. The spinning and its direction were related to originating auspicious and inauspicious patterns of human life.

While writing this book, other books have come to the scene such as *Our Transition to Parallel Worlds*, by V.Popova, L.Andrianova and

E.Savelieva. Unfortunately, such a sensational book is unavailable to English readers since it is currently only published in Russian. This is why we want to give a brief analysis of the book:

The book titled *Our Transition to Parallel Worlds* [38] deals with an unusual topic. To be more precise, it's unusual to those who are indifferent to spiritual development, considering it to be something secondary to our everyday problems. Yet, to individuals who understand that each event of our life is a direct effect on our world outlook and our thoughts as well as those who understand that loving the universe by means of following the commandments is a natural way to be part of the universe and survive together within it, this book is a great literary piece. The book, written by Dr. Victoria Popova, Dr. Lidia Andrianova and Mrs. Elena Saveleva, is a result of long standing inspiration received by Dr. V. Popova and was developed together with the co-authors.

A hierarchic universe's structure, crowned with the Absolute «Nothing», and followed by informational code and spectral code of the material world, is a core of the world vision, received by the authors. In turn, the spectral code of the material world is subdivided by the three following by each others levels: the highest energy, the intermediate energy and the energy of crystal structures.

According to the authors, the entire evolution of humanity exists on a basis of conscious-correction cycles. During its evolution, mankind has passed several principal stages designed to improve human souls. Now we are approaching the correction stage. This stage will result in the transformation of mankind in the field-holographic form accompanied by the cathartic process. After the purgative process, the improved souls get their bodies in order to be able to live on the next planet. Our solar system has experienced a few stages like this. Pluto, Neptune, Jupiter and Mars are waste planets who were carriers of previous evolution. Venus is the next planet where the healed souls will be embodied.

Dooms day, where the information imprinted in a physical vacuum will be a witness to what we did in our lives, will initiate the cathartic process. The authors show the nature of this process. The purgative process will generally be painful. The degree of experienced personal suffering will depend on the degree of imperfectness perfect of each soul. Not all souls will pass this process successfully. The outcome depends on our inner spiritual potential and on how we are following the commandments. The survival of human civilization depends on the development of our souls. The authors consider that we are the last generation before the "great transfer." There is time to correct our souls before it becomes too late.

This book, which is written as an informational model, is a tool which helps the authors who posses usual information to acquit their human debt in helping us before it gets too late. This book is intended for everyone. As far as the spinning is concerned, the authors consider that bad thoughts generate left spinning torsion fields, while the good ones produce right spinning. The souls who generate left-spinning fields are unwanted to the universe and will be corrected according to the authors. Does it mean breaking symmetry in the universe? On the other hand, maybe, the portion of the left –spinning dominates today in the universe in order to restore the symmetry? Is Evil and Good relative or are they absolute? How is it related to the symmetry?

The discussing of these questions will be resumed later in this book.

5. PSYCHO KINESIS

Considering a human thought as a powerful tool of changing a material world directly seems something remote from our everyday mentality. But the bridge between them is much shorter. Phenomenon of Psycho Kinesis (PK) is one of the evidences of that. Experiments performed by a German physicist Helmut Schmidt in 1969 at the Boeing Company revealed the direct influence of psychic power on a radioactive decay of Strontium-90. Moved by his initial disbelief in PK, Schmidt came to a startling result that some people can strongly influence the process of the decay. In our days, the PK-idea of Schmidt's experiment can be reproduced by means of Random Number Generators (RNG) operating on the basis of micro controllers [30, pp.79-81]. In this device, the RNG controls the motion of a light spot in a circle-like indicator, which occurs clockwise or counterclockwise with odds 50% by 50% if no experimentalists act on it. The influence of some people with a developed PK-ability can change the motion of the light spot by odds over 10,000 to 1. The great review of PK-phenomena is given in [31, pp.120-132, 149].

In our vision, PK-phenomenon is not as exotic as it seems. Actually, our life is not possible without PK. We don't muse upon the fact that our thoughts somehow trigger real mechanical processes in our body: contracting or relaxing muscles, narrowing or dilating blood vessels and so on. Where is that mediator standing between electric potentials controlling these processes and our thoughts?

6. THE EVIL EYE

The "evil eye" conception came to us from the old ages and is still a reality of our life.

The evil eye is the name for a sickness, transmitted - usually without intention - by someone who is envious, jealous, or covetous. It is also

called the invidious eye and the envious eye. Moreover, it is thought that kids are especially vulnerable to it.

What stands behind this?

We believe that one explanation can be based on the considered above properties of water. It was shown that special treatment of water confers special biological properties on the water.

Back in 1930's, Soviet scientists were conducting experiments on the physical nature of the phenomenon of telepathy, which was then considered a biological radio communication. A well-known fact of the reaction on a look, fastened at a nape, was subjected to experiments with a shielded chamber and metal mirrors. It was noted that a percipient responds not only to a direct look but also to images deflected by the metal mirror. It was derived from the experiment that human eyes radiate the 1.5–1.8 mm wavelength electromagnetic wave, a so-called *sight beam*. Everybody had experienced the action of the sight beam in our live. We involuntarily turn around when somebody looks at our nape. Women are extremely sensitive to a look fastened at uncovered skin on a fold of limbs. They involuntarily cover them, trying to diminish the area of the skin, exposed to the look.

Water is extremely sensible to physical fields. It is a result of its biological properties. One of the authors tested on him the action of such the water and found them to be pretty tangible. Taking into consideration the reported above facts of gaining psychotropic propertied by the laser beamtreated water, it looks realistic that the sight-beam can somehow change these properties. Here we are dealing with the water inside a human body.

The sight-beam is modulated with the emotional information that changes the structure of the internal water causing profound alterations in the organism. Why are kids extremely vulnerable to this? Numerous researches say that babies have a weak biological field, the aura. This thought can be confirmed by other facts claimed by Soviet researchers, the Zelepukhin brothers, in 70–80s of the past century. Experimenting with the de-gassed water, they were able to prove the healing properties of such water. They also came to conclusion that human beings are born with water as a base of the organism. Human organisms experience a "loss of sealing" as aging progresses. However, the emotionally modulated sight-beam can cause distortions of the water structure in earlier age. We consider that replacing distorted water by means of drinking good water is one of antidotes against this phenomenon.

7. SPONTANEOUS HUMAN COMBUSTION

Among the mysterious phenomena in human life, *spontaneous human combustion* (SHC) remains an unexplained and scary. With no visible

causes, kind of lighting origins in a human body, which then catches fire. Finally, only a handful of ashes remain in the body. Such a phenomena was officially registered in police chronicles of different countries. First scientific attempts to explain one of such cases was undertaken back in 18th century. No reasonable explanations were found. Attempts to relate this to a strong alcohol addiction failed because the majority of casualties had no such addictions. However, the following was noted: It is related somehow to a psychic condition of the casualties.

This scary phenomenon manifests locally: while the body is reduced to ashes, surrounding furniture and articles remain safe. Only articles, directly contacting the body, are damaged.

There are theories about Spontaneous Human Combustion:

Alcoholism - many Spontaneous Human Combustion victims have been alcoholics. However, experiments in the 19th century demonstrated that flesh impregnated with alcohol would not burn with the intense heat that is associated with Spontaneous Human Combustion.

- Deposits of flammable body fat many victims have been overweight, yet others have been skinny.
- Devine Intervention centuries ago people felt that the explosion was a sign from God of divine punishment.
- Build-up of static electricity no known form of electrostatic discharge could cause a human to burst into flames.
- Diet An explosive combination of chemicals can form in the digestive system due to poor diet.
- Electrical fields that exist within the human body might be capable of 'short circuiting' somehow.
- Some sort of atomic chain reaction could generate tremendous internal heat.

No satisfactory explanation of Spontaneous Human Combustion has ever been given. It is still an unsolved mystery.

We consider, that this phenomenon is nothing but a cold fusion triggered by human thoughts.

First, what is a fusion?

Nuclear fusion is the joining of two nuclei of light atoms to form the nucleus of a heavier atom. Because of the difference in binding energies required to hold together the particles in the different nuclei, the process can release energy.

The most important fusion reactions involve the welding together of the lightest of all the nuclei – those of the hydrogen atom – to make a helium nucleus. In its normal form, the hydrogen nucleus contains a single particle, the proton, but there are variants, or isotopes, where the proton is joined by one or two neutrons. These variants are called respectively the deuteron and the triton.

In terms of energy release, the most productive fusion is that of deuteron and triton. It produces a helium nucleus, a neutron and 17.6 MeV $(2.8 \times 10^{-12} \text{J})$ of energy.

Fusion reactions are difficult to bring about. The protons in reacting hydrogen atoms carry positive electric charges and repeal each other because of that. The repulsion becomes stronger the closer they come together. To overcome heavy repulsion and reach breakeven point where the reactions produce more energy than is put in, temperature in excess of a 100 million degrees is required. Even at high density (150 g/cm³) and temperature at the center of the sun (14 million C°), only one of 10^{22} collisions between nuclei result in the fusion.

Although namely extremely high temperatures and difficulty in retaining the plasma at such conditions exist, for a long time the hot fusion remains a major prospective source of practically unlimited energy.

On March 23, 1989, the scientific world was stunned by a report written by two British physicists, Stanley Pons and Martin Fleischmann, who claimed achieving the fusion at room temperature — a cold fusion is possible. The attempts to reproduce their results then failed and the scientists were subjected to ostracism and soon left the science realm. Nevertheless, it triggered a continuous process to understand their theories and reproduce their results.

While some scientists still do not believe in cold fusion, other highly qualified researchers believe in its existence:

- George Miley, who received the Edward Teller medal for innovative research in hot fusion and has edited *Fusion Technology* magazine for the American Nuclear Society for more than 15 years. He states that "there's very strong evidence that low-energy nuclear reactions do occur. Numerous experiments have shown definitive results as do my own."
- John Bockris, formerly a distinguished professor in physical chemistry at Texas A&M University and a cofounder of the International Society for Electrochemistry states that "nuclear reactions can occur without high temperatures. Low-energy nuclear transformations can and do exist."
- Michael McKubre, director of the Energy Research Center at SRI International states, "I am absolutely certain there is unexplained heat, and the most likely explanation is that its origin is nuclear."
- Arthur C. Clarke, science fiction writer, futurist, and founder of *Infinite Energy* magazine states "it seems very promising to me that nuclear reactions may occur at room temperatures. I'm quite convinced there's something in this."

Now, we have some reasons to claim a cold fusion as a nature of the dangerous phenomenon of SHC.

Taking into consideration all the written above about PK and energy of human thoughts, we suppose that under certain conditions human thoughts can trigger the cold fusion. As it was shown in Schmidt's experiments, human thoughts are able to influence on quantum processes, changing their statistics. What is actually needed to start a fusion is the gaining of sufficient kinetic energy by reacting nuclei to exceed a potential energy of the repulsion. Even the classic Maxwell distribution shows extremely small percentages of high-velocity particles at room temperature. Definitely, it is far away from the speeds needed for the reaction, but the thoughts might work as a booster to such a process, as it was shown in PK experiments.

Furthermore, as it was discussed above in *Seven Circles of the Hell*, we have some reasons to say that human thoughts can inspire extremely high-energy processes on particle level, and this will be enough to trigger the cold fusion in a human body.

Can be this conception be justified somehow?

Here we have to turn to some sad things: cremation-related process. The actual process of cremation itself normally takes two to three hours. Ashes typically weigh several pounds, and take up a space of approximately 150 to 200 cubic inches. These modern retorts or crematories burn at a temperature of over 2000 degrees of Fahrenheit, (~1100°C) with an afterburner temperature of 1600 degrees of Fahrenheit (~870°C). This high temperature causes the body to combust and consumes itself, allowing the burner to be shut down.

Energetically, the cremation process consists of three stages:

- 1) bringing temperature of the body up to 100°C
- 2) evaporating all the water at this temperature and
- 3) raising the temperature of what remains to up to 1100°C when the body with its remained mass of 15% of the initial one starts to burn itself.

It can be shown that the first two stages for the 60-70 kg body consume as much as 30×10^6 calories $\approx 125 \times 10^6$ J. The remainder has less heat capacitance and mass so that the energy needed to raise its temperature for 1000° C can be estimated to 10×10^6 calories $\approx 42 \times 10^6$ J. The total energy needed is about 167×10^6 J.

The Spontaneous Combustion usually incinerates a portion of the body, so the real energy is less than the shown one. The initial energy needed to activate the process can be much less. The initial cold fusion can start in a point-like volume due to the free hydrogen atoms in air microbubble. The free hydrogen atoms can be produced in one way or another inside a human body. This is a potential fuel for the reaction. What triggers it is a thought. Then it runs like a chain reaction: the temperature raises and triggers new acts of the cold fusion, which raise the temperature again, which brings more fusion collisions and so on.

To initiate the fusion, hydrogen nuclei have to have a velocity of $\sim 10^5-10^6$ m/s. This is the speed gained by hydrogen nuclei inside the sun. Maxwell's distribution of velocities shows that even at the temperature of the human body there are molecules of the hydrogen whose velocity can reach $\sim 10^4$ m/s. The percentage of them is a small but finite value. Does it look so unbelievable that some external factor can increase the velocity of some of them 10 by 100 times in a limited volume? Let us recall the PK experiments of Schmidt and others where experimenters could increase chances of nuclear event as much as 10,000 times! If so, appearance of molecules with velocities of 10^5-10^8 m/s is possible at room temperatures. A simple calculation shows that a mean velocity of nuclei at 100 million degrees is $\sim 10^6$ m/s. This means that reaching the conditions existing in hot fusion does not look so fantastic for the very short time and the limited volume.

The tragic process can start in a tiny volume of ~ 1 mm³. Its mass is ~1 mg. According to the proportion taken from the calculations above, the energy needed to bring this mass to 1100° C is ~ 3 J. When the process runs very quickly, we can ignore the heat exchange, considering all the energy remaining inside. Taking into consideration the energy released by one of the colliding hydrogen nuclei, we find the number of the nuclei to be ~ 10^{12} . If 1 mm³ contains 2.7×10^{16} molecules of the hydrogen, then each of 20,000 of them has to be involved. Of course, 0.5×10^4 is much more than $1/10^{22}$ in the sun's hot fusion, but we have seen the enormous hidden potential of human thoughts realized in PK. It can drastically change the statistic of nucleolus processes.

One more circumstance can promote this. There is always a presence of the heavy water D_2O in our everyday life. Boiled water has a portion of D_2O at the bottom of the vessel. Chemically, drinking this water affects us negatively. This is why it is recommended not to use the remaining portion of the boiled water in the vessel. It occupies roughly 10% of the total volume and accumulates at the bottom. This is what was known before. Now we can claim one more threat from the heavy water. The deuterium is a most desirable fuel for the fusion. It can provoke the cold fusion at certain conditions triggered by human thoughts.

The hypothesis can be proved by means of detecting the product of the fusion: atoms of helium and/or α -particles in the remainder.

We do not know yet what kind of thoughts can trigger this chain, but the relation to certain psychological conditions, mentioned above, leaves us some hope to understand that. Generally, we believe that violation of the laws of the harmony of the universe never remains without consequences. The dirty, inharmonic thoughts cause great fluctuations in space-time. Enormous accelerating hydrogen and deuterium nuclei resulting in the cold fusion inside human body is one of the consequences.

Beware of dirty thoughts and actions!

8. ELECTRONIC VOICE PHENOMENON

This phenomenon became known to the scientists and engineers in 1920's when the first attempts to record human voice by means of magnetizing a wire were undertaken. Playing back sometimes revealed strange, supernatural-like voices. Then a magnetic tape came to the scene, but the voices left. Naturally, this was attributed to the electromagnetic interferences and imperfect shielding. Nevertheless, even perfect shielding didn't eliminate the effect. The phenomenon attracted a lot of enthusiasts. Today, a lot of related information can be found on the Internet. On of those sources: http://www.themystica.com/mystica/articles/e/electronic_voice_phenomenon.html writes: "Some voices claim to be spirits of the dead. Other theories are that the voices come from extraterrestrials, impressions from the Akashic Records, or an unknown phenomenon of the subconscious mind. Still other psychical researchers believe the sounds are intercepted radio transmissions or static, or distorted mechanical noises.

Electronic voices are also called "Raudive voices," named after a Latvian psychologist, **Konstantin Raudive**, a leading researcher into the phenomenon during the 1960s and 1970s. Raudive was inspired by the experimentation of **Fredrich Jurgenson**, Swedish opera singer, painter, and film producer. In 1959, Jurgenson tape-recorded songs of birds in the Swedish countryside near his villa. When playing the tape back he heard a male voice discussing "nocturnal bird songs" in Norwegian. At first, Jurgenson thought he had picked up a radio broadcast, and then thought it seemed strange that such an accident should be discussing bird songs. He made more tapings. During the tapings he heard no voices, but on play backs he heard many voices, which seem to have personal information for him, plus instructions as how to record more voices. After experimenting with the voices for several years Jurgenson published in Sweden in 1964 a book Voices from the Universe and a recording. Jurgenson and Raudive met in 1965.

Raudive recorded over 100,000 voice phrases. The voices speak in different languages; they vary in clarity from being very audible to sounding like bad long distant telephone connections, while others seem to be delivered in code. At times only one or two voices are heard while at other times a multitude of voices can be heard. The voices are identifiable as men, women, and children. Raudive's research was published in German as The Inaudible Made Audible, which was translated into English in 1971 as Breakthrough.

This phenomenon has been investigated by many psychical researchers around the world and has generated much controversy. While some researchers agree the voices are paranormal others attribute them to natural sounds such as someone rubbing the case of a tape recorder or the

white sounds on tape. Between the years of 1970 and 1972, the Society for Psychical Research in London commissioned D. J. Ellis to investigate the phenomenon. Ellis concluded that the voices most likely were a natural phenomenon. He indicated that the interpretation of the sounds was highly subjective and was susceptible to the imagination.

Raudive, who died on September 2, 1974, expressed no particular opinion. At the time of his death, he was studying a parakeet that seemingly began uttering meaningful sentences in German, which were similar to Raudive's voices.

Many individuals and groups conduct the continued research of the electronic voice phenomenon. **Sarah Estep** founded the American Association – Electronic Voice Phenomena in 1982, which has more than two hundred members in thirty-four states in the United States and eleven foreign countries. This association calls itself "a metaphysical organization interested in spiritual involvement as well as all genuine evidence for postmortem survival" and focuses on "objective contact with those in other dimensions through tape recorders, televisions, and computers."

We believe that have encountered this phenomenon in the winterspring of 2003. At that time, we were in a stage of developing the advanced measurement instrument for the electronic dowsing. One of the units of the instrument was designed to percept an electromagnetic signal at 6208 Hz. This is a center of the band clearly seen in the Fig.1.14, 1.15, 1.16, 1.20 and 1.21. At that time, the unit consisted of two stages: the first one was a filter with a resonant load in a collector of the transistor; the second stage was a digital filter on a base of MAX267 integrated circuit (IC). The first switch-on revealed a modulated signal at the output of the unit, **Fig 2.6.**

The signal was entered the amplifier with a speaker. Some voices were heard. It resembled radio broadcasting. Then the oscilloscope was connected to the resonant load of the first stage. The scope showed the modulated signal of the lower magnitude across the resonant circuit and the ground. This was considered that the inductor of the resonant circuit is a receiver of the electromagnetic signal produced by the intensive EMF in Manhattan where the unit was tested less than 1 mile away from the Empire State Building. There is a powerful antenna on the top of this building. Receiving a low-frequency signal in the high-frequency field was attributed to non-linear permeability of the core of the inductor. On the other hand, even the strong EMF in Manhattan is not enough for nonlinear effects in ferromagnetic cores. To check if the filter is involved in the non-linear process causing the amplitude modulation, the first analog stage was replaced to a digital one. The phenomenon left. Then an aliasing was supposed. The aliasing is a non-linear process in digital electronic devices based on a sampling process. Its essence is that the device can process a signal with a frequency, where and are frequencies of the clock and

the output signal respectively. With the 1288 kHz clock and the central output frequency 6208Hz the aliasing could match one of AM radio stations like 638 and 650 kHz. To fix boundaries with unwanted neighbors, some additional measures were undertaken. Even then, the voice modulation left.

The voices gone with no visible reasons few months later. Then only a chaotic modulation caused by particles from the space left. Of course, there always is room for simple explanations concerning experiments with the ionosphere like HAARP or using super-long waves for submarines, but there are also some pro-arguments:

- The effect had been observed without regard to the type of the filter analog or digital.
- Additional measures like local shielding of IC's and others did not eliminate the effect.
- The effect gone all at once, although the electromagnetic environment left the same.

The signal of 6208 Hz received by the instrument, originates in Van-Allen belts according to the discussed in the previous chapters. On the other hand, these belts are believed to be storage of humanity's collective informational field (Bob Fricell).

The last argument matches the conception of Akashic Records. Moreover, **Sergey Lazarev**, Russian healer and philosopher, states in a series of his popular books (32) that spring and autumn are the seasons when the connection with the world of the dead increases. The phenomenon was observed during the winter-spring. Taking into consideration that the approach of Sergey Lazarev, based on the karmic conception, has proved its viability and helped a lot of people. His statement looks valuable.

9. THE THOUGHTS AND THE SYMMETRY

There are a few powerful paradigms today that define the world outlook regarding our relations with the Universe. Some of them, like Feng Shui, postulate that a human being can solve his or her problems basing on the configurations of the surrounding energy lines expressed in terms of two opposite dualities: Yin and Yang. Other paradigms, like religious values and views of a Russian philosopher and healer **Sergey Lazarev** [32], state the primary importance of the gradual spiritual elevation, the highest step of which is love to God and overcoming everything base in human nature. Namely, the rate of the divine and the human determines the fate and karma of a human being. The first impression is that Feng Shui, with its actually geophysical, rational approach, opposes the mentioned spiritual paradigms when it comes to a human fate. On the other hand, each

of these approaches existing for thousands of years has proved its justifiability. Is there an approach, which can reconcile them?

In our vision, the same fundamental laws that are the basis of a material world are the basis of the loftiest human thoughts and emotions. The world is based on conservation laws, which, in turn, are based on the symmetry and isotropy of space. The term "symmetry" is understood in physics more widely than in its geometric interpretation. Symmetry is a set of invariants of the system. We believe that it is also at the basis of human emotions, thoughts, and karmic law. Space-Time aims to be symmetric and isotropic. However, symmetry is disturbed by people's thoughts and actions. Symmetry can be the criterion of righteousness of human actions both at physical and mental levels. As **Vincent Icke**, a popularizer of physics writes: "Thus, you might write in the Constitution of your universe, 'Do unto others as you wouldst others do unto thee', or even more briefly, 'Love thy neighbor as thyself'. Such an overall rule, that summarizes a multitude of individual possibilities, is called symmetry" [33, p.101].

The criteria of a disciplined thought must meet the requirement of Symmetry. Disturbing the symmetry and isotropy of Space-Time is accompanied by generating quanta: gravitational, electromagnetic, etc. Special instruments can detect these quanta. Still, a lot of future experiments are needed to prove this paradigm.

Developing the Symmetry approach in physics has led to a vanguard theory, which may be able to explain some paranormal phenomena in the future. This is Super symmetry [29], which is directly related to Fermi-**Dirac** particles, or fermions, and **Bose-Einstein** particles, or bosons. Let's remind that fermions are particles with half a unit of spin (1/2, 3/2, 5/2)...), while bosons are any particles that carry a integer unit of spin (0, 1, ...). Fermions and bosons behave in radically different ways when it comes to bunching them together. It is found that fermions are absolutely intolerant particles: there can't be more than one fermion in any given quantum state. In contrast to that, bosons are friendly, tolerant particles: more frequently, we find two bosons in the same quantum state than in different states. What is extremely important is that the particles that are intolerant to each other form matter, while those that can be concentrated in one point form a force. Therefore, fermions – electrons, neutrinos, protons, and neutrons – form matter, while bosons – photons, weak photons and gluons – form forces. This conforms to the Quantum Theory of Field and experimental data.

Super symmetry is a hypothetical symmetry that describes nature and says that fermions and bosons, so different in their properties and what they produce (matter and forces), are opposites that appear in a symmetric way. Moreover, every particle has a super partner. Scientists are looking for super partners and proofs of the theory in powerful colliders. If the

theory is proved, it means that matter and forces can be changed under certain conditions of high energy. Taking into account that our thoughts originate in the deepest levels of space-time, where the density of energy is extremely high, we can come to the understanding of how an object can be generated by our thoughts. For the whole history of mankind there were just a few mighty spiritual persons who could do that.

Speaking about our aspiration to God as the System of Systems, one can ask what an abstract symbol of such an aspiration is. It seems to us that the definition of **a vector** meets these requirements. Love is directed towards its object, yet it has a degree, deepness of its expression. Vector is a quantity with magnitude and direction. The Object, to which this love is directed, equally responds to any source where the vector begins. The symbol of the Object can be represented by a sphere, which meets the condition of equal distancing from the sources directed to it. If the love of a separately taken person can be likened to a vector, the mankind can be shown as a flux of vectors. The following picture symbolizes the love of mankind to God.

This picture is symmetrical in its nature (Fig. 2.7). Any local distortions, like venerating idols, deification of either leaders or primitive human needs, break the symmetry (Fig. 2.8). Fig. 2.8 symbolizes deification of a local entity (the small red circle) by a part of mankind.

Flux of vectors of love can be expressed mathematically. The behavior of such a model under distortions of symmetry can be considered in terms of analytical dependences. The distortion of the symmetry by our thoughts and actions causes any force in nature. Distorting the symmetry of the world by means of our inharmonic thoughts, we cause the reciprocation from The System. This reciprocation is directed to restore the symmetry distorted by us. The **Le-Shatelier-Brown** principle mentioned above is one of the manifestations of this fundamental law. The symmetry is harmony. Speaking about this process, we would like to note that the changes of symmetry manifest themselves in elementary particles. Observing their background changes, we can make a conclusion about the processes induced by our thoughts that distorted the symmetry. Of course, for the time being, these considerations are supposed to be backed up by further experiments.

What is the essence of our existence in this world in these terms? We aspire to harmony. The real harmony, a pan-harmony, is keeping the World symmetric by loving God. This is a major sense of our lives even if we do not perceive this by our consciousness during one cycle of a human life. Faltering, falling and rising, improving our souls, we go ahead through the cycles of lives to perform one great super-task: keeping the World in symmetry and harmony by loving God. Our love of Him is the awareness of the unity of the World, and of our souls being parts of the Universe.

Taking into consideration everything mentioned above, we understand both a new role of dowsing and the responsibility we take introducing it in our life. Today's dowser, armed with modern equipment, can detect pathogenic zones in a human dwelling to issue recommendations how to relocate objects in a room to eliminate inauspicious factors. This will have an immediate effect on a physical health of a certain person. But we know that a human being is 20% of flash and 80% of soul, and illness is a signal of something wrong in thoughts and world outlook of a man [32]. Illness is a way in which the Universe blocks degradation of soul. Helping to eliminate momentary physical problems, we involuntarily intrude in someone's karmic problems, and may cause something even worse in this person's future. That is why we come to the duality of modern dowsing: helping to eliminate a momentary problem, we have to investigate the real cause of why this person encountered it – his thoughts and consciousness. We see dowsing as a harmonic, combined approach, where detecting local geophysical distortions will be just a prelude to understanding genuine causes of the person's living over distorted zones and suffering from it. Armed with special detectors, a dowser will detect distortions of space-time symmetry caused by inharmonic thoughts of a certain person or those who lived there before. Then the recommendations will be issued. That is why, in future dowsing, psychologists will be the members of the team.

Today, we are the witnesses of impetuous technological progress. It is disturbing: can the improvement of our souls follow this process? The gap will be too dangerous. Our hope is the constant presence of people of high spirituality in this world. Their pure thoughts level the world's symmetry, protecting all of us. We look with hope into the future, where the knowledge of the forces of Nature will improve our souls. As a confirmation to that, a great phrase from Kabala, cited by Jeffrey Satinover, p.130, comes to one's mind: "In the days of the sixth part of the sixth millennium, the gates of supernal knowledge will open above the well-springs of secular wisdom below. This will begin the process whereby the world will prepare to enter the seventh, Sabbath, millennium." This prophecy was written down in the book of Zohar two thousand years ago. The days mentioned in the prophecy are 1830-1840 according to Gregorian (contemporary secular) calendar. Anybody interested in the history of science knows about the great chain of discoveries in physics and other sciences occurred at that time. This process is continuing in our days...

AFTERWARD

The processes discussed in this book are based on two independent approaches to dowsing and Feng Shui. The first is rather electro-physical in nature, while the second is close to what is today called psychophysical. Taken together they provide a "sandwich" structure of the two disciplines, the result of a geologically and anthropologically integrated process.

Dowsing and Feng Shui have much in common. Even if we mention dowsing alone and discuss its physical mechanisms, those results can be extrapolated to Feng Shui. Their commonness is based on fundamental properties of the quantum physical vacuum. Particularly, the idea of the influence of human consciousness on space—time metrics accompanied by the appearance of virtual particles from "nothing" look less exotic in today's more open climate.

We also consider the results of this study as a basis for future experiments.

SUMMARY

- A short review of the achievements of contemporary science is done. Dowsing is broadly considered as an activity bordering the sensitive and transcendental perceptions of information. Its spirit is related to a paradigm that encompasses Torsion Fields, Superstrings, Twisters and other cornerstone prodigies of nature. To explain the unusual reaction of a dowser in some places, a thermodynamic approach is offered.
- 2. Earth's electromagnetic field (EMF) is one of the major factors; it defines a thermodynamic equilibrium in which all life on Earth is formed. A short review of EMF phenomena involved in dowsing follows.
- 3. Three major EMF factors are underlined:
 - (i) the Earth's DC field.
 - (ii) extremely low frequency (ELF) oscillations and those of local origination. Note that (i) and (ii) are both extracted from Earth's perimeter waveguide, also called Schuman waves.
 - (iii) the oscillations extracted in a natural cavity resonator formed by the Earth and the ionosphere. This and (ii) operate in frequencies of 8–10 Hz and 2–8 kHz respectively.
- 4. ELF fields play a special role in human organisms. They are recognized by the Ageless Wisdom Teaching as one of the mediating agents of Cosmic Shocks, which regulate the life of mankind. In particular, the spectra of natural ELF fields and that of human organs are very similar, but the strength of the natural fields can exceed the average of human organs. This can result in disturbing pace of human organism.
- 5. The special role of water in dowsing, both external and internal, is demonstrated.
- 6. Water prospecting was what originated dowsing. Electro-physical processes caused by the presence of water localized in the soil are considered. The increasing intensity of EMF over water lenses due to the secondary sources of the field is shown.

- 7. Certain physical processes which can influence human organs are considered. In particular, changing the energies of a cell in an external field is discussed.
- 8. Analysis of landscape heterogeneities exposed to Earth's EMF inevitability generates the formation of *the spinning conservative electric field*, which can result in torsion fields that further lead to a chain of consequences. The spinning conservative electric field behaves like a virtual gyroscope possessing a certain angular momentum. Taking into consideration the phenomenon of the changing weight of a rotating gyroscope studied by N. A. Kozyrev and other scientists, one can suppose a variation in the space—time curvature caused by the spinning field. The phenomenon of the rotating field as a virtual gyroscope makes a considerable contribution to both dowsing and Feng Shui.
- 9. Special role of subterranean waters is considered. Energetic contribution of vast water surfaces in EMF is shown. The phenomenon of modulating Earth's EMF by turbulent water is considered. This generates additional ELF fields, which can influence electric activity in the human brain.
- 10. To evaluate the risk of living above zones with abnormal electromagnetic/torsion field activity, a complex number criterion is offered. The real portion shows a reading of an electronic dowsing instrument, while the unreal portion represents an estimation of a psychic. Its modulus is a measure of the risk.
- 11. The influence of external and internal factors on reading dowsing instruments such as the bioelectric activity of the operator, the field of electromagnetic apparatuses, and distortion caused by flora are considered.
- 12. To probe heterogeneities of soil related to dowsing employing Time Domain Reflectometry (TDR) is presented. Readings of a TDR-instrument show the electric signal reflected by those environmental heterogeneities which play a major role in dowsing.
- 13. The experimental installation to research Earth's EMF activity was designed. The installation includes an electrometer connected to a signal analyzer. The analyzer recording spectrum within 5Hz-22 kHz. To study the phenomenon of modulating the earth's DC field by turbulent water, an additional unit was designed. The unit comprises a jolter, which furnishes a reciprocal motion of a vessel with water. The vessel is placed between the Earth's surface and an electrode of the electrometer.
- 14. The experimental study has revealed peculiarities of Earth's EMF spectrum both of natural and industrial origin. To estimate influence of bioelectric activity of the operator, the spectrum of a walking process was recorded. Its influence was found to be considerable in the

ELF band. It also traced the remainder of the spectrum. The electromagnetic activity of the operator is mostly attributed to leg muscles. Grounding the operator reduces the intensity of its influence as much as by 3–4 times. Such grounding is recommended for correct mapping.

- 15. Study of phenomena caused by turbulent water revealed its influence on the spectrum in all bands, but especially in ELF area where its contribution in intensity was found to be as much as 40 dB (100 times). It also changes patterns of original phase distribution of EMF. The additional ELF field produced by turbulent water creates oscillations, which appear similar to a human electroencephalogram (EEG). The said ELF field also overlaps the area of EEG and exceeds it in intensity considerably. This circumstance has a profound influence on human health and has to be taken into account.
- 16. To be socially adequate, dowsing cannot limit itself to the traditional engineering approach of revealing pathogen zones and issuing particular recommendations regarding human dwelling. It has to help people to see the real causes of their problems a distorted world view. There is a need to take a step beyond dowsing to help people live in harmony with their world. This is a red thread of the last portion of the book.
- 17. Both dowsing and Fang Shui are ancient disciplines which intersect in the field of sensitive and transcendental knowledge. They have much in common. The bases of the ancient study of Feng Shui and dowsing are considered together. Physical analysis of well-known objects of Feng Shui, such as sharp roofs and rulers that define auspicious and inauspicious zones, reveal some hidden sense of information in them.
- 18. Ancient Kabala paradigm of Seven Circles is analyzed based on its physical data. The result returns some fundamental parameters of the physics, which is one more evidence of energy of thoughts and our responsibility for them. What our imperfect thoughts disturb is the symmetry of the space—time continuum. Moreover, the converse is true harmonic thoughts dwelling in the love of the Universe work to restore its symmetry, which is a source of all events and the foundation of our existence.

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