

ELECTRIC FIELD OF THE EARTH ONE OF THE FACTORS OF THE MICROCLIMATE

Professional paper

Hrustem Smailhodžić, Maid Omerović, Aljo Delić

Faculty of the Technical Studies, University of Travnik, Bosnia and Herzegovina

Abstract

Living beings on Earth are simultaneously in the „ocean“ of fields, the macro-level point of view. Sources fields are known. Source of gravitational field is mass. Source of electrical field is charge that is carrying particles, for example electrons or protons. An imbalance of these two charges on a body acts as source of electric field. The same charge in - movement- acts as a source of magnetic field. Quality as a source fields, in a free interpretation, field of love, is in all living beings: soul, spirit, Ruh, etc.

Interaction of field is required cognition.

This work aims to review the static electric field of the Earth.

Complexity of issues requires experimental research and cognition. This work will examine the impact of the electric field on the microclimate of living space.

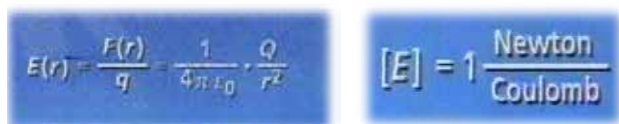
Keywords: mass, charge, electrical field, spirit

Introduction

Since ancient times, man observes phenomena around him and trying to explain them. On the basis of the centuries-old observation, human knowledge of nature was constantly enriching and expanding. Thus was born one of the oldest science of nature: PHYSICS.

Man was always interested in natural phenomena, especially those of which depended. He watched them and then tried to explain them. Produced knowledge developed the science of nature.

The world we live in, the entire nature, is made of matter. Matter exists in the form of a substance, and in the form of physical fields.



$$E(r) = \frac{F(r)}{q} = \frac{1}{4\pi\epsilon_0} \cdot \frac{Q}{r^2}$$

$$[E] = 1 \frac{\text{Newton}}{\text{Coulomb}}$$

All material bodies are made of a substance. The substance is composed of atoms and molecules.

Items operate remotely via physical fields. The physical field is a form of matter existence and interaction carrier.

Gravity is the attraction between bodies, as a result of their mass. It is one of the four basic forces acting in nature and is the force of attraction between all the bodies. Overall, the whole structure of the universe is based on the force of gravity.

Living beings on Earth are simultaneously in the „ocean“ of fields, the macro-level point of view. Sources fields are known. Source of gravitational field is mass. Source of electrical field is charge that is carrying particles, for example electrons or protons. An imbalance of these two charges on a body acts as source of electric field. The same charge in - movement- acts as a source of magnetic field.

Quality as a source fields, in a free interpretation, field of love, is in all living beings: soul, spirit, Ruh, etc. Interaction of field is required cognition.

1. Electrical field

Body of man, as well as other living beings on Earth, mainly used their capacity of adaptation and more difficult to adapt to rapid changes in the environment. Is particularly intense influence on the physiological integrity of the genetic structure of a living organism.

Studies of many authors shows that the causes of the occurrence and wide prevalence of diseases like cardiovascular pathology, malignant neoplasms, diseases of nervous system traumas, genetic anomalies, etc. Very often connected to disruption of natural environment and natural balance, especially unexplored communication between the fields and living systems.

Electrical field above Earth ground. The electric field is a physical field in which impact of the charged body can experience. The body is electrified if the

balance of two kinds of electrical charge, charge on electron and charge on proton is disrupted. Source

$$E = \frac{F}{q}$$

of field is charge as a overage or deficit of electrons

This imbalance is achieved with external energy influence; friction, for example ...

Effect from source field is transmitted radially, decreases with the square of the distance.

The field strength is taken as the value of action at the unit value of the body charge in an electric field (V/m.)

Earth as a celestial body acts as **negatively** charged body

Total charge is **500.000 C**

$$Q = -5 \cdot 10^5 \text{ C}$$

The intensity of the Earth field is changing, during the day, especially with the changes of atmospheric conditions.

In not disturbed relations values of the electric field has a value typically 50 V / m to 150 V / m in the open, stationary atmospheric electrical field. With this values of electrical field, life is normaly – adjusted progressing. Truly, artificially separated electricity to achieve the flow of electricity, electric power in environment changing the value of a static electric field.

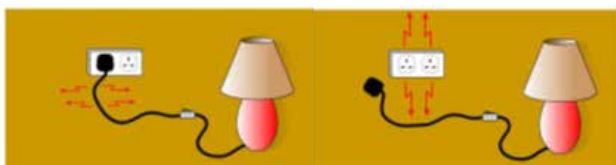


Figure 1 a) - Even when device is not plugged, electrical field is present

Figure 1 b) - When device is turned on electric field is present around conductor as well

2. Measurement of stationary electric fields

Measuring the intensity of static electric field is achieved directly with device changing the disposition of electricity, when body is in electrical field, image....

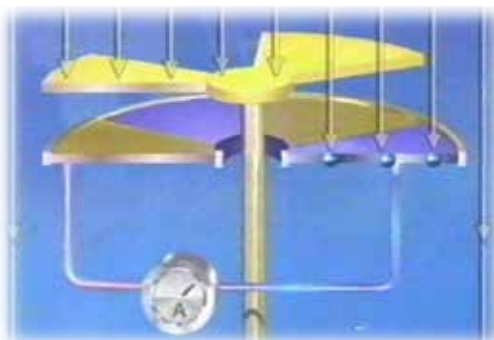


Figure 2 - Measuring the intensity of static electric field, the principle

The intensity of the electric field of the Earth is dependent on the weather meteorological.

On sunny day there is a field of 150 V/m.



Figure 3 - Intensity of static electrical field, measured on sunny

On cloudy day field is 200 V/m.



Figure 4 – Intensity of static electrical field when is cloudy

Nearby charged sphere field depend of sphere's charging and distance



Figure 5 – Intensity of static electrical field of charged sphere

TV screen shows electrifying board. Values are to 1000 V/m.



Figure 6 - Intensity of static electrical field in front of TV is significantly higher then in the open

3. Strenght of electrical field on household

According to the Federal Office for Radiation Protection, Germany, in 1999. characteristical values of electrical field strenght of household devices on 30cm distance from device are:

Electrical devise	Electrical field strenght [V/m]
Stereo	180
Flatiron	120
Refrigerator	120
Mixer	100
Toaster	80
Hairdryer	80
Color TV	60
Coffee maker	60
Vacuum cleaner	50
Electric stove	8
Light bulb	5

In general, any type of radiation energy is spreading into the surrounding space. More precisely energy exchange with its surrounding is happening.

People are exposed to this fields every day. Any artificially created electromagnetic radiation from a variety of electronic devices and electricity distribution lines is by its nature generally harmful to human health.

This harm is mainly result of „unfortunate“ frequency selection that disrupt functioning human being as fine harmonized bio-electrical suptile body.

The exceptions are electronic devices that can generate electromagnetic radiation which has a beneficial effect on human health.

Research conducted in Austria, on cows, freely interpreted shows that cows in a wooden barn were more productive then cows with the same genetic origin that were in the same microclimate conditions, in the barn with reinforced concrete.



Figure 7 - Electrical field inside space enclosed with conductive material is zero (0)



Figure 8 - Intensity of static electrical field in wooden buildings is equal to electrical field outside the building, atmospheric stationar electrical field.

Everything was the same except elecrical field in barns. Electrical field in room surrounded with electricly conductive net in reinforced concret is equal to ZERO – FARADEY CAGE.

In wooden barn there was *STATIONARY ELECTRIC FIELD OF EARTH*.

5. Legislation in the domain of protection from electric fields

The most important international organization in the field of protection against electromagnetic fields is

the International Commission on Non-Ionizing Radiation Protection ICNIRP. It is formally recognized as an official collaborating non-governmental organization (NGO) by the World Health Organization (WHO) and the International Labour Organization (ILO)., collects scientific results from all over the world and based on that recommends limit values for exposure to electromagnetic fields. Thereby anatomize exposure into two categories: general population and occupational exposure.

In the general population children, the elderly, generally more vulnerable categories of the population, can be exposed, 24 hours a day. At occupational exposure it is about healthy persons, able to work up to 8 hours a day.

Electric field limits, by ICNIRP recommendation from 1998:

Electric field strength	E (V/m)
General population	5000
Occupational exposure	10000

Council of EU accepted this recommendation and on July, 5. 1999 in Brussels issued document: "Council Recommendation on the limitation of exposure of the general public to electromagnetic fields (0 Hz - 300 GHz)".

The document of the Council of the European Union was used as a basis for determining the limit values of electromagnetic fields in the some countries, as well as in Croatia.

Start of activities related to the protection from electromagnetic fields in the Republic of Croatia was the Law on the protection of non-ionizing radiation (Official Gazette 105/99).

On the basis of the Law on Protection from non-ionizing radiation (Official Gazette 105/99) was adopted by the Ministry of Health and Welfare Ordinance on protection from electromagnetic fields (further Regulation) (Official Gazette 204/03).

Regulations, among other things, provides:

- Limit levels of electromagnetic fields, checking procedures and conditions for obtaining the authority to perform these procedures, as well as specific requirements for devices, installations and buildings that are sources of electromagnetic fields or contain sources of electromagnetic fields;

- Sources of electromagnetic fields that are required by the Minister of Health for their traffic and use;
- Legal or natural- persons need to meet legal conditions for the traffic and use of sources of electromagnetic fields, as well as the terms and manner of periodic tests to verify compliance with the prescribed conditions
- Conditions for granting authorization to carry out professional tasks of protection against non-ionizing radiation, as well as keeping records and submission of reports and data for authorized legal entities.

Borderline levels of certain fields in this Regulation show that the limit values are:

Electric field strength	E (V/m)
General population	2000
Occupational exposure	5000

The Ministry of Health and Croatian Social Welfare opted for considerably more stringent limits than those recommended by the ICNIRP, the World Health Organization (WHO) and the Council of the European Union.

Electric field limits are below 2.5 times (general population) or 2 times (occupational exposure).

According to Article 19 of the investor of a stationary source of electromagnetic fields for the construction or placement of such sources is required to obtain approval from the Ministry of Health and Social protection. The application for approval must be accompanied by calculation or estimate the level of electromagnetic fields stationary sources.

According to Article 20 of Rule Book user of the stationary source of electromagnetic fields for the use of that kind of source need to obtain approval from the Ministry of Health and Social protection, for which, among other things, report on the first measurements of electromagnetic fields in stationary source surrounding must be enclosed.

According to article 41. of Rule Book legal person that is the user of more than 300 existing stationary sources of electromagnetic field, is obligated to deliver credible study to Ministry of health about importance of use sources considering level of emitted electromagnetic fields, within 12 months from Rule book entry.

6. Conclusion

Living systems including mankind are continually exposed to natural fields through their lives. Life takes place in the „sea“ of fields.

As a result of the interaction of electric fields with the human body, there is the flow of electric charge (electric power), the polarization of bound charge (formation of electric dipoles) and divert electric dipoles that already exist in the tissues. As a result of the interaction of time varying magnetic fields with the human body induce electrical fields and circu-

lar electrical power has been induced. Exposure to low-frequency electromagnetic fields do not cause significant energy absorption and measurable body temperature increase. However, exposure to electromagnetic fields at frequencies above 100 kHz can lead to significant absorption of energy and temperature increase. The measuring equipment, measurements, norms, standards, assessment of sources and effects and protection against electromagnetic radiation needs to be continually refined and adjusted. Interaction of physical fields and fields of living systems is the required knowledge.

References

- [1] Poljak D. (2006). Izloženost ljudi neionizacijskom zračenju. Zagreb, Kigen.
- [2] Šarolić, A. (1998). Procjena štetnosti i problemi pri mjerenju elektromagnetskog polja. 2. Seminar o elektromagnetskoj kompatibilnosti i telekomunikacijama-zbornik radova, Split, ELMACO.
- [3] International Commission on Non-Ionising Radiation Protection (ICNIRP) Guidelines: Guidelines for Limiting Exposure to Time Varying Electric, Magnetic and Electromagnetic Fields (up to 300 GHz), Health Physics, Vol. 74,4 (1998) 494-522
- [4] Directive 2004/40/EC of the European Parliament and of the Council of 29 April 2004 on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (electromagnetic fields), Official Journal of the European Union L 159 of 30 April 2004
- [5] Directive 2008/46/EC of the European Parliament and of the Council of 23 April 2008 amending Directive 2004/40/EC on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (electromagnetic fields), Official Journal of the European Union L 114/88 of 16 April 2008.
- [6] European Council Recommendation of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz) (1999/519/EC), Official Journal of the European Communities, L 197 of 30 July 1999, pp 59-70
- [7] Uputstvo za izgradnju i korišćenje izvora nejonizujućih zračenja, Ministarstvo životne sredine i prostornog planiranja-Sektor za kontrolu i nadzor, Beograd, maj 2010.

ELEKTRIČNO POLJE ZEMLJE JEDAN OD FAKTORA MIKROKLIMATA

Sažetak

Čovjek i drugi živi sistemi zahtijevaju u svojoj neposrednoj okolini određene vrijednosti fizikalnih veličina, koji obezbjeđuju normalno odvijanje životnih procesa. U definisanim životnim prostorima skup tih veličina određuje mikroklimat. Temperatura, vlažnost vazduha, osvijetljenje, strujanje vazduha i obezbjeđenje uslova da ne dođe do požara. No, život se odvija u fizičkim poljima definisanim, a često ne definisanim.

Živa bića na Zemlji su jednovremeno u moru polja, makroskopski gledano. Izvori polja su poznati. Izvor gravitacionog polja je masa. Izvor električnog polja je naboj koji nose čestice, za primjer elektroni, odnosno protoni. Neravnoteža ova dva naboja na nekom tijelu djeluje izvorom električnog polja. Isti taj naboj u –pokretu- djeluje kao izvor magnetnog polja.

Kvalitet kao izvor polja, u slobodnoj interpretaciji, polje ljubavi, je i u živim bićima: duša duh ruh i sl., nazvano...

Interakcija polja je tražena spoznaja.

Ovaj rad ima za cilj razmatranje statičkog električnog polja Zemlje, kao utjecajnog faktora na odvijanje procesa u živim sistemima.

Složenost poroblematike traži eksperimentalna istraživanja i saznavanja. U radu će se razmatrati utjecaj električnog polja na mikroklimat životnog prostora

Ključne riječi: masa, električni naboj, električno polje, duh, mikroklimat

Received: October 21, 2015

Accepted: December 15, 2015

Correspondence to:

Hrustem Smailhodžić, Ph.D.

Faculty of Technical Studies University of Travnik,

Bosnia and Herzegovina,

E-mail: hrustem@gmail.com
