ELECTRIC FIELD OF THE EARTH - SOURCE OF ENERGY

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In nature, there is a unique alternative source of energy, environmentally friendly, renewable, easy to use, which still is not used anywhere. Channel this - the electric field of the Earth.

The following is a method of obtaining energy from this source. The method is based on the properties of the electric field of the Earth and the basic laws of electrostatics.

Atmospheric electricity

Our planet is in an electric for a semblance of a spherical capacitor, charged to about 300 000 volts. Inner sphere - the Earth's surface - is charged negatively, the outer sphere - ionosphere - positively. Insulator serves as the Earth's atmosphere. (Figure 1)

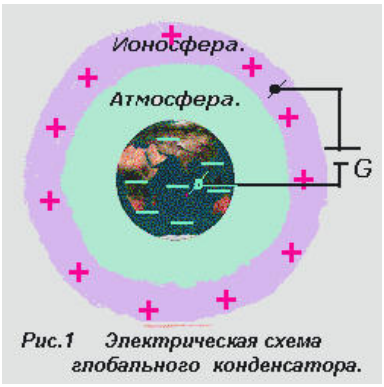

Рис.1 Электрическая схема глобального конденсатора.

In an atmosphere of constant ion flow and convective currents leakage capacitor, which reach many thousands of amperes. But despite this difference in potential between the capacitor plates does not decrease.

This means that in nature there is a generator (G), which constantly replenishes charge leakage from the capacitor plates. This generator is the Earth's magnetic field, which rotates together with our planet in the solar wind flow.

To use the energy of this generator, you need to somehow connect the energy consumer.

Podlyuchitsya to the negative pole - the Earth - simple. It's enough to make a proper grounding. Connect to the positive pole of the generator - the ionosphere - is a difficult technical challenge that we and loans.

As with any charged capacitor, in our global capacitor exists an electric field. The intensity of this field is very unevenly distributed in height: it is maximum at the surface of the Earth and is about 150 V / m. From the height it decreases approximately according to the law of exponents and at an altitude of 10 km is about 3% of the value of the Earth's surface.

Thus, almost all of the electric field is concentrated in the lower atmosphere, the Earth's surface. Vector of email. Earth's field E is directed in the general case down. In his arguments, we will use only the vertical component of this vector. The electric field of the Earth, like any electric field that acts on the charges with a certain force F, which is called the Coulomb force. If you multiply the charge on the tension email. field at this point, we get just the value of the Coulomb force F molecules.. The Coulomb force pushes the positive charges down to the ground, and negative - up in the clouds.

The electric field of the Earth is a potential field as well as any e-mail. field. Each point in this field corresponds to its potential. Points with the same potential form equipotential surfaces.

The conductor in an electric field

Set on the surface of the Earth's vertical metal wire and grounded it. Suppose the highest point of the conductor is at some level of

capacity U e. Field of the Earth. The electric field of the Earth in accordance with the laws of electrostatics conduction electrons will move up to the top point of the conductor, making it an excess of negative charges. This movement of electrons will continue as long as the top conductor toche not arise potential-U, equal in magnitude and opposite in sign to the potential U e. Earth's field, which is the highest point of the conductor.

This negative potential-U fully compensates the positive potential U el.polya Earth and the entire guide, including its top point, acquires the capacity of the Earth, which we assume to be zero.

But an excess of negative charges at the upper conductor will create its electric field.

We have a system of two e-mail. fields: e. Earth's field, E_1 and E. field excess charges at the upper conductor E_2.

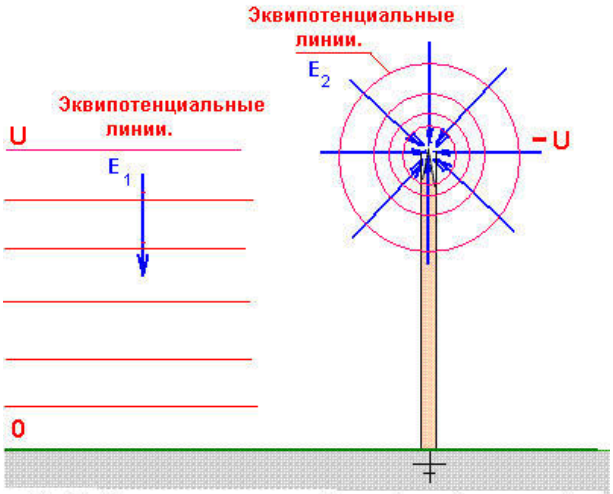

Рис.2. Электрические поля Земли (слева) и верхней точки проводника (справа).
E_1 -вектор напряженности эл. поля Земли.
E_2- то же верхней точки проводника.

Fig. 2 shows the intensity vector of these fields.

Vector of email. Earth's field E_1 near the conductor are the same everywhere on the magnitude and direction.

Vectors of the same tensions email. field guide to the different points of the field have different magnitude and direction. Fig. 2 on the right shows the intensity vector E_2 of E. field. They converge at the upper conductor, where concentrated excess conduction electrons.

According to the principle of superposition e. Fields tensions resulting email. Field is equal to the geometric sum of the strengths of each of these fields.

Note: below the top of the conductor tension vectors E_1 and E_2 of the two fields are directed in opposite directions. Here, they cancel each other and in the conductor email. field is equal to zero.

Above the top of the conductor tension vectors of these two fields are directed in one direction - down. Here they are formed and give the total strain e. field.
If we add these vectors geometrically and draw equipotential lines at each point of the field, we get the picture shown in Figure 3.

Figure 3 shows the total E. Field in the cross section of the vertical plane passing through a conductor. It is noteworthy that the potential of the conductor in all its points is equal to zero and at the same time on the top point of the conductor is concentrated much tension total email. Earth's field and the conductor.

That is e. field and seeks to wrest the conduction electrons from the top of the conductor. But the electrons enough energy to leave the conductor. This energy is called work function of the electron from the conductor and for most metals, it is less than 5 electron volts - a very small quantity. But the electron in a metal can not acquire such energy between collisions with the crystal lattice of the metal and therefore remains on the surface of the conductor.

The question arises: what happens with the conductor, if we can help overcharged at the top of the conductor to leave this guide?

The answer is simple: the negative charge on the top of the conductor decreases, the external electric field inside the conductor will not be compensated and then start moving conduction electrons up to the upper end of the conductor. So, for him a current flows. And if we can ever remove the excess charges from the top of the conductor, it will constantly leak current. Now we only need to cut the wire at any convenient location and include there the load (consumer of energy) - and the power plant is ready.

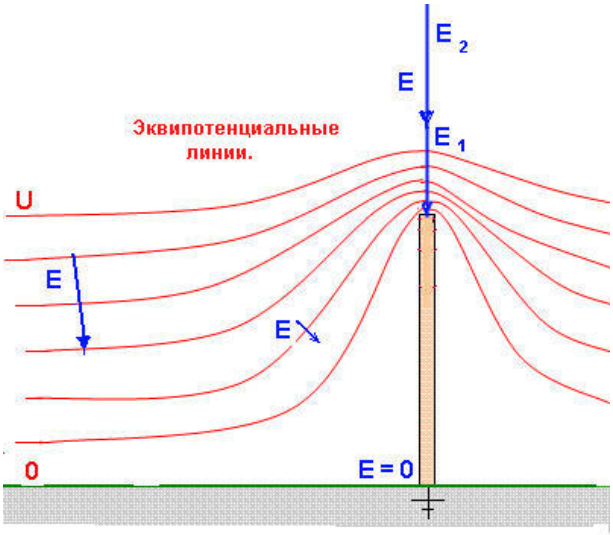

Рис. 3. Суммарное электрическое поле.
$\vec{E} = E_1 + E_2$- вектор напряженности суммарного эл. поля.

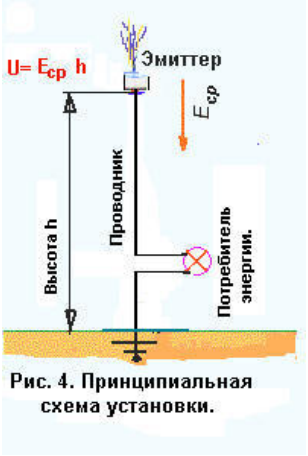

Рис. 4. Принципиальная схема установки.

Figure 4 shows a schematic diagram of such a facility.
Under the influence of an electric field of the earth from the land of the conduction electrons move through a wire through the load and continue up to the emitter, which frees them from the top surface of the metal conductor, and sends them in the form of ions in the free floating of the atmosphere. The electric field of the Earth in full accordance with Coulomb's law raises them up until then, while they are on their recent findings path will not be neutralized by positive ions, which always fall down from the ionosphere under the action of the same field.

Thus, we closed the circuit between the plates of the global electric capacitor, which in turn is connected to a generator G, and included in this chain of consumer energy (load). It remains to resolve one important question: how to remove the excess charges from the top of the conductor?

Emitter

To do this, a device that would have helped the conduction electrons to leave the conductor - the electron emitter or emitter.

The emitter may be constructed on the basis of high-voltage generator of small capacity, which is able to create a corona discharge around the emitting electrode on the top of the conductor.

Such high-voltage generators are used in industry in smoke vents, air ionizer, installations for electrostatic painting of metals and various household appliances.

The generator creates a conduction electron emitter around the spark, corona or carpal level. Such a discharge is a conductive plasma channel through which the conduction electrons to freely flow into the atmosphere is already under the influence of el.polya Earth.

For this purpose you can use a transformer, or Tesla coil.

In 1891, Nikola Tesla created his famous high-frequency high-voltage transformer, which he used for experiments and demonstrations of their experiments.

Рис. 5. Катушка Теслы.

There is a device called the Tesla coil (Tesla coil). In industry, this invention has not found application. It is mainly used for all sorts of attractions.

During the coil to its secondary winding generates a voltage of several million volts, which ionizes the air and creates a variety of electrical discharges - streamer, spark or corona discharge, depending on input voltage.

Channels of these discharges in the ionized air is a good conductor for the conduction electrons, which tend to break out of the metal wire into the atmosphere. And the conduction electrons through a conductor discharges easily leave and go into the atmosphere is already under the influence of E. field of the Earth, which focuses on the top point of the conductor.

Shape and intensity discharge coil can be regulated within certain limits from weak to strong corona arc, depending on the intensity of E. field of the Earth and the necessary capacity of the installation.

Assessment of capacity of the

Suppose the highest point of the conductor is located at an altitude of 100 meters, the average strain E. field height conductor E_{Wed} = 100 V / m.
Then the potential difference E. field between the Earth and the upper point of the conductor is numerically equal to:

$U = h E_{Wed}$ = 100 m * 100 V / m = 10 000 volts.

The same quantity will be negative and compensates for the potential at the upper point of the conductor. This is - a very real difference in potential between the earth and the upper point of the conductor, which can be measured. However, conventional wires with a voltmeter to measure it can not - in the wires there is the same emf as a conductor, and the voltmeter will show 0.

Strength of the current in a conductor depends largely on the efficiency of the emitter. If using the emitter, we can obtain a current of 10 A., the total plant capacity of 100 kW.

When working emitter liberated electrons accumulate in the atmosphere over the emitter and create a negatively charged cloud. E. field of this cloud is directed against E. Earth's field and reducing it. If wind cloud crab and its impact will be negligible. In the absence of wind, the cloud is removed only Coulomb forces Email. field over the emitter, forming a convective jet directed upwards. In this case, the intensity of the current installation will be limited to the current strength of the convective jet.

Features of the electric field

E. field above the earth's surface has such characteristics that must be taken into account.

Above the flat underlying surface such as the sea or the wide plain, the equipotential surface of the fields are located approximately parallel to each other, as shown in Fig. 2 left.

But as soon as it appears grounded conductor, this field is changing and becoming something like this, as shown in Fig. 3.

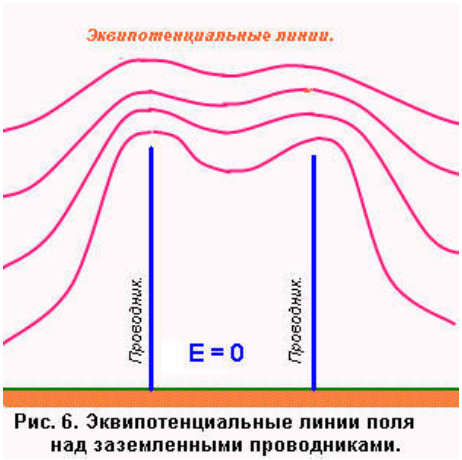

Рис. 6. Эквипотенциальные линии поля над заземленными проводниками.

Effect is such as if it were a field of rose and lingered at the top of the conductor. Equipotential lines of the conductor skontsentorirovalis, and thus increased the intensity vector E. field.

At the same time at the base of the conductor email. Field decreased. If two grounding conductor located near each other, then e-mail. field will look like, as shown in Fig. 6.

All e-mail. box located above the grounding conductors. Between these conductors at the earth's surface E. Field is close to zero.
These guides are the trees that line e. transmission, high buildings, and, of course, all urban homes.

Consequently, in an urban guide to the emitter should be raised above the roofs of city houses and all kinds of antennas, flagpoles, trees and steeples, located nearby. Even safer raise the conductor and emitter in a balloon.

On the power of the global generator

This setup selects the output from the global generator.

In this connection there is one very important question - how will affect the widespread use of such facilities in the electric field of the Earth?

Will not it lead to a weakening of El. field of the Earth?

We are unable to measure the power of this generator. But some indirect evidence can be judged on its capacity.

The Earth is constantly plagued by several hurricanes, tropical storms and cyclones are set. In the current view and estimates about one-third the power of Hurricane accounts for its electrical component.
What is it - the electric power component of the hurricane?

Hurricane power proportional to the volume and speed of ascent of warm air in its heat tower - the central area of the hurricane.

Such a rise in air proiskodit mainly due to the difference in air density at the periphery of the hurricane and in its center - heat tower, but not only. Part of the lift force (approximately one-third.) Ensures the electric field of the Earth.

The fact that the evaporating from the surface of the ocean storm water carries with it a great Volume of negative charges.

From the standpoint of electrostatics stormy ocean is a vast field, strewn with sharp points and edges, which are concentrated negative charge and tension email. field of the Earth. This - the electrostatic effect of the tip.

Evaporating the water molecules in these conditions to easily capture the negative charges and carry them with you. And the electric field of the Earth in full accordance with Coulomb's law, these charges move upwards, adding air lift force.

And this correction is about a third of the total lift, and hence the power of the hurricane. Thus, the global electric generator spends part of its capacity to enhance the atmospheric vortex at the planet - a hurricane, storms, cyclones, etc.

But this power consumption does not affect the magnitude of the electric field of the Earth.
Given that the average power exceeds the power of the hurricane all the power of the world, we can conclude that the wide and extensive use of this energy will not affect the electrical parameters of the planet.

Conclusions

As a result of our actions, we connected to the global energy consumer to an electricity generator. To the negative pole - the Earth - we are connected using a conventional metal wire (ground), and to the positive pole - the ionosphere - with the help of a very specific conductors - the convective current.

Convective currents - is the electrical currents resulting from an orderly transfer of charged particles. In nature, they occur frequently. The most powerful of them - it is hurricanes and rising air in the intertropical convergence zone, which claim the huge amount of negative charges in the upper troposphere.

From the foregoing, the following conclusions:

- The energy source is simple and easy to use.
- At the output you get the most convenient form of energy - electricity.
- Channel environmentally clean: no emissions, no noise, etc.
- Installation is simple to manufacture and operation.
- Exceptional low price of energy and still received a lot of other advantages.

The electric field of the Earth is subject to fluctuations: it is stronger in winter than in summer, every day it reaches a maximum at 19 hours GMT, also depends on weather conditions. But these variations do not exceed 30% of its average value.
In some rare cases, under certain weather conditions, intensity of this field may increase several times.

During the storm el.pole vary within wide limits and may change in the opposite direction, but it happens on a small area directly under the thunderstorm cell and within a short time.

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