Chapter 11

Spin Supercurrent in Ecology

Ecology is the study of the relationships between living organisms and their environment. The first law of ecology formulated by one of the founders of theoretical basics of modern ecology, Barry Commoner [129] declares: “Everything is connected with everything else”. At present there is known a physical process which can accomplish the connection of “everything…with everything”: spin supercurrent.

Spin supercurrent emerges between the so-called “virtual photons” created by quantum objects with a non-zero rest mass and quanta of electromagnetic field - photons (see Section 1.2.1). The quantum objects creating virtual photons can constitute both living organisms and non-living objects. The schema of interaction of two bodies by means of spin supercurrent is given in Figure 11.1.

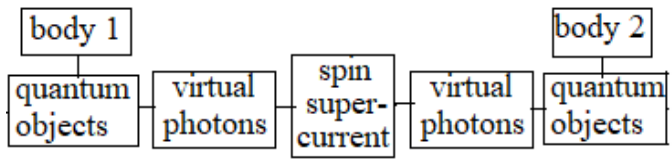


Figure 11.1. The schema of interaction of two bodies by means of spin supercurrent.

According to property 2 (Section 1.2), the spin supercurrent is a dissipation-free process and, due to the association of energy with mass, an inertia-free process. Consequently, spin supercurrent does not take part in gravitational interactions and its speed can be greater than the speed of light (the limitation of speed in Special Relativity relates only to inertial processes).

Based on the properties of spin supercurrent the below listed phenomena in ecology are considered in this work:

- the mimicry of living and nonliving objects,
- the influence of the terrain relief on the population longevity,
- the application of information matrix (in particular, water).

11.1. Mimicry of Living and Nonliving Objects

I. The main characteristics of virtual photon are: precession angle, deflection angle and frequency of precession of its spin. According to Eq. (1.18) (Section 1.2), spin supercurrent can equalize the precession frequencies of virtual photons. That is, the following can hold:

$$(\Delta\omega)_0 > (\Delta\omega)_{ss}, \tag{11.1}$$

where $(\Delta\omega)_0$ and $(\Delta\omega)_{ss}$ are differences in the precession frequencies of virtual photons created by interacting quantum objects respectively before the action of spin supercurrent and after its action. The possible values of precession frequency ω_v of virtual photon created by a quantum object of a body are determined by energy levels of the quantum object (see Eq. [1.6] and Chapter 2.3). The energy levels determine the color of this body as well [15]. Thus, the action of spin supercurrent can result in changing the color of bodies between which it emerges.

Consequently, if spin supercurrent emerges between the virtual photons created by quantum objects of a plant and the virtual photons created by quantum objects of an animal, then due to Eq. (11.1), the color mimicry between the animal and plant is possible. Fig. 11.2 shows a similar example: the color mimicry of *Phelsuma serraticauda* (Flat-tailed day gecko) to a Madagascar plant.

II. According to Eqs (1.14)-(1.15) (Section 1.2), spin supercurrent can equalize respective precession angles and deflection angles of virtual photon. That is, the following can hold:

$$(\Delta\alpha)_0 > (\Delta\alpha)_{ss}, \tag{11.2}$$

$$(\Delta\beta)_0 > (\Delta\beta)_{ss}, \tag{11.3}$$

where $(\Delta\alpha)_0$ and $(\Delta\alpha)_{ss}$ are the differences in the precession angles of virtual photons created by quantum objects, respectively before the action of spin supercurrent between them and after its action; $(\Delta\beta)_0$ and $(\Delta\beta)_{ss}$ are the differences in the deflection angles of virtual photons created by quantum objects, respectively before the action of spin supercurrent between them and after its action. As shown in Section (9.1), the angles of precession and deflection of virtual photons created by quantum objects of a body are connected with the form of the body. Consequently, spin supercurrent while transferring the angular momentum (angles of precession and deflection) transfers the body's form as well.

Thus, the interaction of virtual photons created by quantum objects of different bodies, according to Eqs (1.14)-(1.15), can result in the form's mimicry of the bodies. The form and color mimicries of insects *Tetraponera ophthalmica* (Ant) and *Myrmarachne ichneumon* (Mimicking jumping spiders). are shown in Figure 11.3.

	
Figure 11.2. *Phelsuma serraticauda* (Flat-tailed day gecko) on a Madagascar plant (http://photoshtab.ru).	**Figure 11.3.** *Tetraponera ophthalmica* (Ant) (below) and *Myrmarachne ichneumon* (Mimicking jumping spiders) (naurok.com.ua).

The form and color mimicries of plants *Urtica dioica* (Dioecious nettle) and *Lamium album* (White Dead-nettle) are demonstrated in Figure 11.4a and Figure 11.4b. *Lamium album* in its leaves is extremely similar to *Urtica dioica*, and since the latter is protected by its burning hairs from herbivorous animals, this similarity can also serve as protection for *Lamium album*.

	
Figure 11.4a. *Urtica dioica* (Dioeciousnettle) (Shareslide.ru)	**Figure 11.4b.** *Lamium album* (White Dead-nettle) (Shareslide.ru)

The changes in the organisms performed by spin supercurrent are preserved, if they provide the “survival” of the organisms.

11.2. The Influence of Terrain Relief on the Population Longevity

According to Eq. (9.1) (Section 9.1), the value of spin supercurrent emerging between virtual photons depends on the mutual configuration of the quantum objects that created those virtual photons. Consequently, the spin supercurrent will exist in a cavity structure constantly, if the achievement of equality of both the precession angles and the deflection angles of spins of virtual photons created by the structure's quantum objects is impossible. As a result of the action of spin supercurrent, a cavity structure is filled with energy (see Chapter 9); as follows from experiments by Parr [113,114,115] an energy field exists as well around the cavity structure, he called the field a "bubble".

Let us consider some examples.

In the landscape shown in Figure 11.5 the space between mountains, which is actually a cavity structure, will be filled with spin supercurrent, and, consequently, the energy associated with the current. According to Parr's experiments, an energy field exists on the maintain slope as well. Let us denote the energy of this field W_b (the lower index "b" is the first letter in Parr's word "bubble"), then the following holds for the maintain slope:

$$W_b \neq 0. \qquad (11.4)$$

The plain landscape (Figure 11.6) is not characterized by similar energy, in this case

$$W_b = 0. \qquad (11.5)$$

Figure 11.5. Caucasus mountains.

Figure 11.6. Russian steppe.

Consequently, people living between mountains or on mountain slopes and people living in plain-like regions must have different characters and diseases. Let us analyze the influence of terrain relief on the population longevity in the region. Michel Poulain and Giovanni Pes in the early 21 century identified the

so-called blue zones in which there are the greatest number of long-livers (age greater than 90) [130]. So far, four “Blue Zones” have been identified around the world: a mountainous region of Sardinia in Italy; Okinawa in Japan; the Nicoya peninsula in Costa Rica; and the island of Ikaria in Greece [131].

Figures 11.7-11.10 contain small photos of terrain relief of the regions constituting “Blue Zones”. As follows from these photos, all buildings are located on maintain slopes. Consequently, as follows from Eq. (11.4), “Blue Zones” are zones filled with energy.

Figure 11.7. Sardinia in Italy.

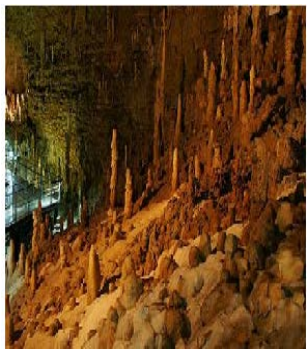


Figure 11.8. Okinawa in Japan.

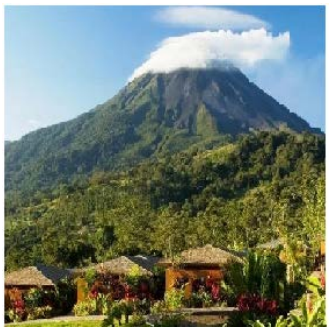
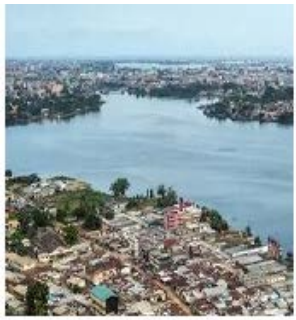


Figure 11.9. Nicoya peninsula in Costa Rica

Figure 11.10. Ikaria in Greece

Let us consider also the zones in which average life expectancy has the minimum value in the world (~25 years less than in “Blue Zones” [132]).

Figures 11.11-11.12 contain photos of terrain relief of regions in Somalia and in the Republic of Ivory Coast. There exist other zones in the world with the same average life expectancy and analogous terrain relief of regions. But the chosen zones are distinct from one another by the presence of ocean and similarity of their economic levels (at least of the Republic of Ivory Coast) to the economic level of Costa-Rica. The neighborhood of ocean means for population a fresh air and a great number of sea foods, as it takes place in regions of “Blue Zones” located both on mountains and on the ocean or sea beach.

	
Figure 11.11. Somalia	Figure 11.12. Republic of Ivory Coast

One of the distinctions between regions of the “Blue Zones” and those presented on Figures 11.11-11.12 is their relief. In the latter case the landscape is a plain landscape and consequently, in accordance with Eq. (11.5), is not characterized by energy connected with the spin supercurrent. It can be one of the reasons of low average life expectancy of population.

Thus, the region relief type (plain or mountain) can influence the population average life expectancy in this region.

It is possible that the longevity in mountains was one of the reasons of creating pyramids from ancient times (for example, in Egypt [Figure 9.3 Chapter 9] and in Russia [Figure 11.13]) until the present time (in Russia [Figure 11.14], in France [Figure 11.15]).

Social aspect

From the considered energy concept (Eq. [11.4] or Eq. [11.5]) it follows that there is no doubt about the existence of difference in some social aspects

(diseases, character) of the people living in small houses in small villages (Figure 11.16) and people living in cities with many-floor buildings and underground railway (Figure 11.17).

Figure 11.13. Pyramids. Russia, Kola peninsula, age>9000 years.

Figure 11.14. Pyramid in Russia, near Moscow, XX C.

Figure 11.15. Pyramid in France, Paris, Louver museum, XX C.

Figure 11.16. A village.

Figure 11.17. City buildings with underground railway.

According to property 6 of spin supercurrent, it is not shielded by electromagnetic and molecular screens. Therefore, every human in such a city is exposed to the action of spin supercurrents continuously radiated by virtual photons created by quantum objects of ambient buildings and underground tunnels which are the cavity structures (see Eq. [9.1]).

It should be noted that the considerable density of population in a city means considerable density of virtual photons created by quantum objects constituting city population. According to property 7 of spin supercurrent (Section 1.2, Eq.[1.21]), the total spin supercurrent emerging between a great number of virtual photons can be negligible. As a result, some people can feel loneliness and helplessness in a city stronger than in a village.

11.3. The "Memory" of Water in Ecology

In this work the possibility of action the spin supercurrent by means of water as an information matrix was shown on examples of using homeopathic remedies (Section 2.1), water irradiated by electromagnetic oscillations (Section 3.2), water passed through the area of magnetic vector potential (Section 7.1.2), water irradiated by an operator (Section 8.2.2).

In Section 2.1 (Fig. 2.2 and Eq. (2.2)) the principle of the action of spin supercurrent by means of information matrix is described.

According to Eq. (1.12), the spin supercurrent influences the characteristics of precession (the angles of precession and deflection) of spins of virtual photons created by quantum objects of water. Therefore, for saving these changes the stable states differing in the characteristics of imposed spins must be in water; the existence of such stable states is a base of existence of water "memory" [133].

The experimental investigation of water properties conducted by Pershin shows that the stable states differing in characteristics of water quantum objects spins exist in water [134]. He proved that the two-atoms hydrogen (for example, in molecule H_2O) is a mix of two allotropic forms — ortohydrogen and parahydrogen. According to quantum mechanics, ortohydrogen protons' spins are oriented along one direction; paraphydrogen protons' spins are oriented in the opposite directions. The orto- and para- hydrogens have different heat capacity, thermal conductivity, melting point, steam elasticity, magnetic properties, and the energy of parahydrogen is less than the energy of ortohydrogen.

According to Eq. (1.10), spins of quantum objects are connected with spins of virtual photons created by these objects. Consequently, spin supercurrent influencing spins of virtual photons created by quantum objects of water can influence spins of these quantum objects. As spin supercurrent performs a

transfer of angular momentum, it can initiate a transit between stable states of water connected with orto- or para- hydrogen, and thus activate the “memory” of water.

Discussion

The famous researcher of nature V. Vernadsky considered the possibility “of extension of biosphere’s border to Cosmos” [135].

The properties of spin supercurrent presented in this work are in accordance with the study by Vernadsky. In particular, it is shown in Section 7.2 that quantum correlations between quantum objects are performed by spin supercurrent; at the same time, quantum teleportation of photons from a ground observatory to an Earth orbit satellite, at a distance of up to 1400 km [19] was observed.

Consequently, spin supercurrent can emerge between virtual photons created by quantum objects of Cosmic bodies, on the one hand, and BSs on the Earth, on the other hand, thus extending “the biosphere’s border to Cosmos.”