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VEGETATIVE BIORITHM AS A PROBLEM FUNCTIONAL VEGETOLOGY AND ZHEN-TSZYU THERAPY

(FINAL INFORMATION)

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Summary. *The article presents the final scientific data under the section "Systemic vegetative biorhythms as a problem of functional vegetology and traditional Zhen-Tszyu therapy". Forgotten knowledge of previous civilizations should become clear and accessible through their scientific adaptation and belong to modern society. An improved methodology for visualizing experimental materials aimed at their biophysical reality, vegetative nature and requires the attention of general practitioners and rehabilitation physicians.*
Key words: vegetative homeostasis, functional vegetology, theory and practice of Zhen-Tszyu therapy

Резюме. *В наведеній статті приводяться дані по розділу "Системні вегетативні біоритми як проблема функціональної вегетології і традиційної Чжень-цзю терапії". Забуті знання попередніх цивілізацій повинні стати зрозумілими і доступними через їх наукову адаптацію і належати сучасному супільству. Удосконалена методологія візуалізації експериментальних матеріалів спрямована на підтвердження їх біофізичної реальності, вегетативної сутності і вимагає уваги лікарів загальної практики та реабілітологів.*
Ключові слова: вегетативний гомеостаз, функціональна вегетологія, теорія і практика Чжень-цзю терапії

Резюме. *В статье приводятся заключительные научные данные по разделу "Системные вегетативные биоритмы как проблема функциональной вегетологии и традиционной Чжень-цзю терапии". Забытые знания предыдущих цивилизаций должны стать понятными и доступными через их научную адаптацию и принадлежать современному обществу. Усовершенствованная методология визуализации экспериментальных материалов направлена на подтверждение их биофизической реальности, вегетативной сущности и требует внимания врачей общей практики и реабилитологов.*
Ключевые слова: вегетативный гомеостаз, функциональная вегетологии, теория и практика Чжень-цзю терапии

Introduction

Verified and supplemented informati-on about our open "two hour functionally-vegetative biorhythm" published in the recent monographs [3, p.191-207]. The mechanism of its pathogenesis, we hypothetically associated with cosmophysical factors (in particular, the solar and phase Moon activity). But information on the reality of atmospheric "standing electromagnetic waves" [8-13] raised the question of its refinement ...

To consider the modern version of the pathogenesis of functional-vegetative biorhythm, one needs to get acquainted with the brief information about the "resonances of Schumann".

Materials and methods

1. RESONANCES OF SCHUMANN

Today, information on the resonances of Schumann has been made available - "standing electromagnetic waves (EMH) of low and ultralow frequencies between the surface of the Earth and the ionosphere" [8,9,10]. They arise in the resonant cavity between the surface of the earth and the ionosphere and are due to lightning discharges in different regions of the planet (Fig.1). Such waves exist for a long time, if, after the bending of the globe, they coincide with their own phase (they come in resonance).

In 1952, König discovered an impressive connection: the main frequency of the "resonance of Schumann" corresponds to the frequency of the alpha rhythm of the human brain - 7.83 Hz (Fig.2), and the frequency of the second harmonic (14 Hz) - to accelerate it [11,13].

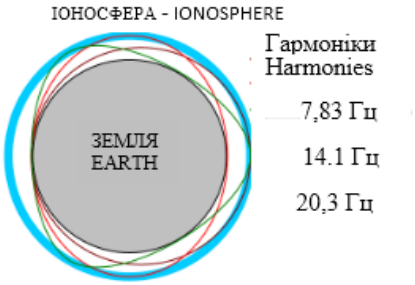


Fig.1

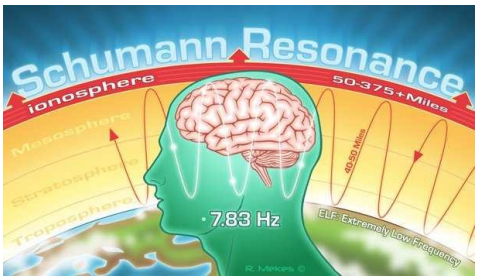


Fig.2

After lengthy inspections, the frequency of "Schuman resonance" was determined - 7.83 Hz (in other words, the Earth's atmosphere vibrates at 7.83 Hz). Waves with this frequency and their harmonics (14,20,26,33,39 and 45 Hz) form the "resonances of Schumann" (Fig. 3-4).

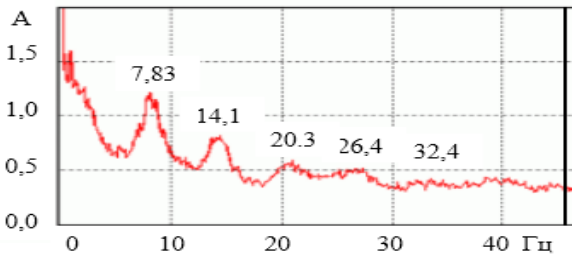


Fig.3

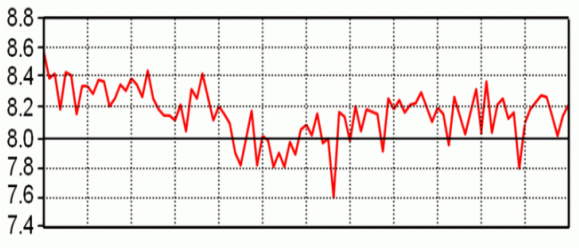


Fig.4

Fig. 3-4 Typical spectrum of electromagnetic oscillations with Schumann resonances)

As background frequencies, they affect the vibrations of the human brain and are the basis of the rhythmic pulsations of the planet and all living things on Earth.

Today, the atmospheric electromagnetic background has radically changed. There was a concept about "Electromagnetic smog" (different frequency radiation of industrial and household appliances). In an atmosphere of so much "electromagnetic waste" that the body ceases to hear "resonances of Schumann" and causes a functional imbalance.

In fact, within Schumann's resonance, scholar resonances have become impossible in the modern city. Therefore V. Ludwig [12] conducted research in underground mines shielded from atmospheric "resonances of Schumann". As a result, other electromagnetic signals were detected - fluctuations of the Earth's magnetic field. His 28-day rhythm is associated with the rotation of the Sun and the phases of the Moon activity.

In the book "Information Medicine" V. Ludwig described an experiment in which volunteers spent three weeks in an underground bin, shielded by reflectors of the signals "resonance of Schumann". Three weeks later, the group developed emotional disorders and migraines, which after a short-term effect of 7.83 were completely eliminated.

In the course of research, V. Ludwig drew attention to the Eastern Therapeutic Philosophy. According to its canons for a healthy longevity, two signals from the environment are required: YIN (female energy) from the bottom and YANG (male energy) from above. If we compare this theory with the experiments conducted, then "resonances of Schumann" coincide with the "man's energy" YANG, and the weak geomagnetic signals of the Earth - with "female energy" YIN. Ancient knowledge argues that for health and harmony, both signals must be balanced ...

The flares in the Sun change the electromagnetic properties of the lower ionosphere. This causes a change in the resonance frequencies of the cavity and the disruption of vegetative adaptation mechanisms in children and the elderly [11]. But the mechanisms of this

dependence remain unclear. The proposed scheme of two oscillatory systems (human - Schumann's atmospheric resonance) allows us to ask about the nature of the two-hour vegetative biorhythm [3,c.191] detected by us. It should be noted that recently the standard "Schumann frequency" has begun to increase. If in 1990 it was 7.83 Hz, then in 1994 - 8.6 Hz, and in 1998. has grown to 11.2 Hz, which is many times higher than the permissible estimated level [13].

Today, the famous laboratories are known for a long time studying "resonances of Schumann". One of them is in Russia (Tomsk State University). Materials of her daily observations [11-12] we used to analyze the triggers of the functionally-vegetative biorhythm discovered by us.

The reason for our attention was the similarity of the daily dynamics of the "resonances of Schumann" with a two-hour functionally-vegetative biorhythm (Fig. 5-6). Their dynamics in Hz is given in the hours of the Tomsk Summer Fetal Time (TLDCH = UTC + 7hrs).

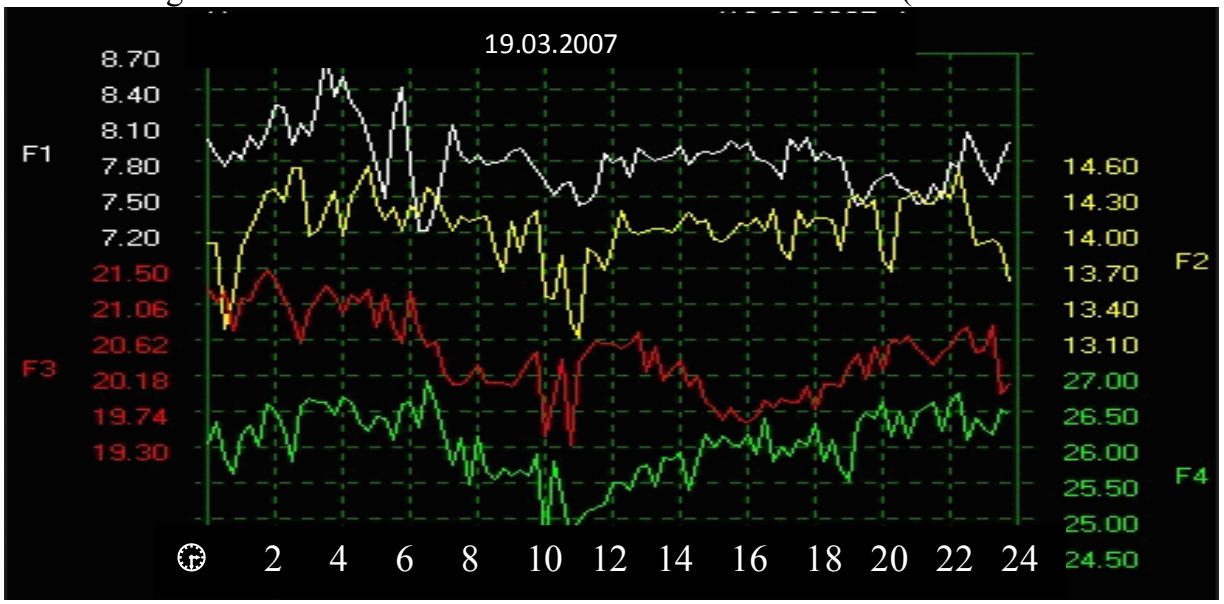


Fig. 5 Daily frequency harmonics of Schumann resonances (F1-F4)

For comparison, we show the two-hour vegetative biorhythm of channels BL-SP (female group of adolescence, phase of the Full Moon).

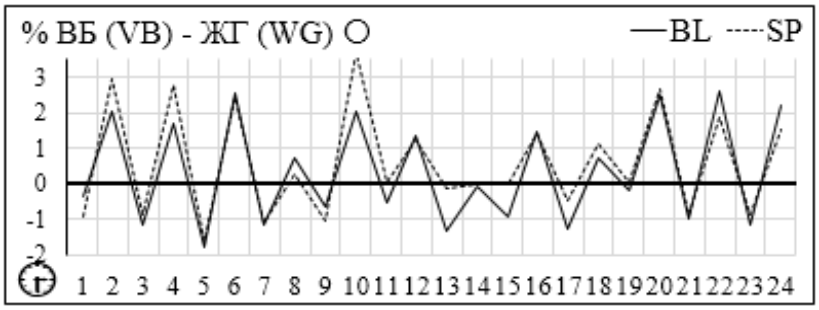


Fig. 6 Two hours functional and vegetative biorhythm BL-SP system

Results and discussion

2. SYNCHRONOUS SYSTEM DEPENDENCE AS A VEGETATIVE PATHOGENESIS FACTOR

Today it is established that daily system interdependence exists in the form of synchronous, asynchronous and non-synchronous (synchronous-asynchronous) activity of separate

channels. Both variants have received experimental confirmation and deserve special attention. Mechanisms of the daily synchronous dependence of individual functional systems (their vegetative portrait) are given in Table 1 and Diagrams (Fig.7-12). For example: the daily activity of the channel BL causes the synchronous daily dependence of the system SP^{-2} (second functional and vegetative complex)...

Table 1

SYNCHRONAL DEPENDENCE

FC	System pairs of synchronous activity											
	BL	**GB**	**ST**	**SP**	**LR**	**KI**	**SI**	**TE**	**LI**	**LU**	**PC**	**HT**
	SP^{-2}	ST^{-1}	GB^{-1}	BL^{-1}	GB^{-1}	LR^{-2}	LU^{-4}	GB^{-1}	GB^{-1}	SI^{-3}	SI^{-3}	GB^{-1}
		LR^{-2}	LR^{-2}		ST^{-1}	HT^{-4}	PC^{-4}	LI^{-3}	ST^{-1}	PC^{-4}	LU^{-4}	KI^{-2}
		LI^{-3}	LI^{-3}		KI^{-2}		HT^{-4}	HT^{-4}	TE^{-3}	HT^{-4}		SI^{-3}
		*TE^{-3}							HT^{-4}			TE^{-3}
		HT^{-4}										LI^{-3}
												LU^{-4}

Note: "-1 -4" - indicates the affiliation of the channel to a particular functional complex

Confirmation of Table 1 is the following:

- "matrix" synchronous dependence (straight black lines, fig.7) and due to asynchronous systemic influence (direct red lines, fig.8);
- Materials "Biophysical Atlas of Synchronous System Dependence" (fig.9-12).

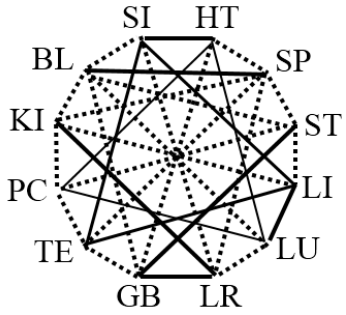


Fig.7

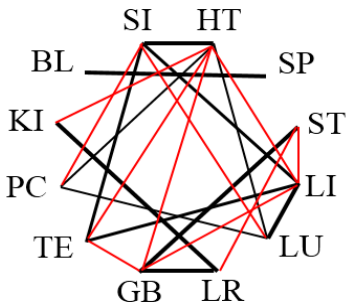
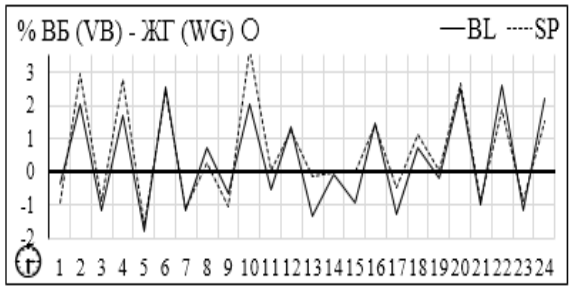
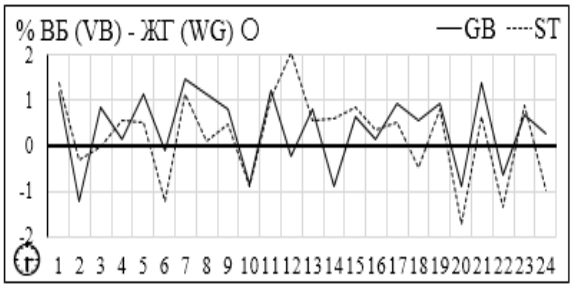


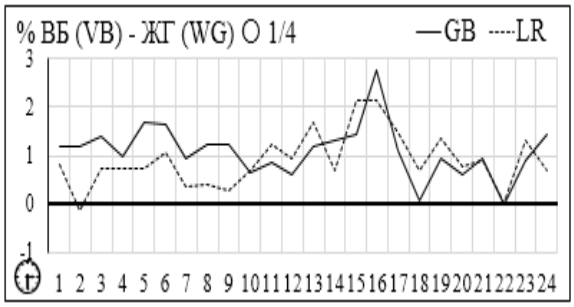
Fig.8

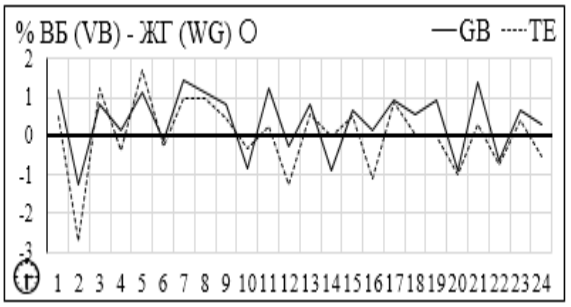
2.1. BIOPHYSICAL ATLAS OF SYNCHRONOUS SYSTEM DEPENDENCE (fig. 9-12)

SYNCHRONAL DEPENDENCE OF FC-1 CHANNELS









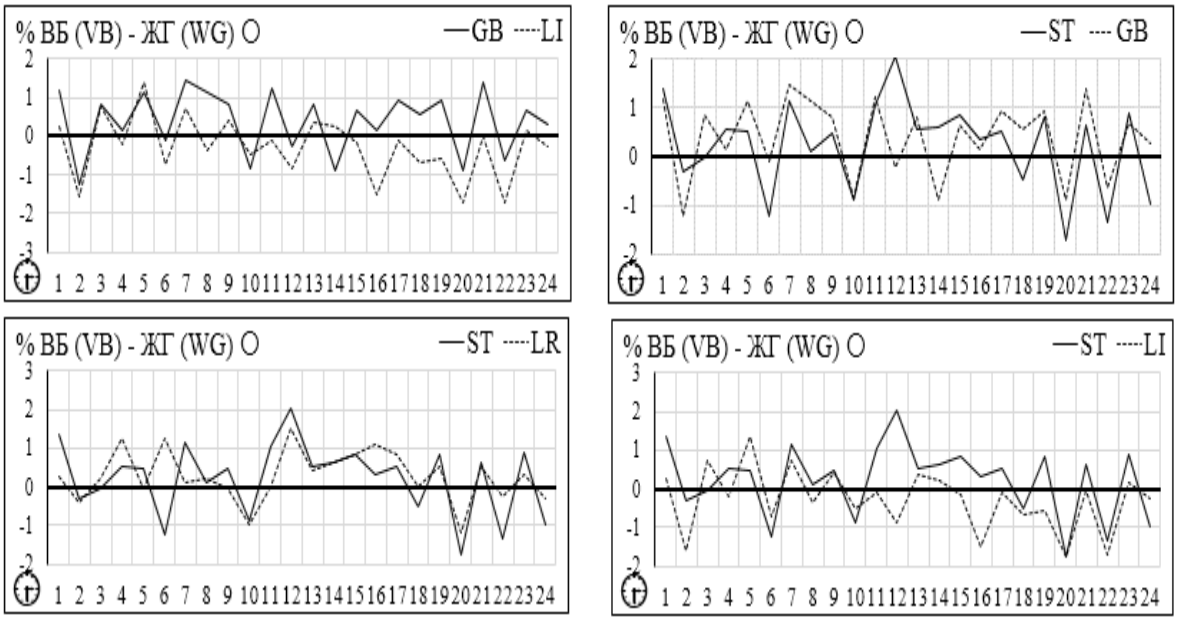


Fig. 9 System synchronous dependence on the activity of FC-1 (BL-GB-ST)

SYNCHRONAL DEPENDENCE OF FC-2 CHANNELS

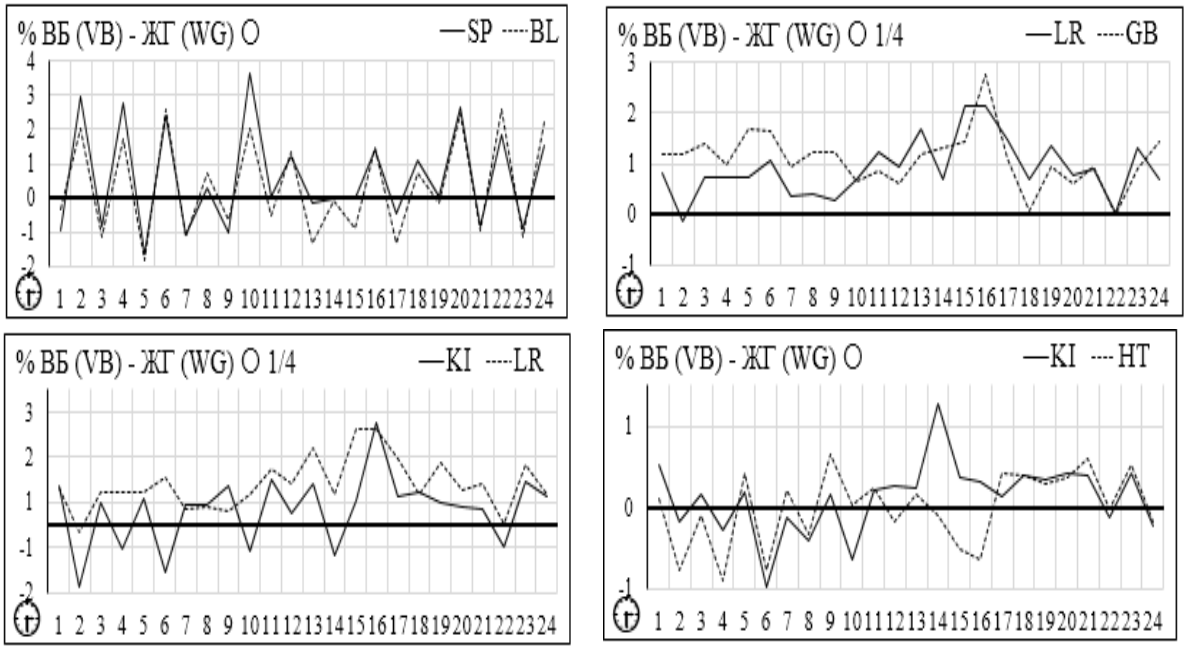
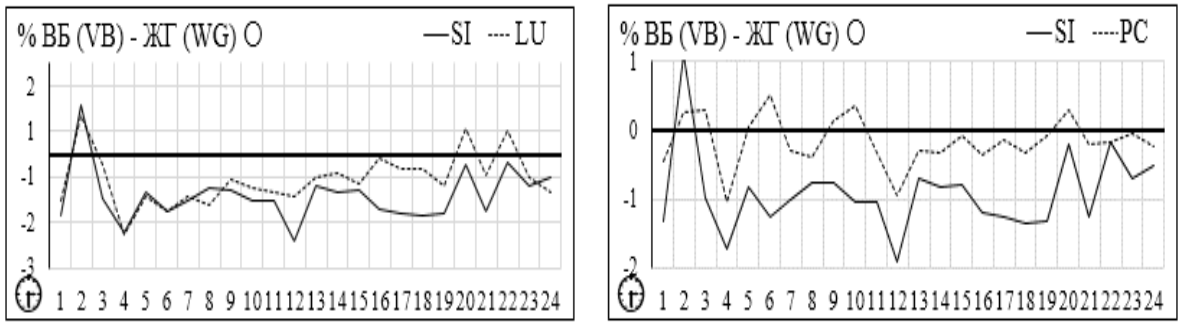


Fig. 10 System synchronous dependence on the activity of FC-2 (SP-LR-KI)

SYNCHRONAL DEPENDENCE OF FC-3 CHANNELS



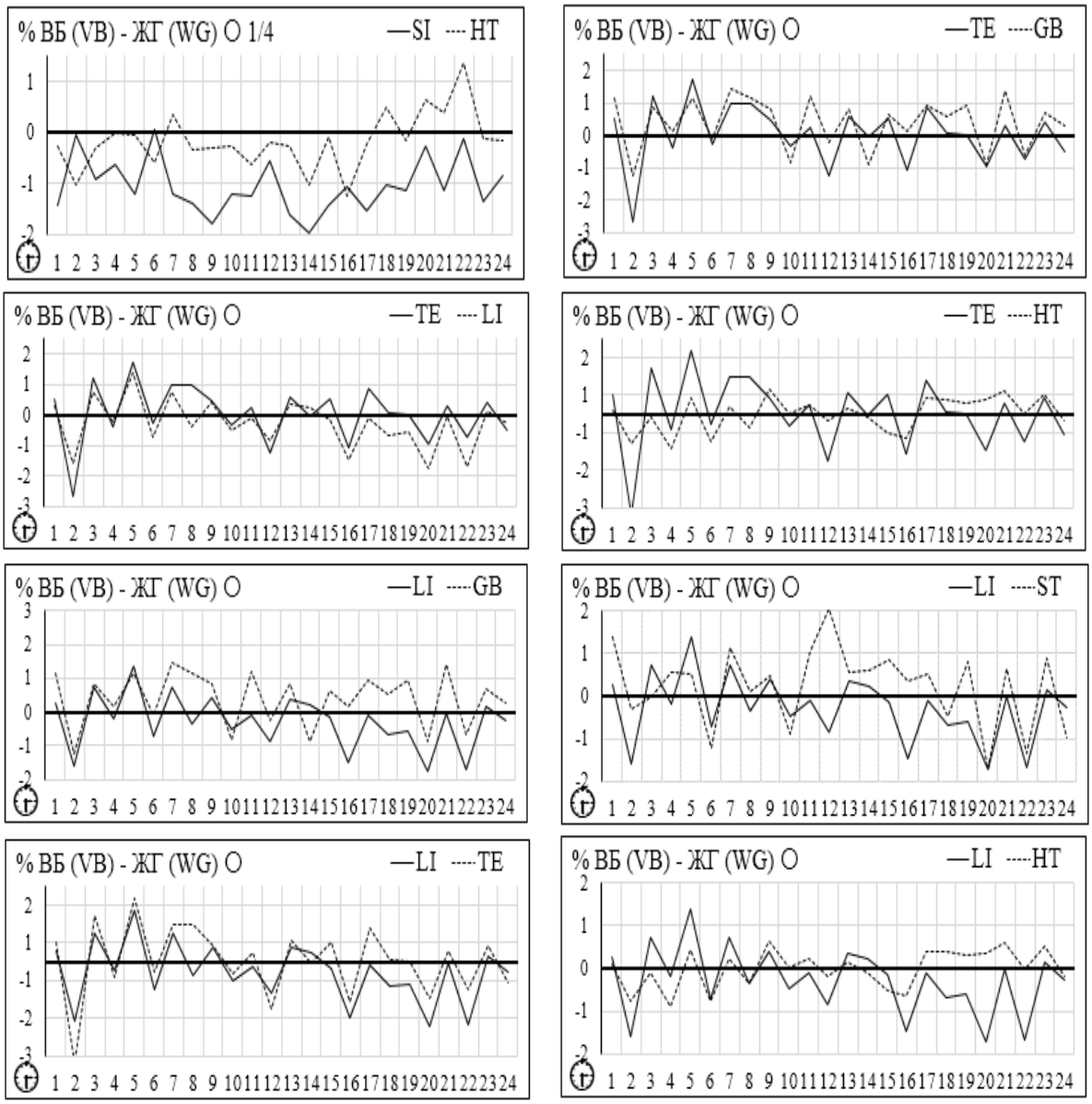
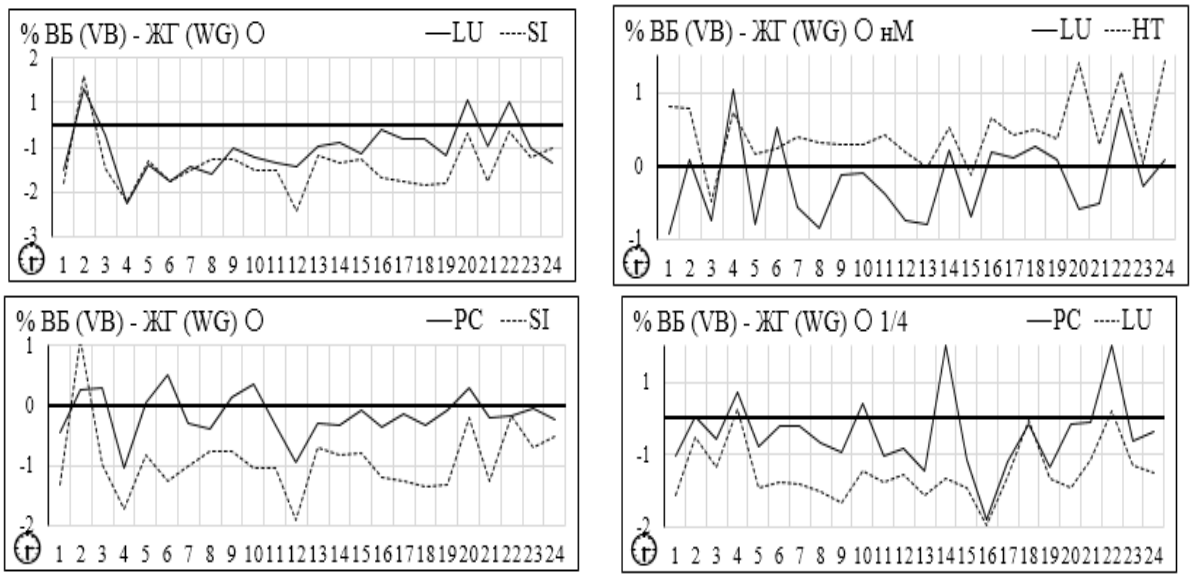


Fig. 11 System synchronous dependence on the activity of FC-3 (SI-TE-LI)

SYNCHRONAL DEPENDENCE OF FC-4 CHANNELS



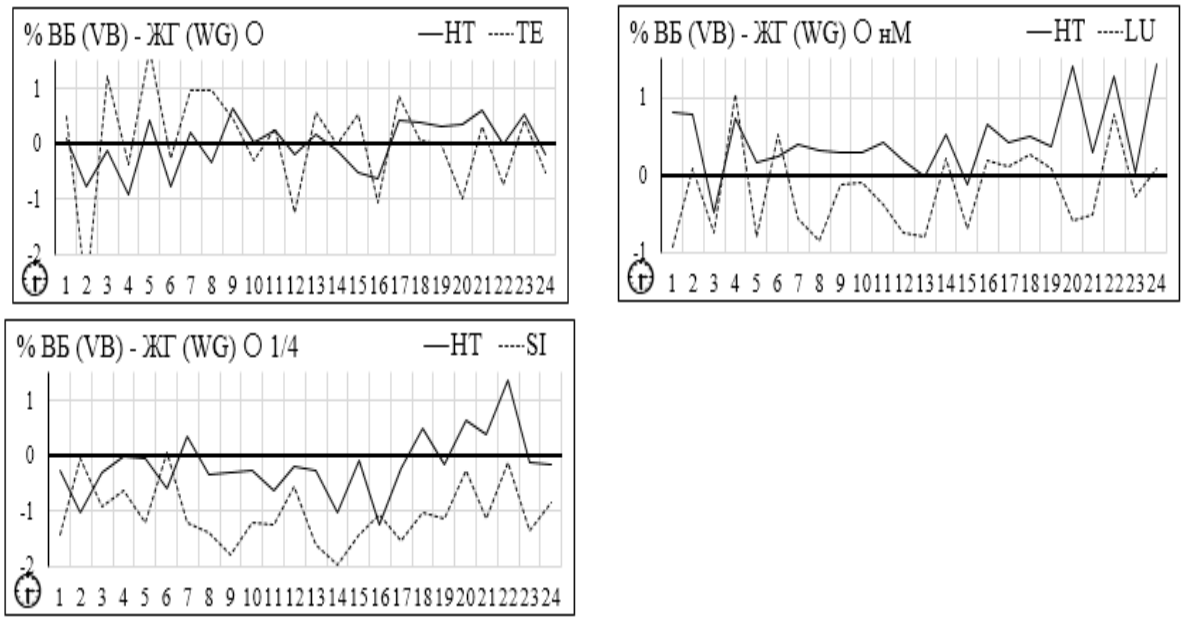


Fig. 12 System synchronous dependence on the activity of FC-4 (LU-PC-HT)

3. ASYNCHRONOUS SYSTEM DEPENDENCE AS A VEGETATIVE PATHOGENESIS FACTOR

Mechanisms of the daily asynchronous dependence of individual functional systems (their vegetative portrait) are given in Table 2 and Diagrams (Fig.13-16). For example: the daily activity of the channel BL causes the synchronous daily dependence of the system SP^{-2} (second functional and vegetative complex)...

Table 2

ASYNCHRONAL DEPENDENCE

FC	SYSTEMS OF DEPENDENT RHYTHM											
	BL	**GB**	**ST**	**SP**	**LR**	**KI**	**SI**	**TE**	**LI**	**LU**	**PC**	**HT**
I	±GB	±BL	±BL	±GB	±BL	±BL	±BL	±BL	±BL	±BL	±ST	±BL
	±ST	±SP	±SP	±ST				±GB	±ST			±GB
II	±LR			±LR	±SP	±SP	±LR	±SP	±SP	±LR	±KI	±SP
	±KI			±KI					±KI			
III	±SI	±TE	±LI	±TE	±SI	±LI					±TE	
	±TE			±LI								
	±LI											
IV	±LU	±HT	±PC	±HT	±LU	±PC		±PC				
	±HT											

Confirmation of tabl.2 is the following:

- "matrix" asynchronous dependence (dashed black lines, fig. 13) and due to it additional asynchronous systemic influences (dashed red lines, fig.14);
- Materials of "Biophysical Atlas of Asynchronous System Dependence" (fig.15-18).

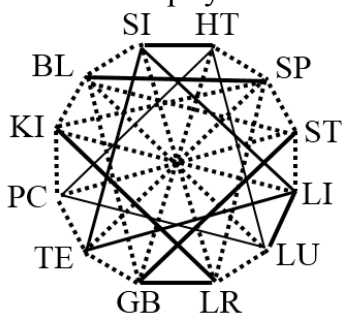


Fig.13

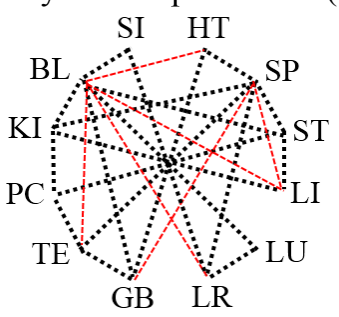


Fig.14

3.1. BIOPHYSICAL ATLAS OF ASYNCHRONOUS SYSTEM DEPENDENCE (Fig.16-18)

ASYNCHRONAL DEPENDENCE OF CHANNELS FC-1

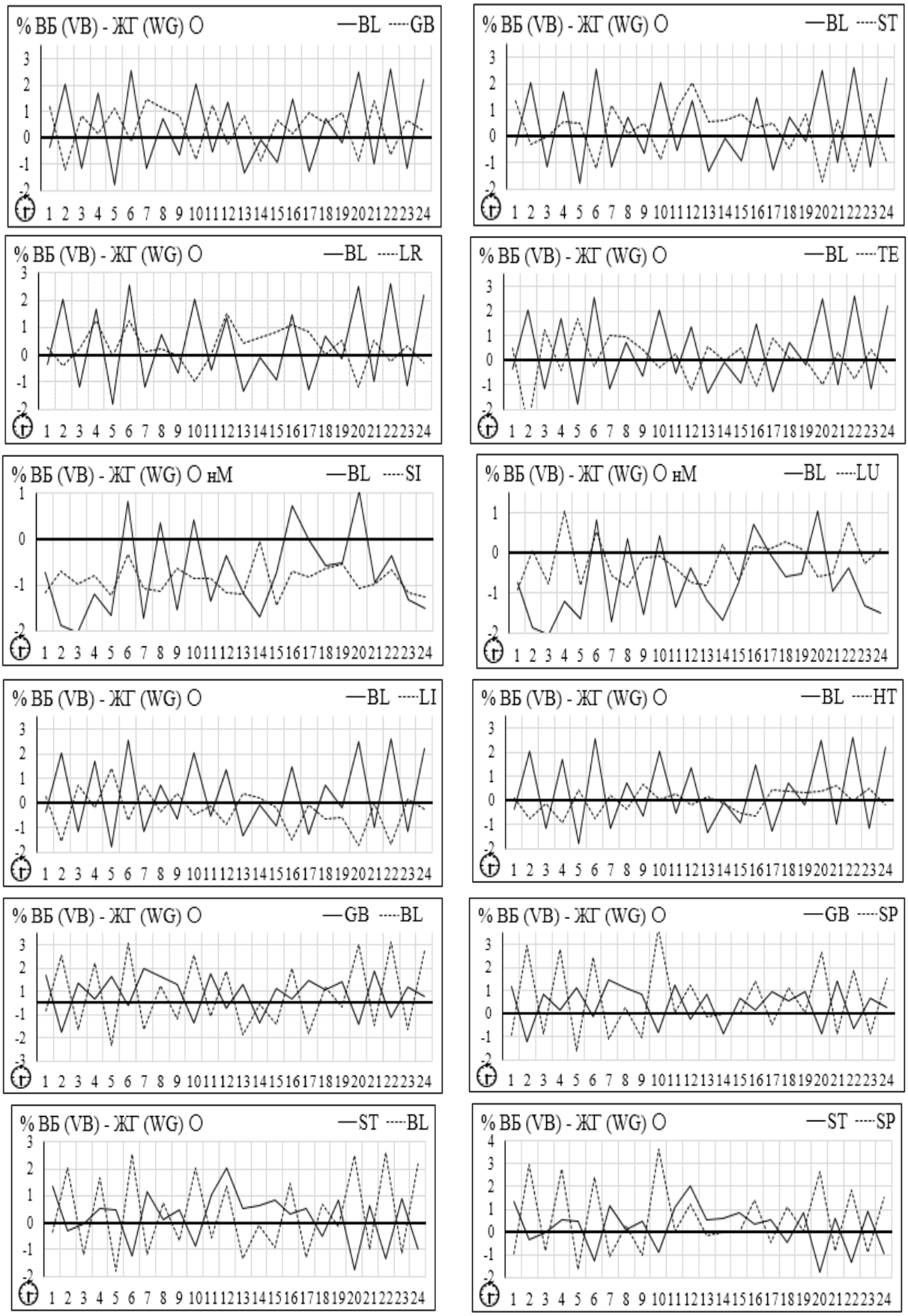
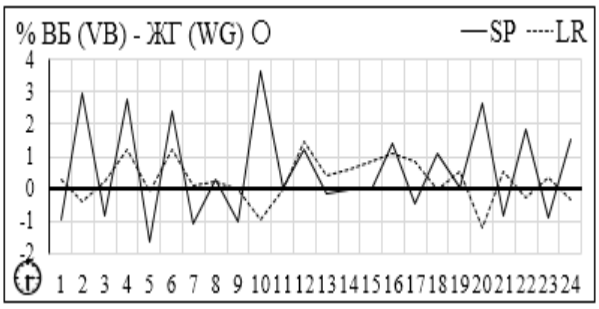
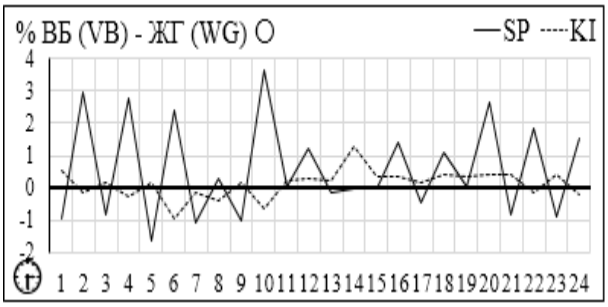
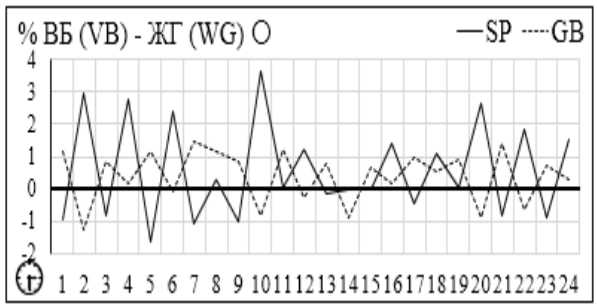


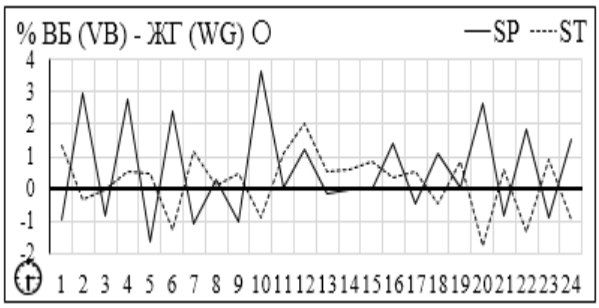
Fig. 15 System asynchronous dependence on the activity of FC-1 (BL-GB-ST)

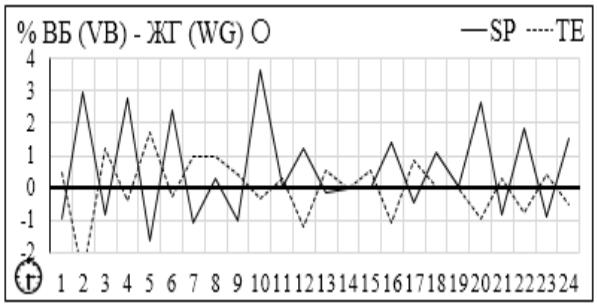
ASYNCHRONAL DEPENDENCE OF CHANNELS FC-2

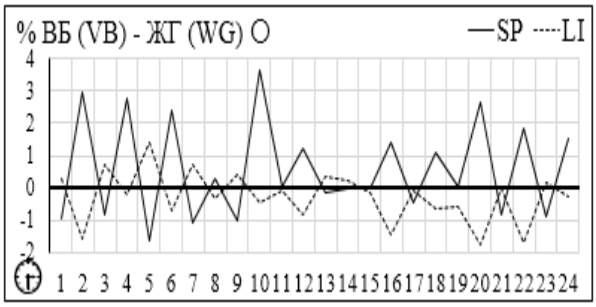


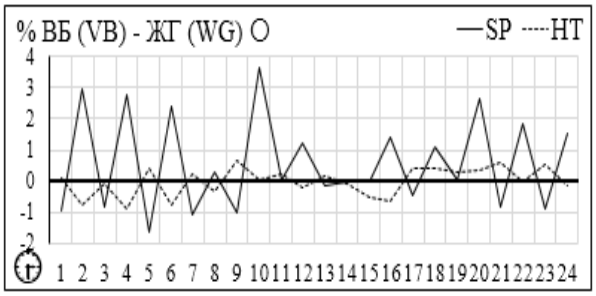


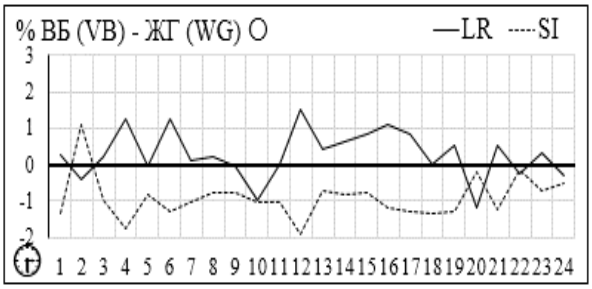


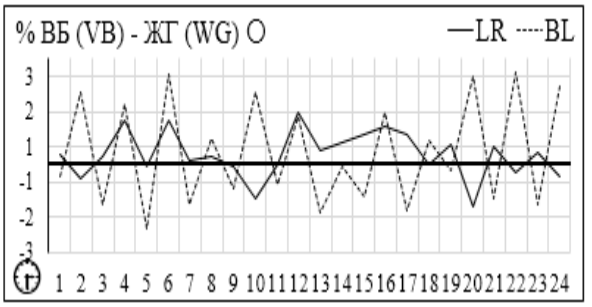


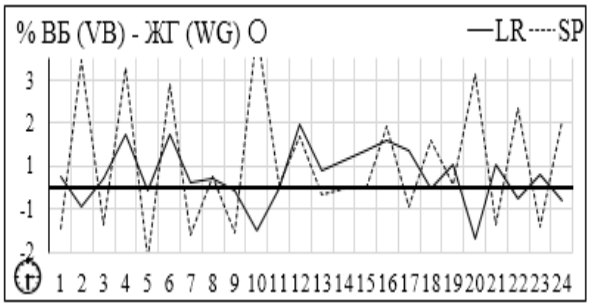


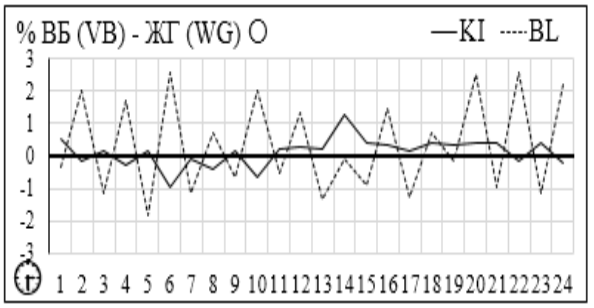


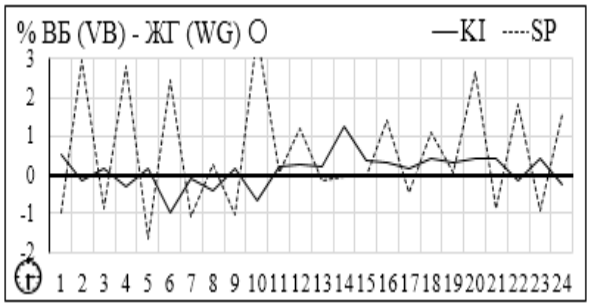












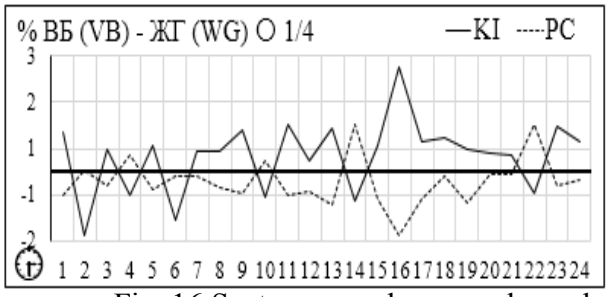


Fig. 16 System asynchronous dependence on the activity of FC-2 (SP-LR-KI)

ASYNCHRONAL DEPENDENCE OF CHANNELS FC-3

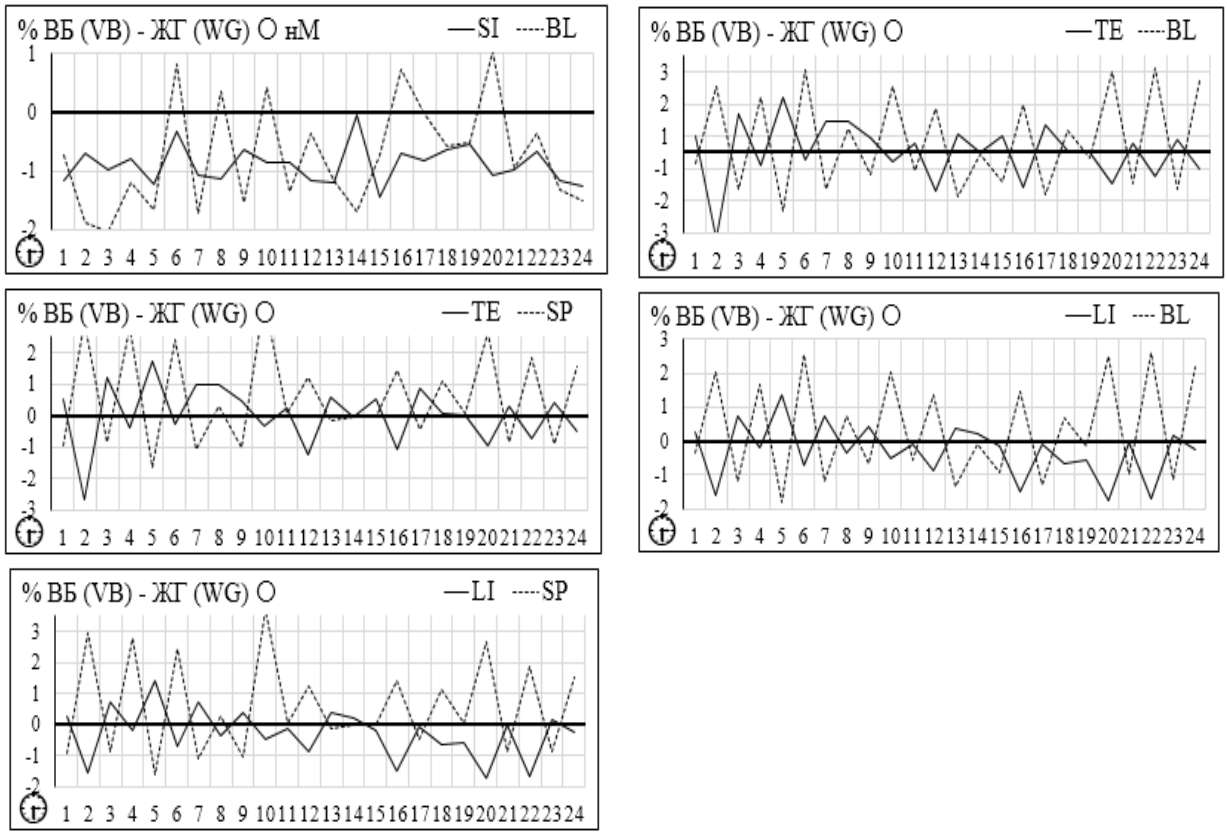


Fig. 17 System asynchronous dependence on the activity of FC-3 (SI-TE-LI)

ASYNCHRONAL DEPENDENCE OF CHANNELS FC-4

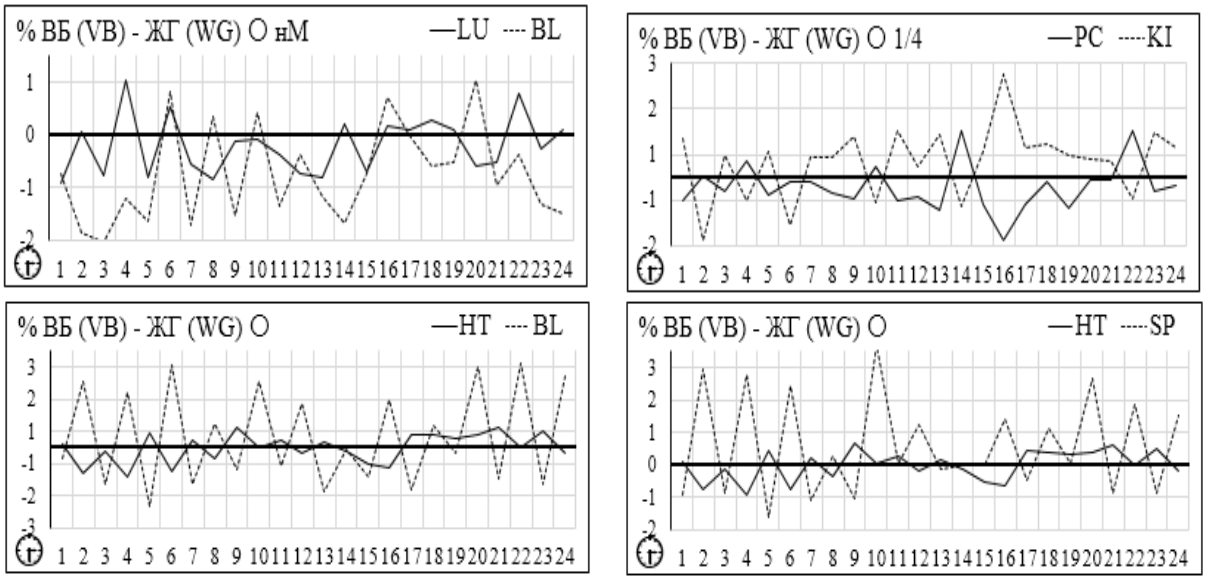


Fig. 18 System asynchronous dependence on the activity of FC-4 (LU-PC-HT)

4. "NO SYNCHRONIZED" SYSTEM DEPENDENCE OF FC-1 CHANNELS

Table 3

FC	System pairs are not synchronized dependencies											
	BL	**GB**	**ST**	**SP**	**LR**	**KI**	**SI**	**TE**	**LI**	**LU**	**PC**	**HT**
		TE^{-3}				LI^{-3}	LI^{-3}	GB^{-1}	KI^{-2}	LI^{-3}	TE^{-3}	
							TE^{-3}	SI^{-3}	SI^{-3}			
								PC^{-4}	LU^{-4}			

Note: "$^{-1\ -4}$" - indicates the affiliation of the channel to a particular functional complex

Confirmation of Table 6. is the following:

- "matrix" synchronous-asynchronous dependence (dashed black lines; fig.19) and due to it additional synchronous-asynchronous systemic influences (dashed red lines, fig. 20);
- Materials of "Biophysical Atlas of Asynchronous System Dependence" (Fig.21-24).

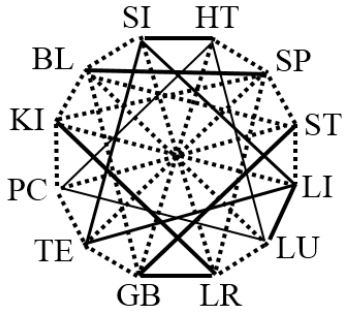


Fig.19

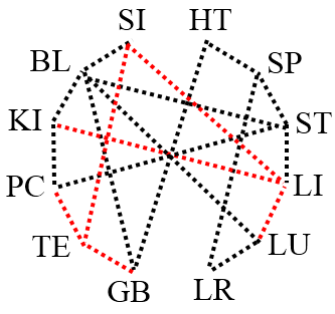


Fig.20

4.1.BIOPHYSICAL ATLAS "NO SYNCHRONIZED" SYSTEM DEPENDENCE (fig.21-24)

CHANNELS OF THE FIRST COMPLEX

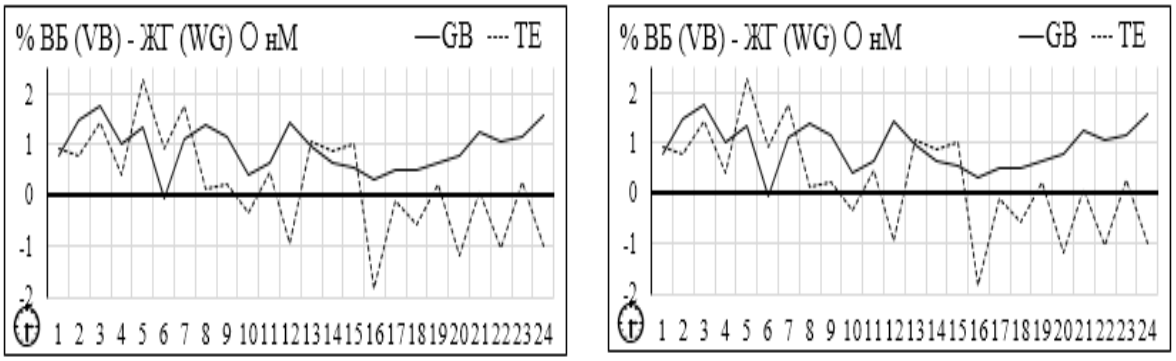


Fig. 21 System asynchronous dependence on the activity of FC-1 (GB)

CHANNELS OF THE OTHER COMPLEX

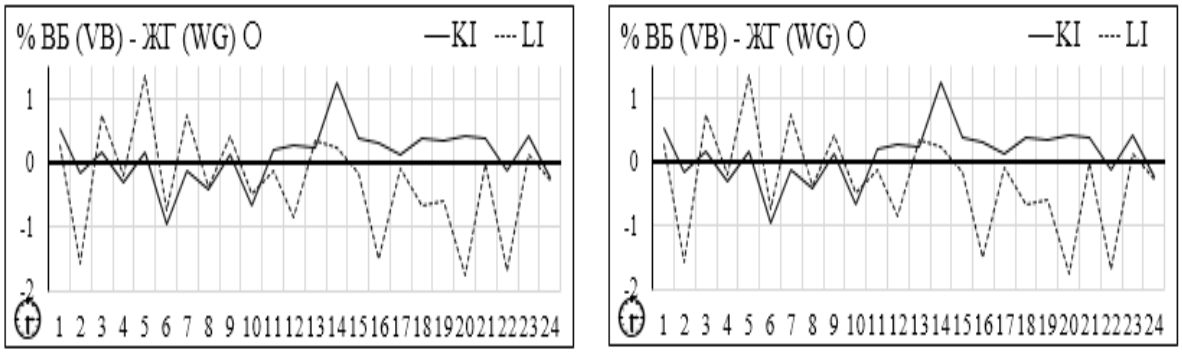


Fig. 22 System asynchronous dependence on the activity of FC-2 (KI)

CHANNELS OF THE THIRD COMPLEX

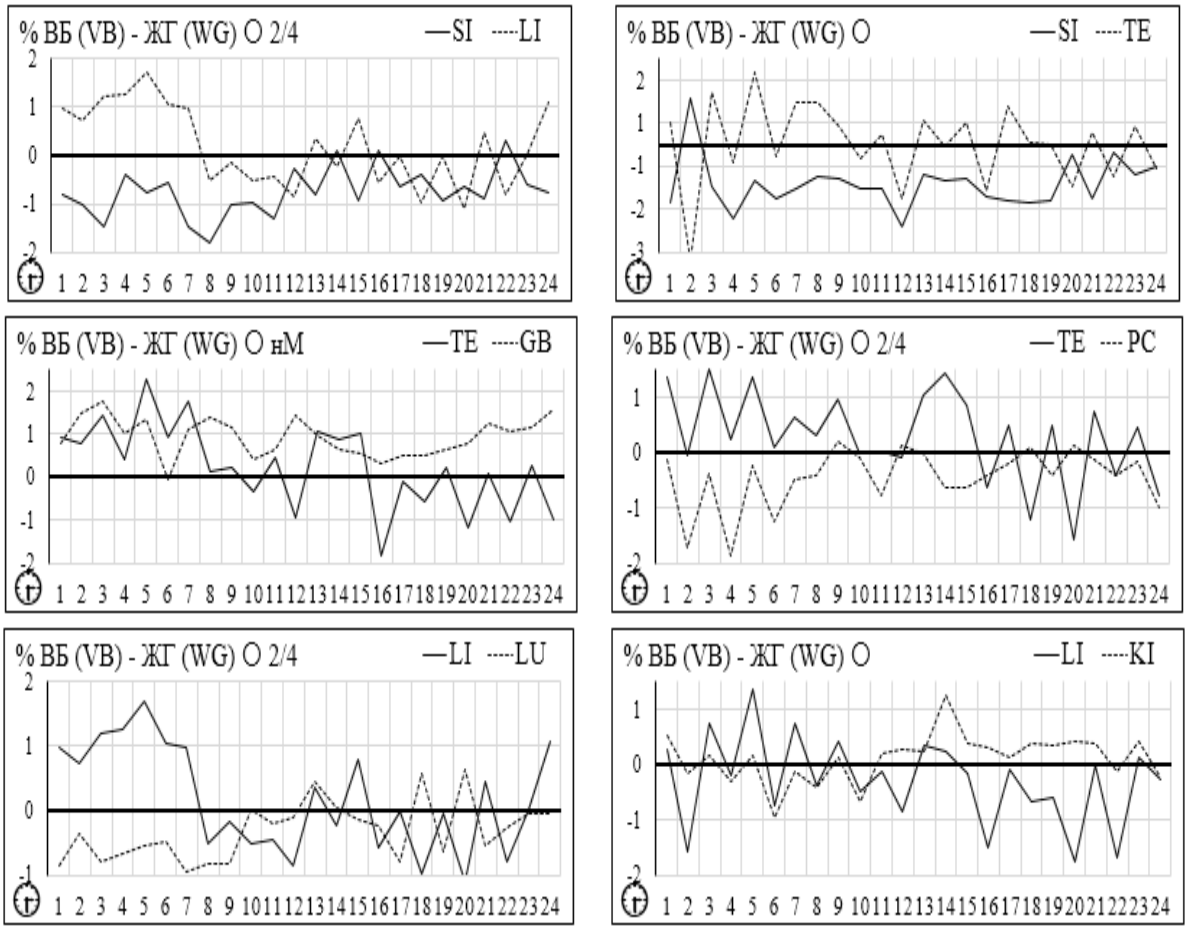


Fig. 23 System asynchronous dependence on the activity of FC-3 (SI-TE-LI)

CHANNELS OF THE FOURTH COMPLEX

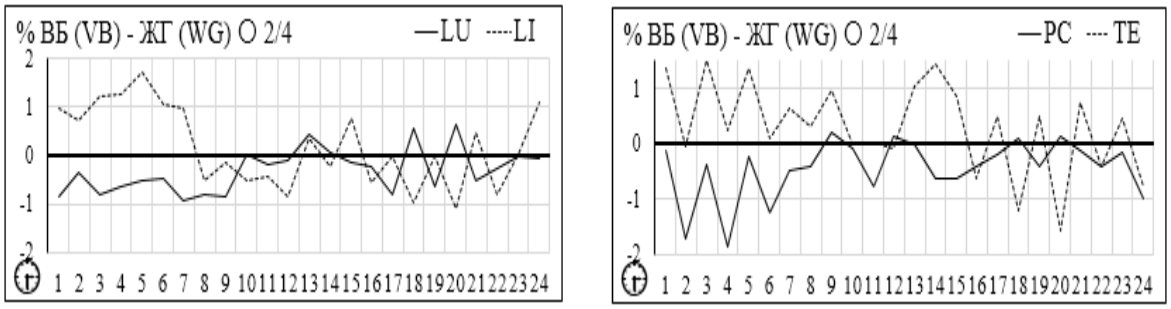


Fig. 24 System asynchronous dependence on the activity of FC-4 (LU-PC)

5. SYSTEM PARADOXES REACTIONS AS FACTOR OF VEGETATIVE PATHOGENESIS

The phenomenon of paradoxical reactions (**PR**) had been unknown before our researches. Now, it has been established that for the excitation of any channel every system provides three types of response: synchronous excitation, synchronous oppression, and paradoxical reactions [6, p.209-217]. For the latter, synchronous excitation of the dependent system is typical. This excitation accompanies growing activity of the Main channel to the zone of the norm, and its paradoxical oppression after channel exceeds the zone of the functional norm (fig. 25).

An example of paradoxical excitement (PE) is represented by the paradoxical reactions of BL-SP (oppression to the zone of the norm and further excitation). An example of paradoxical inhibition (PO) is represented by the paradoxical reactions of LI-TE-SI, LU-PC-

TE, ST-GB-KI-LR (excitation before and after the zone of the norm and further oppression).

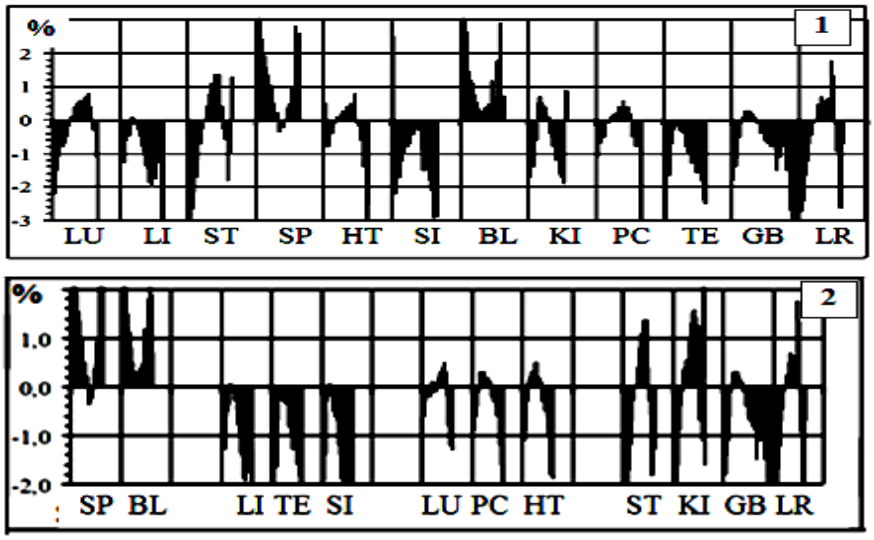


Fig. 25 Types of systemic (1) and complex (2) paradoxical reactions.

At the same time, the reactions of PO are characterized by specific levels of biophysical conflict – vegetative zones of the deve-lopment of paradoxical reactions. Thus, while systemic paradoxical reactions of BL-SP (FC-1) and LI-TE-SI (FC-2) occur in the zone of vegetative equilibrium, channels of LU-PC-HT (FC-3) initiate biophysical resistance, which is higher than its functional level, and ST-GB-KI-LR, generally, form at the edge of excessive (critical) excitation.

And now, let us take notice of one substantial detail. One and the same channel is able to demonstrate paradoxical reactions to excitation (oppression) of several channels. In other words, we observe the reality of the phenomenon of "functional coverage" (functional cycles according to P. Anokhin). An example is shown on fig.26.

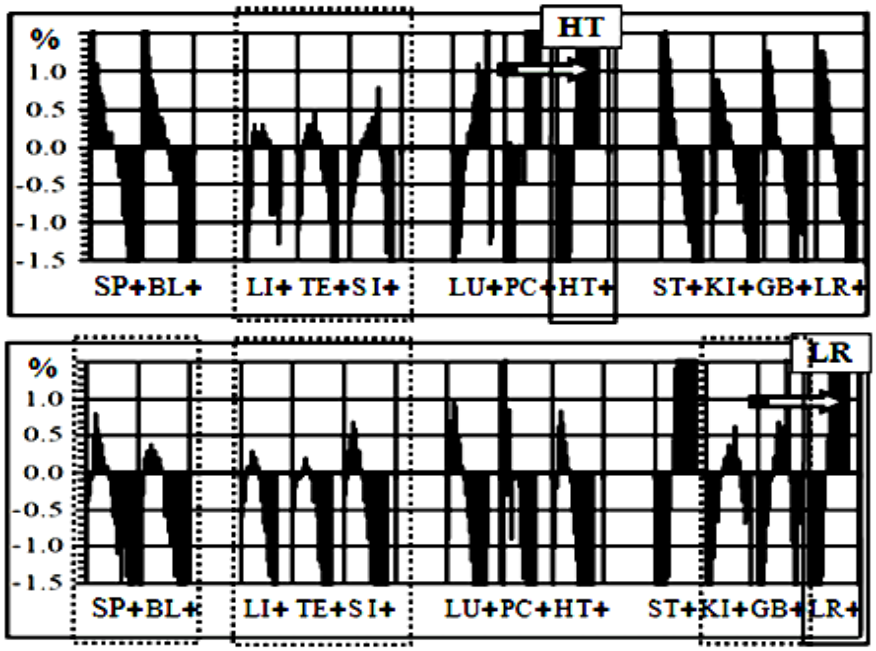


Fig. 26 Paradoxical **HT** reactions on excessive excitation of LI+TE+ SI+ And **LR** on excessive excitation SP+BL+, LI+TE+SI+, KI+GB+.

The significance of "paradoxical reactions" to support the dynamic constancy of functionally vegetative equilibrium is beyond doubt.

From the point of view of the given material, the basic systemic mechanism of functional-vegetative pathogenesis appears as follows (Fig. 27-30).

ФК (FC) - 1 = (BL-GB-ST)

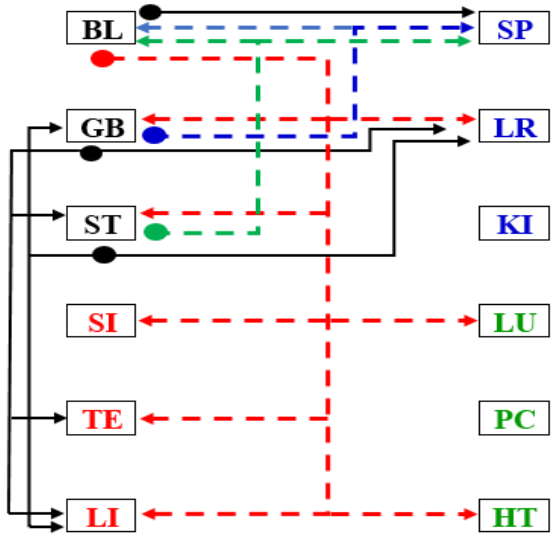


Fig.27

ФК (FC) - 2 = (SP-LR-KI)

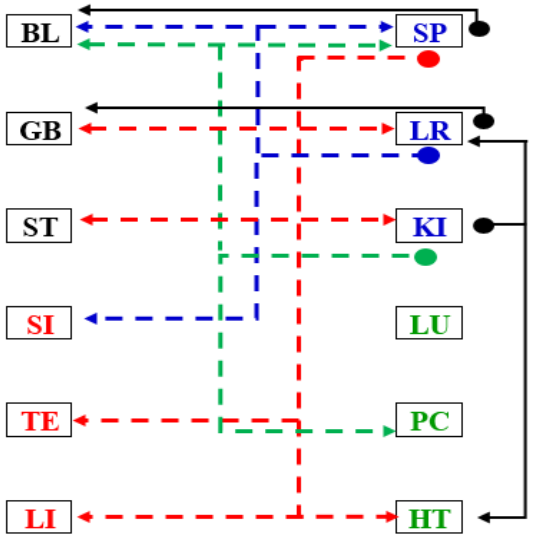


Fig. 28

ФК (FC) - 3 = (SI-TE-LI)

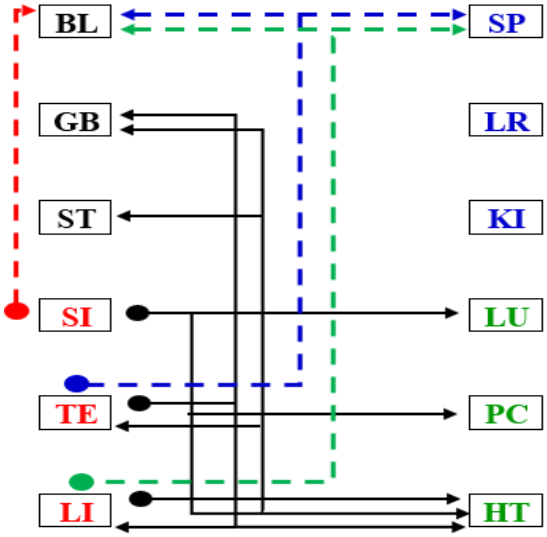


Fig.29

ФК (FC) - 4 = (LU-PC-HT)

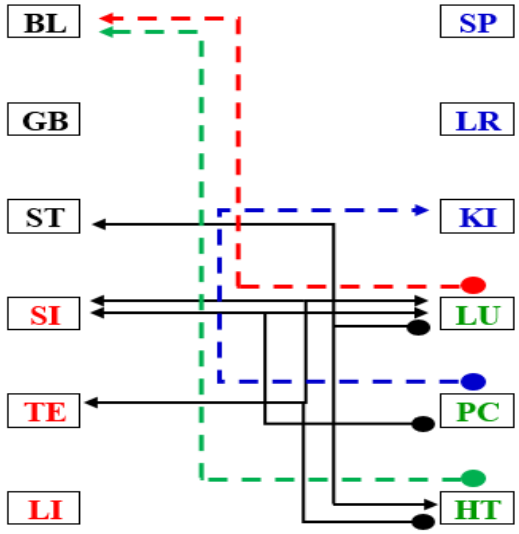


Fig.30

Note: FC-1, FC-2, FC-3, FC-4; *synchronous* —— *asynchronous* – – - *system dependence*

Conclusions and prospect of research

1 The above information makes a significant correction in understanding the mechanisms of pathogenesis of autonomic violations.

2.Atmospheric "resonances of Schumann" is a factor that forms the daily "two hour functional and vegetative rhythm."

3. Synchronous-asynchronous activity of systems of the first and second functional complexes is specific. It forms the direction of vegetative pathogenesis and aims at the dynamic stability of vegetative homeostasis.

4. The previously established cosmophysical factors of vegetative regulation (phases of the moon activity, solar UV radiation) play a significant role in the mechanisms of complex regulation ...

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