

The natural electromagnetic signals in our environment and their simulation as QRS magnetic field therapy

Editor's Note. Prof. Dr. Krauss is extremely important in the development of clinical trials aspects of QRS. He is also the inventor of the non-invasive NIRP method diagnostic technology that teams well with QRS. He was the Founding Dean of the University of Chemnitz, Germany.

The development of life on earth was obviously closely connected to electric and magnetic occurrences in our environment; therefore they can be called biologically effective indicators. "Why should they have not triggered the formation of certain electric steering and regulating processes in living things as part of the evolution?" writes the physicist König /17/. "The crown witness for such a hypothesis is above all the existence of electroencephalographic activity [EEG], which is measurable in the human brain and all higher evolved animals."

The space between earth and the ionosphere represents a so-called wave conductor for the signals produced by lightning [atmospherics]. In this the signals spread as electromagnetic waves, which are more or less damped, depending on their frequency and the condition of the ionosphere /17/. Most of the processes of the electric and magnetic field with a frequency of a few hertz, measured above the earth's surface are, at least in fine weather, the result of stimulation of the earth-ionosphere-hollow space-resonator by far away thunderstorms. This phenomenon is known in physics as the "Schumann-resonance" /17/. Their range is from approx. 7,8Hz to 32Hz /17/ and thus identical in frequency to the complete alpha and beta range in an electroencephalograph [EEG]. To compare the tracings of the Schumann-resonance signals to the ones of an EEG, it is mostly difficult to differentiate, whether you are dealing with tracings of brainwaves or naturally occurring electrical field oscillations /17/.

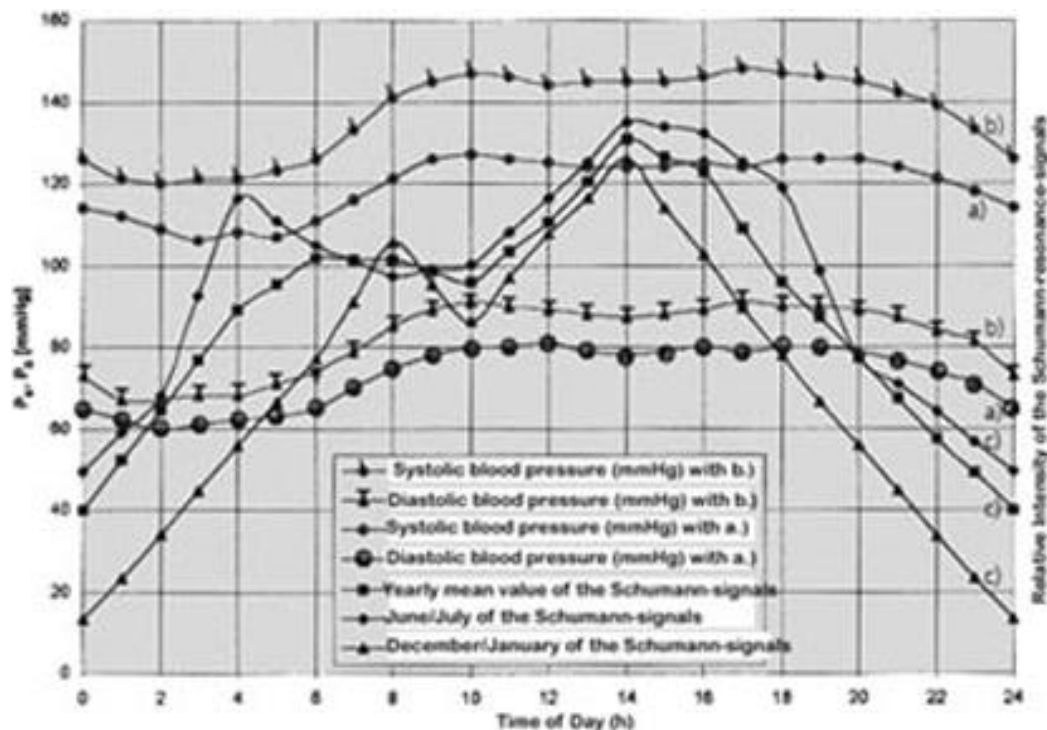
Due to the varying characteristics of the ionosphere there are different daily courses of this signal intensity. They dominate during the day, especially in the frequency range from approx. 8-13Hz [called "signal type I" in /17/]. They are correlated to the EEG-alpha-rhythm. Fine weather favours these atmospheric strongly, while bad weather reduces them. Also this signal type I happens much more strongly during the day than at night. The day and night time intensity is about 3:1 to 10:1 /17/. There is also a big difference in intensity depending on the individual seasons, which in turn have a vastly varying influence on the behaviour and the occurrences of illnesses in humans /26/. In the summer months the occurring signal type I has the highest intensity as a statistical mean value and it correlates *indirectly* with the mortality rate of humans, which in Europe is the lowest in August [according to /26/ a maximum calcium level in the blood is reached in this month] and at clearly the highest in February to March [overall mortality rate is 30-40% higher in winter than in summer; besides viral, also bacterial diseases increase; it is a phase of lowered immunity] /26/.

The signal type II of the natural electro magnetic signals is connected to the frequency area of the delta rhythm in an EEG and shows, localised, mostly strong weather disturbances. As opposed to signal type I it therefore symbolizes "the counterpole, the disturbed, the restless, the abnormal, the unbalanced", see /17/.

Besides, this so-called ELF [extremely low frequencies] range (approx. 1...10kHz), correlates to the steering of muscle reactions as well as to the biochemical reactions occurring in the cell area /12, 20/. It is reported in /20/ that the optimum frequency [resonance frequency] for the membranes of erythrocytes is 1kHz, if the erythrocytes are exposed to oscillating electric fields. In the case of sodium channels, the optimum effect happens at 200Hz. These processes show a higher frequented spectrum than the EEG signals and happen faster /12/. In regard to their signal informative content the VLF atmospheric, triggered by lightning, show exactly the characteristics, which processes like this have in the organism/17/.

It can be summarised that the frequency range of up to a maximum of 10kHz dominates the steering and regulating processes in biological systems. Therefore *Konig* /17/ reaches the conclusion that it is probable that the development of life as such was influenced and determined by the environmental, low frequency, electromagnetic component of the atmosphere.

If the results of 24-hour blood pressure measurements are compared with the daily course of the Schumann-resonance-signals, it can be seen in **Graphic 1** that they correspond in their principal course. It is also known that weather changes and bad weather and especially at night, is when the Schumann-resonances are very damped. It often leads to cardiovascular problems, eg. in patients with heart disorders. Also while patients with lung diseases manage sufficient ventilation during the day, at night they often experience a pronounced hypercapnia and hypoxia, due to the sleep-induced changes in respiratory regulation. If the disease deteriorates, this will also be experienced during the day.



Graphic 1:

a.) Hourly mean value of the systolic and diastolic blood pressure PD, PD in 111 normal trial participants,

b.) the corresponding blood pressure values in 109 patients with essential hypertonia

[a.) and b.) according to *Baumgart P. and K.H. Rahn: Increase in blood pressure in the morning: before or after waking up? Klin. Wochenschr. (1990) 68, 320-323]*

c.) Daily courses for the Schumann-resonance-signals [see /17/].

In Graphic 1 the statistical dependencies [correlations] between blood pressure and the intensity of Schumann-resonance-signals is determined. The following correlation factor **r** is obtained:

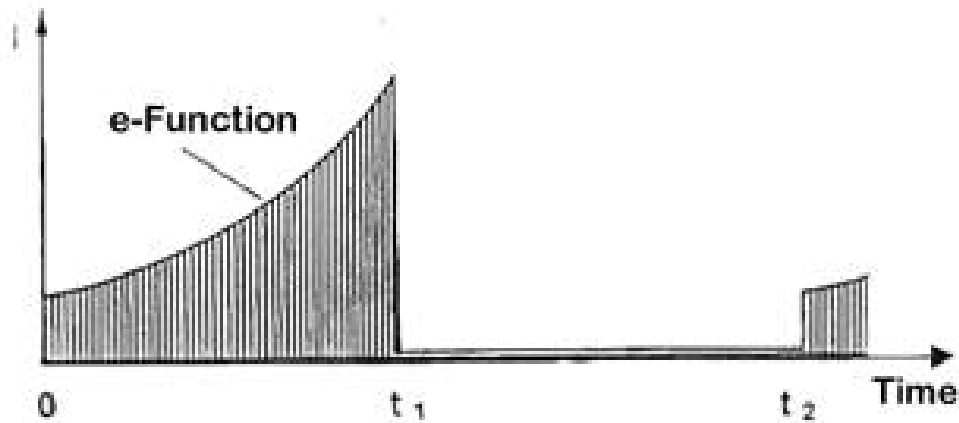
- The **yearly mean value** in patients with essential hypertonia is **r=57%**, in normal trial participants only **r=43%**.
- In **June/July** in patients with essential hypertonia **r=49%**, in normal trial participants only **r=34%**.
- In **December/January** in patients with essential hypertonia **r=66%**, in normal trial participants **r=55%**.

This also shows in a quantitative way that in patients with essential hypertonia there is a higher correlation between the systolic blood pressure rates and the intensity of natural electromagnetic fields in our environment than in normal trial participants.

If certain biological processes are caused by natural electromagnetic fields, it has to be largely possible to imitate nature with special fields and, if a corresponding deficit exists, to treat humans and animals. In accordance with this the following important hypotheses, which were established by **/ti/ 13, 14/** and **Fink /5/** and proven eg. with the pharmaco-EEG /12/, are to be assessed,

- **the same EEG changes lead to the same therapeutic effects or**
- **the same therapeutic effects correlate with the same EEG changes.**

This is exactly the task for the inventors of the Quantronic therapy device Quantronic Resonance System QRS /6, 7, 27, 28, 29/: **to normalise or change the body's own weakened electromagnetic fields with special external ones, as mentioned above /29/**. To realise this objective the magnetic field in its *form* and *temporal sequence*, that is in the *amplitude* as well as the *frequencies* contained in the signal, were specially shaped, as seen in **graphic 2** and explained below /7, 28, 29/.

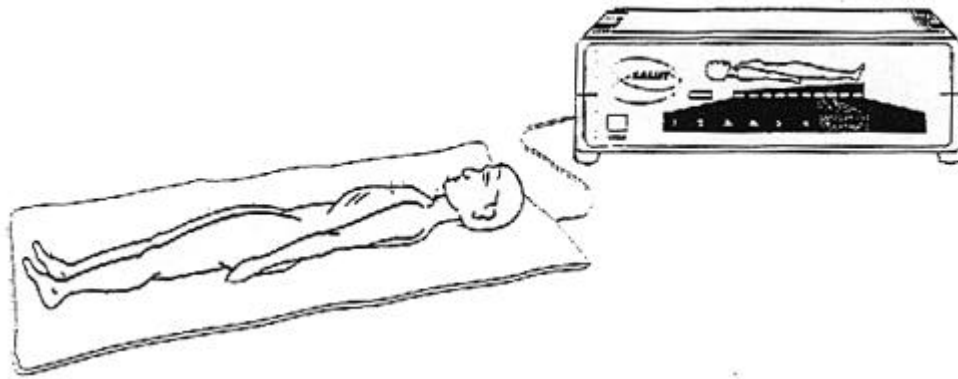


Graphic 2: QRS magnetic field impulse sequence

The base current impulse of such an optimised QRS field lasts $t_1 \sim 2\text{ms}$ and consists of an overlapping of the rectangular current and an, according to an e-function, increasing current, followed by a pause in the pulse. At the point in time of $t_2 \sim 5\text{ms}$ the pulse repeats itself, resulting in a base frequency of approx. 200Hz. If such a signal is analysed in terms of its frequency, so-called upper oscillations of a multiple of 200Hz present themselves, that is (approx.) 400, 600, 800Hz. With this the requirements, in terms of frequency, for ion transport are met. In addition its effect, according to /28/, is increased through the selection of the exponential function (e-function) with the base current impulse. By stringing together 4 base current impulses with subsequent pauses into a pulse packet (duration approx. $t_3 \sim 46\text{ms}$ or repeated frequency approx. 22Hz), as well as thus based further pulse packet cycles a frequency component is achieved, which correlates to the ones of an EEG and, which together with the higher frequented components have been proven to be therapeutically effective /7, 10, 16, 18, 29, 30/.

While WHO (world health organisation) rules allow a maximum of 100uT (microtesla) magnetic field strength at 50Hz, the special temporal (in terms of frequencies) and amplitude form of the QRS magnetic field reaches a **maximum of 30uT field strength** on the highest level 10 and is obviously sufficient for therapy. The minimum field strength to be selected is 1,5uT on level 1. The **therapy duration** for general treatment, due to medical evaluation results, is 8 minutes /7, 29/, which can be individually shortened, but also lengthened. This value corresponds to the one after a sublingual dose of glyceryl trinitrate, where the maximum effect lies between the 3rd and 8th minute (Grohmann, G., M. Krauss, G. Pohlmann and H. R. Figulla: Non-invasive determination of cardiovascular parameters before and after a dose of glyceryl trinitrate in patients suffering from chronic ischaemic heart disease. Not yet published manuscript).

Graphic 3 shows the QRS magnetic field therapy system, which is based on this impulse sequence. Through a control unit, a measured, weak, in a certain frequency rhythm changing (“pulsating”) magnetic field is produced in the therapy mat, which is almost analogous to the processes of wave distribution in the ionosphere as well as magnetic field oscillations on earth. While a patient is lying on this “energy field applicator therapy mat” the field affects the body and influences biological structures /7, 29/, especially cells and tissue and it improves the energy balance. This has, according to /29/, effects on cardiovascular function, the metabolism and immunity, as shown later.



Graphic 3: QRS magnetic field therapy system
(Magnovit International, Produktions und Handels AG)

The consequence of the changes of the electromagnetic QRS field on the entire cardiovascular system, especially the nervous system, muscle sections, the blood vessels or their most inner layer, the intima with the one-layered endothelium, is that tensions are induced, micro alternating currents (whirl currents) are formed, which are controllable through the pulsating blood stream or through forces that are caused by the QRS magnetic field onto the endothelium, as well as onto moved charges (ion transport). Detailed illustrations of these processes can be found in works by *Warnke /29/* and *Marino /20/* (the latter specifically details the ion stream through stimulated membranes).

It has been observed that with the simulation of fields /6,17,27,28,29/, the regulating effect of natural electromagnetic fields on humans is not achieved or disturbed by wrongly fitted external electromagnetic fields, that the way to react to such fields depends not only on the amount of electromagnetic energy, which is absorbed by the tissue, but especially on the modulation and temporal parameters of these fields. Also, according to /17/ and the results of clinical evaluation, the strength of a certain reaction is often not in proportion to the intensity of the affecting field strength, but in various cases it even decreases with rising intensity. This has also been observed by determination of dosage-effect correlations by Pharmaka, deduced from Pharmako EEG /12/.

In summary the electromagnetic field produces amongst others:

a.) In the vascular endothelium occurs the control of the synthesis of **nitrogen monoxide (NO)** and **prostacyclin** as vasodilators. Nitrogen monoxide is produced by the endothelium cells already in a resting state, as *Kelm /15/* writes, and is a major factor in the regulating of the vessel tonus, as well as the blood flow and –pressure. On the other hand various diseases of the cardiovascular system in its early stages damage the vascular endothelium and the protective effect of NO as a vasodilator and thrombocyte inhibiting agent is lost, see /15,22/. Generally the following processes are activated by the **NO-system** /9, 11, 15, 16, 22, 24, 29/:

- The vascular endothelium produces nitrogen monoxide; there is a high probability that it is the most important endogenous transmitter of **vasodilatation**. In biological liquids, NO reacts within 20 to 40s with O₂ and water to form a mixture of nitrite (NO₂⁻) and nitrate (NO₃⁻), which is biologically approximately 1000 times less

effective than NO, therefore this oxidation can be labelled an “*inactivating mechanism for NO*”. Thereby NO relaxes not only the blood vessels, it also inhibits the thrombocyte aggregation and –adhesion, reduces the adhesion of leucocytes onto the vascular walls and limits the proliferation of smooth vascular muscle cells. Therefore **nitrogen monoxide** is called a **protective principle in the vascular system**.

- In the central nervous system, in the peripheral nervous system and in the intestinal nervous system numerous **NO producing neurones** can be found as well. In the peripheral nervous system NO works as an **(atypical) neuro-transmitter**.
- Likewise **immunocytes** can produce **NO**. In /22/ it is pointed out that macrophages and granulocytes with bacterial lypopolysaccarydes or cytokines can be stimulated into the expression of the inducible NO-synthase II.

b.) To activate the substances described in a.), an intercellular increase in the calcium level occurs, which can be achieved by a calcium in-stream into the cell and/or by release from storage in the cells. A not yet published work, commissioned by MAGNOVIT INTERNATIONAL, productions und Handels AG. (Prof. Dr. Fischer AG, D-64331 Weiterstadt) and executed by A. Varga et al (medical University Szeged/Hungary, Institute for Pharmaceutical Analysis) determined, after 2 weeks of daily 2-hour full body QRS treatment, in the blood of turkeys (comparable to human blood), the following dominating free-moving changes in ion concentration as a mean value (40 treated animals, 40 control animals, measured with the atom absorption measuring device Perkin-Elmer AAS 4100):

	Ca⁺⁺ [mg/l]	Na⁺ [mg/l]
Treated animals	123	3815
Control animals	111	3593
Difference	12	222
Difference in [%]	9.8	5.8

Theoretical foundations for the biological effect of electric and magnetic fields are comprehensively illustrated in /1, 2, 3, 7, 17, 20, 23, 29/, while /8/ reports about one of the pioneers of magnetic field therapy in the 18th and 19th centuries: *F. A. Mesmer*. Specific clinical therapy results with electromagnetic fields, especially QRS can be found in /4, 7, 8, 16, 18, 19, 21, 25, 30/ amongst others.

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