

**28th ANNUAL INTERNATIONAL SYMPOSIUM  
on Man and His Environment in Health and Disease**

**“The Chemical Mechanisms Leading to EMF Sensitivity”**

June 3-6, 2010 Dallas, Texas

**ABSTRACT**

Cyril W. Smith, Ph.D.

**“Chemical Frequency Signatures, Frequencies and Fractals”**

**The Nature of Chemical Frequency Signatures**

I did a lot of work on the electrical insulation and breakdown properties of n-hexane. This is a good material with which to investigate chemical frequency signatures because its only spectrum is in the far—infra-red (FIR.) which it is used a solvent in spectroscopy. Any interaction with water must also be in this part of the electro magnetic spectrum. When it is dry there are no chemical frequency signatures. These appear at 14 ppm concentration of trace water. There is good agreement between the with ELF measurements multiplied by fractal ratio and the FIR spectra.

Water resonances can be similarly interpreted. However, there are many hundreds of lines in the FIR spectra of water so it was necessary to make the assumption that only those lines which could become sufficiently coherent for use in a water vapour laser were of significance. This gave a set of resonances which could be confirmed by measurement. When a frequency is imprinted into water, these resonances develop side-bands at that frequency and at other resonances these are fractally proportionate.

The Physics of “Water Memory” is based on the coherent precession protons in a domain of critical size such that they generate that magnetic field which satisfies the magnetic resonance condition. This is independent of the frequency of precession and the process is able to record any frequency. Living systems make use of the entire electromagnetic spectrum from circadian rhythms at micro-Hertz through all the technological frequencies to the FIR and thence to frequencies associated with chemical reactions.

The frequency information is in the A-field component of an electromagnetic field. The A-field (magnetic vector potential) is in the direction of the current. It is around a toroid. It arises as a mathematical necessity because the B-field always occurs in closed loops. The A-field has quantum effects in that it can affect the phase of the wave function describing a system.

The frequency of an A-field can be imprinted into water if the water is succussed by mechanical shock. The change of momentum is the effective physical quantity. The application of a B-field strong enough to overcome thermal dissipation in a coherence domain will potentise. The combination of these two field components near power lines will potentise all surrounding environmental frequencies into water or a living system. A train of 7-unidirectional voltage pulses applied in the presence of a frequency will potentise (binary 000-III). This can happen near a calculator, computer or a mobile or even a train of nerve impulses. The voltage pulses on dial-up are sufficient for this and can imprint directly into the head frequencies which take some time to disperse. With classical Hahnemann potentisation, seven rapid swings of the arm holding the vial through the geomagnetic field will generate sufficient in the way of voltage pulses for potentisation without any impact. It is also possible to potentise using a chemical frequency signature. All this shows how resilient a living system must be to the many irrelevant frequency imprints it experiences.

Potency or a water frequency imprint is “erased” if the geomagnetic field is shielded by placing it in a closed steel box. Erasure occurs at about 1% of the normal geomagnetic field so most steels except stainless steels will do this. About 380 nT is the critical magnetic field for which the magnetic energy in the volume of a coherence domain becomes less than the thermal energy (kT). This gives the size of the domain of coherence for water memory as a sphere of diameter 53  $\mu\text{m}$  at ambient temperature; there is a slight temperature dependence...

In Classical Chinese Acupuncture, 12 meridians are considered to form 3 sets of closed paths along which a vital energy (Qi) is supposed to flow. In these, the Yin and Yang Organ frequencies will combine to a frequency given by their geometric means. When a pair of tubes of water imprinted with 2-Yin and 2-Yang frequencies respectively is placed close together - all frequencies disappear! Attempting to imprint all 4 frequencies into a single tube of water with 3 frequencies already present, the succussion to imprint the 4th frequency results in complete erasure of all frequencies. This gives living systems an error detection mechanism for control of homeostasis for so long as the four meridians are in a healthy condition, the frequencies around each course will be erased. This is an application of the theory of & 'nilpotent' operation (Daiz and Rowlands, 2004). Measurement of a water imprint in a Caduceus coil gives that 'nilpotency' frequency which erases the imprint. Nil-Potency provides living systems with a tool for erasing unwanted frequencies

#### An Objective Measurement for Frequency Imprinting

Living systems can in principle identify chemicals and isotopes by frequency. Atomic isotopes can be identified by vibrational frequencies. Alfred Partheil (1861-1909) a Professor of Pharmacy at Konigsberg, studied a relationship between musical notes and the Periodic Table finding the relationship acoustic frequency = atomic weight x 6. I took 24 chemical elements which happened to be available to me and measured them placed between headphones connected to an oscillator. They all gave a measurable resonance at the audio frequency predicted by Partheil. Combining the Rydberg Constant of spectroscopy theory for hydrogen and the fractal ratio for ELF to optical frequencies gave a factor 16.7 for hydrogen - in close agreement with Partheil's factor 16.

For the measurement of frequency imprints, I developed the dowsing response method out of sheer necessity for dealing with patients so electromagnetic frequency sensitive that they could not tolerate an oscillator being switched on when they were anywhere in the building. It is clinically very effective and useful. It can cover a frequency range from 11Hz to 0Hz. The Nerve Degeneration Meridian which is Voll's summation point for the entire autonomic nervous system has a resonance at 550  $\mu$ Hz Patients sensitive to microwave cookers and WiFi need to be tested at 2.45 GHz. Measurement with the dowsing response involves a reaction to the phase changes produced by a resonance between left & right hand and arm Pericardium and Heart meridians.

In general, the frequencies measured from patients and chemical frequency signatures usually alternate between being stimulatory and depressive of biological activity. The reference for this seems to be the A-field component of the Earth's magnetic field which is directed East-West.

Over many years, I have tried to devise instrumentation for this measurement. With two electrodes immersed in frequency imprinted water a DC connection to low-noise high-gain amplifier is necessary to give an asymmetry. The measured signals are very small (nV) and close to noise level. Optical measurements in water similarly give small signals. These techniques do provide a method for validating the dowsing measurement over a limited range of frequency.

The physics underlying a method in which a single electrode is immersed in the frequency imprinted water involves the alternating A-field ( $d\mathbf{A}/dt = -\mathbf{E}$ ) which generates an alternating electric field E proportional to the frequency and can give a voltage ( $\sim$  mV) proportional to the coherence length. Electroacupuncture apparatus has been using this since its inception without knowing why.

Copying with Toroids: because the information is in the A-fields generated by the coherently precessing protons in a Water memory domain, two ferrite rings can be arranged to couple the A-field of a potency or imprint into 'erased' water. Because of quantum coupling, any of the 4 items may be succussed. This means that a potency or allergen dilution can be imprinted directly into a patient and "without having to succuss the patient!"

A single ring makes an inverted copy, applicable for allergens without potentiation.

Frequency entrainment by cells cultured with environmental organo-chemicals has been demonstrated at EHC-Dallas. The effects were modified normal cell cycle profile for T-lymphocytes, interruption of the ordered and orderly progression of the cell cycle, destruction of specific proteins and enzymes, prevention of apoptosis leading to wrong translations from the DNA and wrong signals for control of cell progression. The immune system would be compromised leading to multiple manifestations including cancer. The frequencies of the challenged T-lymphocytes

became entrained by the frequencies of the chemicals and were no longer free to fluctuate according to metabolic demands.

#### Fractality of Frequencies in Coherent Systems

The presentation continues with a brief discussion of the relations between coherent frequencies. Coherence relates to the constancy of frequency and phase between two or more oscillators which may be represented by molecules, cells, tissues, meridians or an entire living system and is a fundamental property of a quantum field.

The phases of their individual quantum fields and particle numbers are related by Heisenberg Uncertainty Principle. Within a coherent system, the range of the coherence (*coherence length*) becomes the constant quantity instead of the velocity. This makes frequency proportional to velocity apparently without restriction so long as one remains within the coherence length. There can be many velocities each with frequencies in proportion. Because these frequencies no longer have absolute values, the system has become *fractal in frequency*.

Consequently, identical effects can be induced from frequencies in many different parts of the electromagnetic spectrum. It is this which links effects of frequencies characteristic of chemical, technical and biological systems and why environmental frequencies can mimic chemical exposure for hypersensitive patients. For a wave - its constant velocity of propagation equals its frequency multiplied by its wavelength.

**A duality exists between chemical structure and frequency patterns - otherwise chemical analysis by spectroscopy would be impossible. Within coherent system coherence length becomes the constant parameter and frequency becomes proportional to velocity of coherence propagation with no characteristic frequency scale. This implies a *fractal system* with self-similarity, scale invariance and power law. This gives rise to the observed RF and ELF frequency bands coupled to chemical and technological frequencies with implications for the ANS.**

#### How Frequency and Chemistry Together Affect Man and His Environment in Health and Disease.

The effects of frequency and chemistry together on man and his environment in health and disease are best considered in the context of the acupuncture meridians which reflect the status of the various body systems.

The beginnings of acupuncture meridians could be coherence between embryonic ectoderm and endoderm cells with this persisting as a link throughout the development of the organism; the ectoderm couples to the acupuncture points, the endoderm and mesoderm to the target organs. The Yuan Source Points or Luo Connecting Points are common points for the frequencies of both meridians.

Each acupuncture meridian and chakra point has a characteristic pair of frequencies. For convenience, these are listed in the appended table. Where a meridian has a link to the ANS there is an additional frequency: ~ 3 mHz for sympathetic ANS ~ 0.3 Hz for parasympathetic ANS.

The relationship between the acupuncture meridians and the autonomic nervous system (ANS) comes from the work of Dr. Reinholdt Voll. His work is cited in English by Kenyon (1983). Voll identifies a complete system of acupuncture points which indicate the functioning of both branches of the autonomic nervous system.

Voll regards the 'Nerve Degeneration' meridian point ND1a as the Summation Point for entire ANS. In measurements using electro-acupuncture apparatus, stress is indicated by a percentage change; the frequencies measured at this and other related Voll points show similar changes.

In 1983, we showed that living systems can respond to magnetic resonance (NMR) conditions at geomagnetic field strengths. This allowed speculation that a frequency might be retained in water if magnetic resonance precession of the protons could be synchronised to any applied frequency and if these protons can generate an internal magnetic field which exactly satisfies the proton NMR conditions locally within their coherence domain. This condition turns out to be independent of the frequency to be remembered and requires  $6.3 \times 10^2$  protons to process coherently. Such a process should be stable unless the domain is thermally broken up by removing the stabilizing geomagnetic field. This is what happens at "erasure" and at ambient temperature this requires a coherence domain of 53  $\mu\text{m}$  in diameter.

There are chemical pH changes on frequency imprinting. An increase in pH corresponds to the removal of H<sup>+</sup> ions and the generation of an equal number of OH ions.

A solution of NaOH at pH 8.01 increased to pH 8.05 at frequency saturation with 377 separate imprints. This pH change involves  $3.2 \times 10^{12}$  hydrogen and hydroxyl ions. Thus, a total of  $6.4 \times 10^{12}$  protons are tied up per frequency imprint. The critical magnetic field for the memory erasure condition requires  $6.3 \times 10^{12}$  protons to become coherent for local proton NMR conditions to be satisfied.

The normal condition is for the acupuncture meridian frequencies to fluctuate in a quasi-periodic manner over about a one hour period. If the meridian synchronized to a stimulatory phase of frequency, its fluctuation rate increases ten-fold. If it is synchronized to a depressive phase frequency, all fluctuations cease, this is analogous to the effect of a toxic chemical.

## Conclusions

The first body system to become compromised in chemical and electrical hypersensitivities is the ANS. Just a few of the many factors which can affect the ANS have been listed. In health, the body will be aware but not incapacitated by them. Voll's connections between the ANS and the acupuncture system have been used to investigate the frequencies involved in these connections. All cells can emit a chemical in response to an electrical signal and an electrical signal in response to a chemical stimulus. Regulatory systems use both frequency and chemical void feedback instability. If a reference frequency becomes locked to a frequency or a chemical frequency signature, it cannot respond to metabolic demands and the ANS feedback path will go open-circuit.

Coherent proton precession accounts for water memory and pH changes. Frequency coherence gives rise to frequencies which are fractals linking the chemical to the technical to the biological. Frequency signatures of chemicals arise from transitions in the FIR between rotational water lines and the chemical with trace water. Transitions between FIR rotational water lines give a resonance one of which is the reference frequency for the upper fractal of the Heart acupuncture meridian and chakra and explains their precision.

Frequency patterns develop from the chemical signature of a "mother tincture" to a homeopathic potency which can be reproduced from a frequency pattern with no chemical precursor. The physics of frequency resonance measurement involves the electric field from an alternating A-field on a single wire giving a measureable voltage. Living systems can become synchronised to environmental frequencies and to frequency signatures of chemicals. Endogenous frequencies can fall below noise level.

## References

- Arani R. Bono I. Del Giudice E. and Preparata G. (1995) QED Coherence and the Thermodynamics of Water. *Intl. J. of Mod. Phys. B*, 9, pp. 1833-1841.
- Diaz, B. and Rowlands, p. (2004) A Computational Path to the Nilpotent Dirac Equation, *hit. J. Comp. Ant. Syst.* 16, pp.203-IS.
- Frohlich, H. (1983) Coherence in Biology, in 'Coherent Excitations in Biological Systems', Frohlich, H. and Kremer, F. (Editors). Berlin: Springer-Verlag pp 1-5.
- Frohlich, H. (1988) Theoretical Physics and Biology, in Frohlich, H. (Editor) "Biological Coherence and Response to External Stimuli". Berlin: Springer-Verlag pp 1-24.
- Jafary-Asl AH, Solanki SN, Aarholt E, Smith CW (1983) Dielectric measurements on live biological materials under magnetic resonance conditions. *J. Biol. Phys.* 11, pp. 15-22.
- Kenyon IN. (1983) "Modern Techniques of Acupuncture" Vol. 3, Chapter 11 — Disordered Autonomic Steering. Wellingborough: Thorsons. German source: Friedrich Bechtloff, "Elektroakupunktur nach Voll - Eine Darstellung in Bereichen", Uelzen (1991), p.79.
- Lubec O, Wolf C, Bartosch B. (1989) Aminoacid Isomerisation and Microwave Exposure. *The Lancet* (December 9 1989)pp. 1392-1393.

- Marcus P, Schempp W. (1998) The Brain as a Conscious System. *ha. J. General Systems*. 27(1-3) pp. 231-248.
- Partheil A. (1903) On the Numerical Relationship of Atomic Weights. *Her. Deut. Pharm. Ges.* 13, paper 466. (English translation at: <http://www.biowaves.com/Research/PartheilPartheilo I .php>).
- Rea WJ, Pan Y, Fenyves EJ, Sujisawa I, Suyama H, Samadi N, and Ross GH. "Electromagnetic Field Sensitivity", *Journal of Bioelectricity* 10(1&2): 241-256(1991).
- Rowlands P. (2007) *Zero to Infinity: The Foundations of Physics*. Series on Knots and Everything 41. Singapore: World Scientific.
- Smith C.W. (1998) Is a living system a macroscopic quantum system? *Frontier Perspectives*, 70), 9-15, (Temple University, Philadelphia, audio tape of 1997 lecture from Frontier Sciences Department). ISSN: 1062-4767.
- Smith CW. (2005) Watergates — Logic Operations in Water, 7th• International Conference on "Computing Anticipatory Systems", HEC Liege, Belgium, 8 - 13 August 2005. *CASYS'05 Abstracts - Symposium 10*, p. 9.
- Smith CW. (2007) Water — Nanoscale to Microscale. 8th• Intl. Conf. on Computing Anticipatory Systems, HEC-ULg, Liege, Belgium, 6-11 August 2007. Abstract: *CASYS'07 Symposium 6* p. 23.
- Smith CW (2008) Frohlich 's Interpretation of Biology through Theoretical Physics. In: Hyland GJ and Rowlands P (Eds.) *Herbert Frohlich FRS: A physicist ahead of his time*. Liverpool: University of Liverpool, 2 edition, pp 107-154.
- Smith CW. (2008) Chapters on Theory of Homeopathy January-July 2008 at [www.hpathy.com](http://www.hpathy.com)
- Smith CW. (2009a) Coherent Frequencies, Consciousness and the Laws of Life. 9th Intl. Conf. on Computing Anticipatory Systems, HEC-IJLg, Liege, Belgium, 3-8 August 2009. Abstract: *CASYS'09 Symposium 10* p17.
- Smith CW (2009b) Can Homeopathy Ameliorate Ongoing Sickness? *The Journal of Alternative and Complementary Medicine* (May 2009), Vol. 15, No. 5:465-467.

**Table**  
**Acupuncture Points and Nominal Values for their Endogenous Frequencies**

<b>‘Classical’ Acupuncture Meridians</b>	<b>Point Measured</b>	<b>Low Band Frequency</b>	<b>High Band Frequency</b>
		Hz	MHz
Lung	Lu1	0.48	24
Large Intestine	LI1	0.055	2.7
Stomach	St45 / right	0.044	22
Stomach	St45 / left	0.44	2.2
Spleen	Pn1	0.055	2.7
Heart	He9	7.8	384
Small Intestine	SI1	0.025	1.2
Urinary Bladder	BL67	5.5	270
Kidney	Ki1	0.00095	0.047
Pericardium	Pe9	0.25	13
Sanjiao (TW)	TW1	6000	300,000
Gall Bladder	GB44	0.05	2.46
Liver	Liv1	4.8	240
Du Mai (GV)	GV14	4.3	149
Ren Mai (CV)	Ren24	14	730
<b>‘Extra’ Points</b>			
Anmian I & II	Ex 8 & 9	3,000	
<b>Extra ‘Ting’ Points</b>			
Lymphatics	Ly1	0.06	2.95
Nerve Degeneration	ND1	0.00055	0.027
Allergy	AD1	2	98.4
Organ Degeneration	Or1	0.078	3.85
Fatty Degeneration	FatD1	0.74	36
Skin Degeneration	Sk1	0.0035	0.172
Joint Degeneration	JD1	0.3	148
Fibroid Degeneration	FibD1	800	39,400
Circulation, pericardium	Ci9	0.05	2.46