

Coherence and Quantum Effects in Water and Bio-Systems

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Abstract. By 1974, our measurements on the dielectric properties of moist biological materials, enzymes in particular, gave dielectric constants far greater than that of water and suggested that an enzyme-substrate system had the properties of an amplifier with a gain greater than 10^9 . This work interested Fröhlich and began our long period of cooperation. He suggested the measurement of diamagnetic susceptibility which turned out to be 10^4 times greater than expected but, the enzyme system had to be in an active state. This was interpreted in terms of a coherence analogous to that giving rise to low-temperature superconductivity. Further work found effects corresponding to a Josephson voltage-frequency inter-conversion, magnetic flux quantisation, a sensitivity to nuclear magnetic resonance conditions and evidence for the Aharonov-Bohm effect. A precessing proton or electron generates a local magnetic field proportional to its frequency of precession with the consequence that a stable condition can be satisfied in water for any applied frequency within a coherence domain of a critical dimension. This ‘remembered’ coherent frequency can propagate through liquid water and atmospheric water vapour over its coherence length. It can modulate scattered light and this modulation is retained in light scattered from photographic images even after internet transmission. The frequency information is in the A-field and this can be measured through its electric field $E = -dA/dt$ and the frequency. The A-field affects the phase of a macroscopic quantum system. Coherent frequencies imprinted into water can be arranged to form the three basic logic gates - N, -CN and -CNN implying the possibility of a bio-computer ‘clocked’ by nerve impulses. Frequency imprints in water are non-Abelian. This makes it possible to ‘peel-back’ to the past and anticipate where the present system is heading. For example, the frequency signatures of three nucleotides with no chemicals present can be taken through the frequency signatures of their DNA and RNA to the amino acid and then back again as a reverse transcription. This too can be done with the frequency signature of a bio-system. Rowlands has described a form of expression for the ‘Dirac Equation’ which contains purely physical information so that mathematics becomes an intrinsic part of physical structure. This must equally apply to bio-systems. The equation contains three terms which separately express the “energy”, “momentum” and “mass” in the physical system and these can be expressed in terms of three coherent frequencies. Whence, a set of ‘nil-potent’ frequencies can be found which will erase a set of frequency imprints. All this implies a paradigm change to the concept that, “A coherent frequency can have a biological activity”.