3.9 Infrastructure, Characteristics, Derivation, and Scalar Wave Properties

More details about this chapter's interesting subject are in this section and are also provided in Chap. 6 of this book. The *scalar wave* (SW), however, is a member of the wave family that we are discussing in this chapter; thus, we need to describe it here.

Starting from Faraday's discovery—instead of the formulation of the law of induction according to Maxwell—an extended field theory is derived, which goes beyond Maxwell's theory with the description of potential vortices (noise vortices) and their propagation as a SW, that contains the Maxwell theory as a special case. The new field theory with that does not collide with the textbook opinion but extends it in an essential way with the discovery and addition of potential vortices. Likewise, the theory of objectivity, which follows from the discovery, is compared in the form of a summary with the subjective and the relativistic point of view, and the consequences for variable velocity of propagation of SWs, formed from potential vortices, are discussed.

From Maxwell's field equations only, the well-known transverse or Hertzian can be derived, whereas the calculation of *longitudinal scalar waves (LSW)* give zero as a result. This is a flaw of the field theory because SWs exist for all particle waves (e.g., plasma waves, as photons or neutrino). Starting from Faraday's discovery, instead of the formulation of the law of induction according to Maxwell, an extended field theory is derived that goes beyond Maxwell's theory with the description of potential vortices (e.g., noise vortices) and their propagation as a SW. With that the extension is allowed and does not contradict textbook physics.

It was a transverse wave (TW) for which the electric and the magnetic field pointers oscillate perpendicular to the direction of propagation. This can be seen as the reason that the velocity of propagation is showing itself to be field-independent and constant. It is the speed of light c. With that Hertz had experimentally proved the properties of this wave, previously calculated in a theoretical way by Maxwell, and at the same time proved the correctness of the Maxwellian field theory. The scientists in Europe were just saying to each other "well done!" as completely different words came from a private research laboratory in New York: "Heinrich Hertz is mistaken, it by no means is a transverse wave but a longitudinal wave!"

Besides the mathematical calculation of SWs this section contains a voluminous material collection concerning information about the technical use of SWs, infrastructure, derivation, and properties of such waves. If the useful signal, usually the interfering noise signal, changes places, a separate modulation of frequency and wavelength makes a parallel image transmission possible. It may concern questions of environmental compatibility for the sake of humankind, such as bioresonance among others; harm to humanity (e.g., electro-smog); or even high-energy weapon applications, like in Star Wars—also known as the Strategic Defense Initiative (SDI) [13].

With regard to the environmental compatibility, a decentralized electrical energy technology should be required, which manages without overhead power lines, without combustion, and without radioactive waste. The liberalization of the energy markets will not in any way solve the energy problem; it will only accelerate the way into a dead end. A useful energy source could be represented by space quanta that hits the Earth from the Sun or space. They, however, only are revealed to a measurement technician if they interact. It will be shown that the particles oscillate and an interaction or collection, with the goal of the energy's technical use, is possible only in the case of resonance.

Because these space quanta as oscillating particles have almost no charge and mass averaged over time, they have the ability of penetration, as proved for neutrinos. In the case of the particle radiation discovered 100 years ago by Tesla, it obviously concerns neutrinos. We proceed from the assumption that in the future decentralized neutrino converters will solve the current energy problem. Numerous concepts from nature and engineering—such as on the one hand lightning or photosynthesis and, on the other hand, the railgun or the Tesla converter—are illustrated and can be discussed.

Given all the preceding scenarios, we start the discussion of SWs in this section by asking: What is a *scalar wave* exactly? A SW is just another name for a "longitudinal" wave (LW). The term "scalar" is sometimes used instead because the hypothetical source of these waves is thought to be a "scalar field" of some kind, similar to the Higgs field (i.e., boson), for example.

There is nothing particularly controversial about *longitudinal waves* in general as illustrated in Fig. 3.11. They are a ubiquitous and well-acknowledged phenomenon in nature. Sound waves traveling through the atmosphere (or underwater) are longitudinal, as are plasma waves propagating through space—also known as *Birkeland currents*. Longitudinal waves moving through the Earth's interior are known as *Telluric currents*. They can all be thought of as pressure waves of sorts.

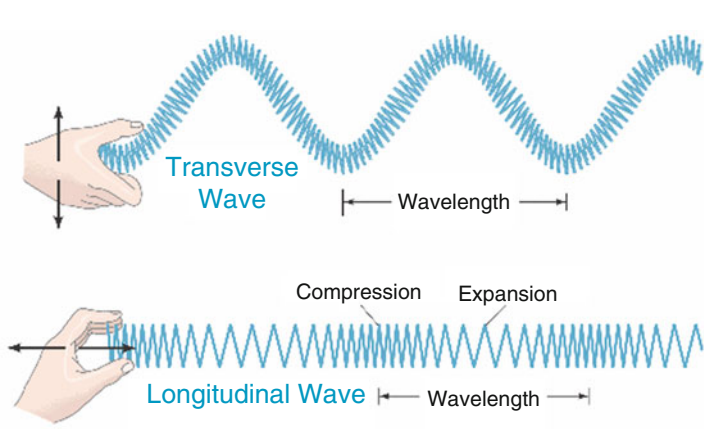

Fig. 3.11 Illustration of transverse versus longitudinal waves

In modern-day electrodynamics (both classical and quantum), *electromagnetic waves(EMW)* traveling in "free space" (e.g., photons in the "vacuum") are generally considered to be a TW. But, this was not always the case. When the preeminent mathematician James Clerk Maxwell first modeled and formalized his unified theory of electromagnetism in the late nineteenth century neither the EM SW or LW nor the EM TW had been experimentally proved, but he had postulated and calculated the existence of both.

After *Heinrich Hertz* demonstrated experimentally the existence of transverse radio waves in 1887, theoreticians (e.g., Heaviside, Gibbs, and others) went about revising Maxwell's original equations (who was now deceased and could not object). They wrote out the SW/LW component from the original equations because they felt the mathematical framework and theory should be made to agree only with experiments. Obviously, the simplified equations worked—they helped make the AC/DC electrical age engineerable. But at what cost?

Soon after Hertz's claim of discovering Maxwell's transverse EMWs, Tesla visited him and personally demonstrated his experimental error. Hertz agreed with Tesla and had planned to withdraw his claim, but varying agendas intervened and set the stage for a major rift in the "accepted" theories that soon became transformed into the fundamental "laws" of the electric science that have held sway in industry and halted academia to the present day (Fig. 3.12).

Then in the 1889 Nikola Tesla—a prolific experimental physicist and originator of the alternating current (AC)—threw a proverbial wrench in the works when he discovered via experimental proof for the elusive electric SW. This seemed to

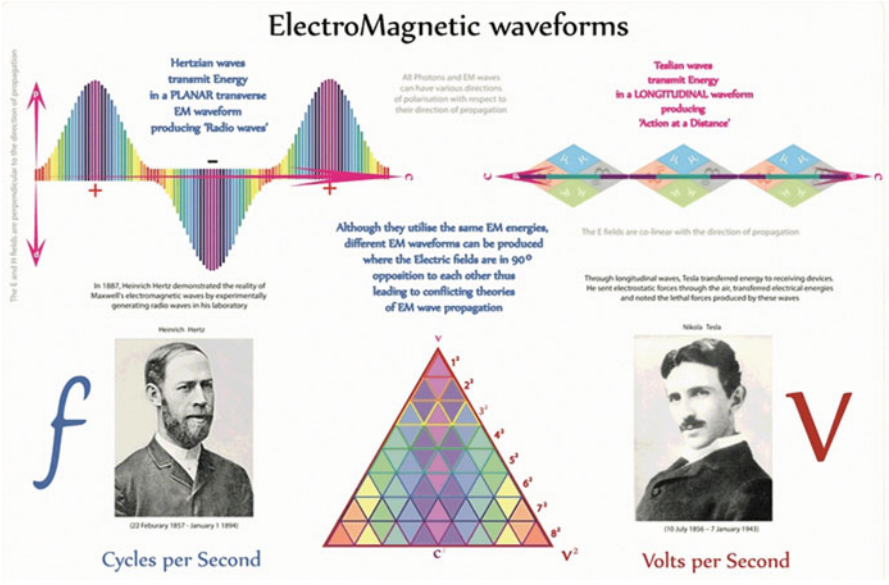

Fig. 3.12 Illustration of an electromagnetic wave

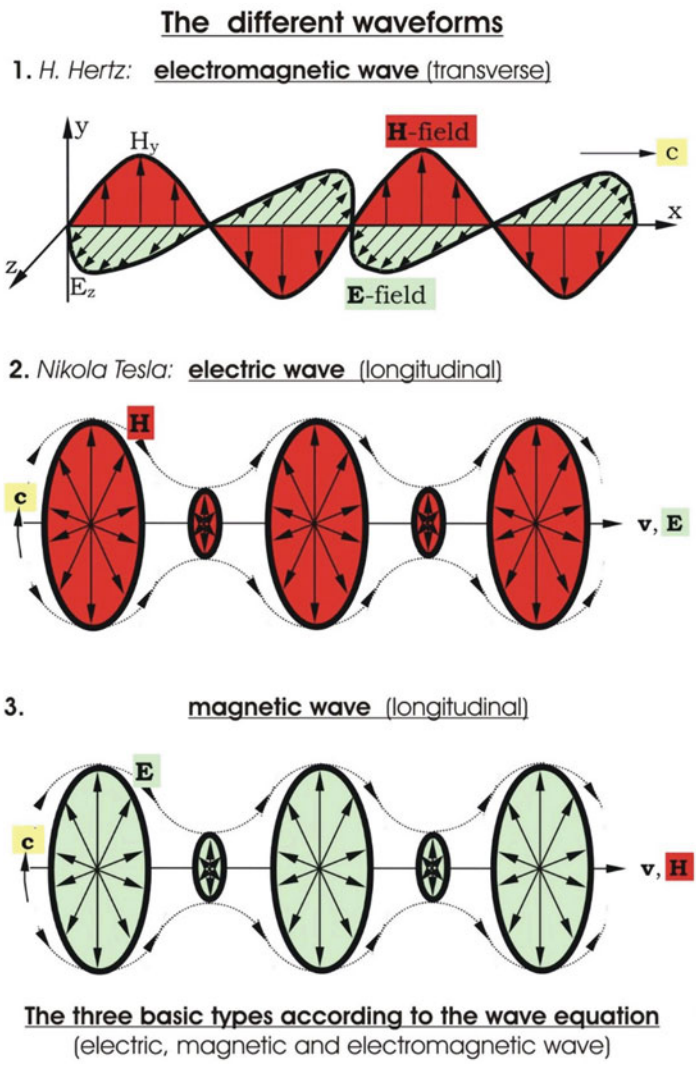

Fig. 3.13 Illustration of various waveforms

suggest that SWs/LWs, as opposed to the *transverse wave*, could propagate as pure electric waves or as pure magnetic waves. Tesla also believed these waves carried a hitherto-unknown form of excess energy he referred to as "radiant." This intriguing and unexpected result was said to have been verified by Lord Kelvin and others soon after (Figs. 3.13 and 3.14).

Instead of merging their experimental results into a unified proof for Maxwell's original equations, however, Tesla, Hertz, and others decided to bicker and squabble over who was more correct. In actuality, they both derived correct results.

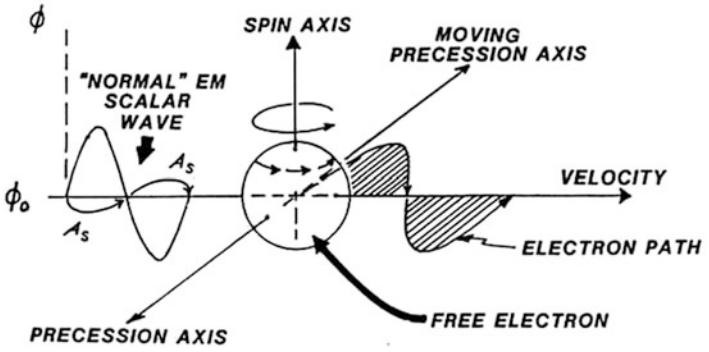

Fig. 3.14 Illustration of electron path and normal EM scalar wave

Nonetheless, because humans (even "rational" scientists) are fallible and prone to fits of vanity and self-aggrandizement, both sides insisted dogmatically that they were right and the others were wrong.

The issue was allegedly settled after the dawn of the twentieth century when:

A) The concept of the mechanical (passive/viscous) Ether was purportedly disproved by Michelson-Morley and replaced by Einstein's Relativistic Space–Time Manifold
B) Detection of SW/LW's proved much more difficult than initially thought (mostly because of the wave's subtle densities, fluctuating frequencies, and orthogonal directional flow). As a result, the truncation of Maxwell's equations was upheld.

Scalar and longitudinal waves in free space, however, are quite real. Besides Tesla, empirical work carried out by electrical engineers (e.g., Eric Dollard, Konstantin Meyl, Thomas Imlauer, and Jean-Louis Naudin, to name only some) clearly have demonstrated their existence experimentally. These waves seem able to exceed the speed of light, pass through EM shielding, also known as *Faraday cages*, and produce overunity effects—that is, more energy out than in. They seem to propagate in a yet unacknowledged counterspatial dimension, also known as hyper-space, pre-space, false-vacuum, aether, implicit order, and so on (Fig. 3.15).

Because the concept of an all-pervasive material ether was discarded by most scientists, the thought of vortex-like electric and/or magnetic waves existing in free space, without the support of a viscous medium, was thought to be impossible. Later experiments carried out by Dayton Miller, Paul Sagnac, E. W. Silvertooth, and others, however, have contradicted the findings of Michelson and Morley. More recently Italian mathematician-physicist Daniele Funaro, American physicist-systems theorist Paul LaViolette, and British physicist Harold Aspden have all conceived of (and mathematically formulated) models for a free space ether that is dynamic, fluctuating, self-organizing, and allows for the formation and propagation of SWs/LWs.

A harmonic set of bidirectional longitudinal EMW pairs in 3-space is depicted in Fig. 3.16. Unseen here is the time-polarized EMW in the time domain, which reacts with the source charge to produce the 2-space bi-wave potential. The potential, as

Fig. 3.15 Imaginary hyperspace

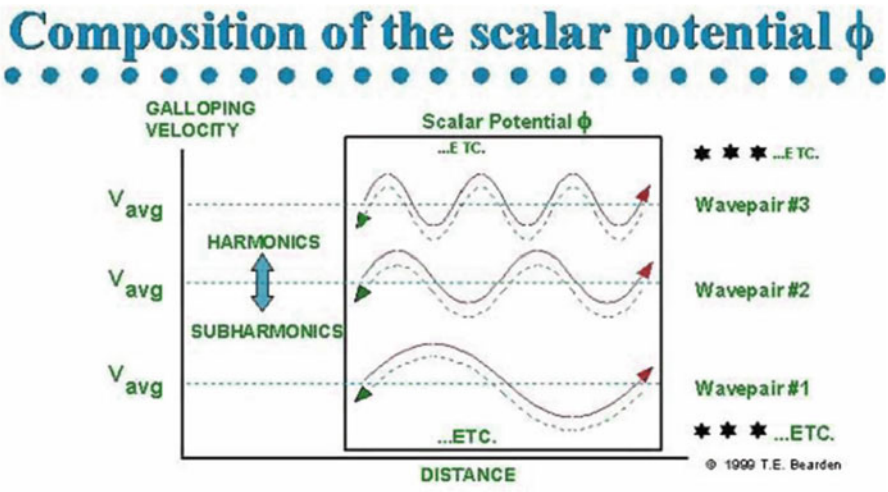

Fig. 3.16 A harmonic set of bidirectional longitudinal EMW pairs in 3-space

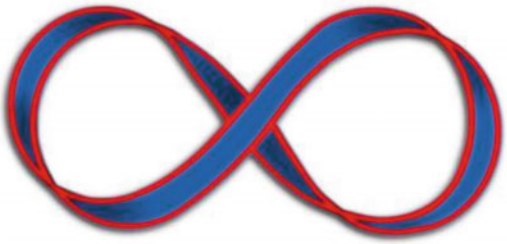

Fig. 3.17 Shape of a Möbius supercoils

observed or detected, is a harmonic set of bidirectional LWs in 3-space. That is, this potential is the "effect" of transduction of an incoming time-polarized EMW interacting with the source charge.

Therefore, defining the characteristics of SWs, we can state that SWs are produced when two EMWs of the same frequency are exactly out of phase (opposite to each other), and the amplitudes subtract and cancel or destroy each other. The result is not exactly an annihilation of magnetic fields but a transformation of energy back into a SW. This scalar field has reverted to a vacuum state of potentiality. Scalar waves can be created by wrapping electrical wires around a figure eight in the shape of a *Möbius coil*, as illustrated in Fig. 3.17. When electrical current flows through the wires in opposite directions, the opposing EM fields from the two wires cancel each other and create a SW. As an example of what we just stated, within our day-to-day life there is a DNA antenna in our body and cells.

The DNA antenna in our cells' energy production centers (*mitochondria*) assumes the shape of what is called a supercoil. Supercoil DNA look like a series of Möbius coils. These Möbius supercoil DNA are hypothetically able to generate scalar waves. Most cells in the body contain thousands of these Möbius supercoils, which are generating scalar waves throughout the cell and throughout the body.

The standard definition of SWs is that they are created by a pair of identical waves (usually called the wave and its anti-wave) that are in phase spatially (space), but out of phase temporally (time). That is, the two waves are physically identical, but 180° out of phase in terms of time. They even look different—like an infinitely projected Möbius pattern on an axis. The DNA antenna in our cells' energy production centers (mitochondria) assumes the shape of what is called a supercoil. Scalar energy can regenerate and repair itself indefinitely. This also has important implications for the body's DNA synthesis (Fig. 3.18).

Mitochondrial DNA is only a small portion of the DNA in a cell; most of it can be found in the cell nucleus. In most species on Earth, including human beings, mitochondrial DNA is inherited solely from the mother. Mitochondria have their own genetic material, and the mechanism to manufacture their own RNAs and new proteins. This process is called *protein biosynthesis*, which refers to the process whereby biological cells generate new sets of proteins (Fig. 3.19).

A SW also is called a *standing wave* (see Sect. 3.3); it is a pattern of moving energy that stays in one place. We generally think of waves as moving through space as well as vibrating "up and down" but a SW is stationary or standing. Scalar waves

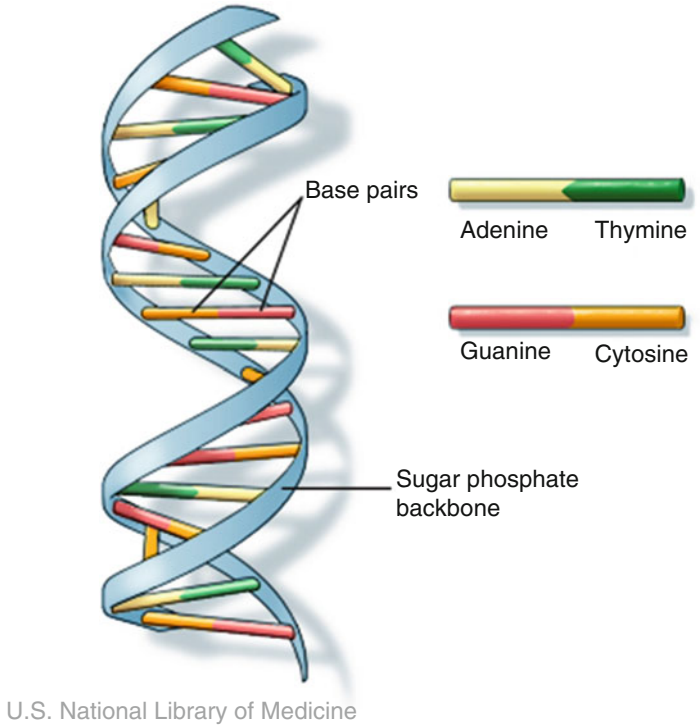

Fig. 3.18 Illustration of DNA's structure

Fig. 3.19 Image of mitochondrial DNA

are used by controllers to generate interference or feedback systems or to stimulate the nervous system of bodies to repeatedly loop in a certain manner; if you can visualize the kind of waveform described, you can probably imagine it.

In water resonance the DNA is sending a LW that propagates in the direction of the magnetic field vector. The computed frequencies from the structure of the DNA agree with those of biophoton radiation as predicted. The optimization of efficiency by minimizing the conduction losses leads to the double-helix structure of DNA. The vortex model of the magnetic SW not only covers many observed structures within the nucleus from perfect, but also introduces the hyperboloid channels in the matrix—if two cells communicate with each other.

Physical results revealed in 1990 form the basis of the essential component of a potential vortex SW. The need for an extended field theory approach has been known since 2009 with the discovery of magnetic monopoles. For the first time this provides the opportunity to explain the physical basis of life not only from the biological discipline of science's understanding. Nature covers the whole spectrum of known scientific fields of research; for the first time this interdisciplinary understanding is explaining such complex relationships. Decisive are the characteristics of the potential vortex. With its concentration effect, it provides a miniaturization down to a few nanometers, which for the first time allows the outrageously high information density in the nucleus.

Here the magnetic SW theory explains dual-based pair-stored information of the genetic code and a process of converting it into an electrical modulation—say, "piggyback" information transfer from the cell nucleus to another cell. At the receiving end the reverse process takes place when writing a chemical structure physically. The energy required to power the chemical process comes from the SW itself. As an example of such a piggyback scenario, we can observe the carrier wave piggybacking in *Scientific Consciousness Interface Operation (SCIO)* technology.

Figure 3.20 is an illustration of such technology; when we set our radio or TV to a wavelength, such as 103.5, we get the wave of the station. The music and voice are superimposed onto the master wavelength in a piggyback manner known as a *carrier wave*. Therefore, when we make a master signal from the SCIO/Eductor we can superimposes a piggyback signal on the carrier wave.

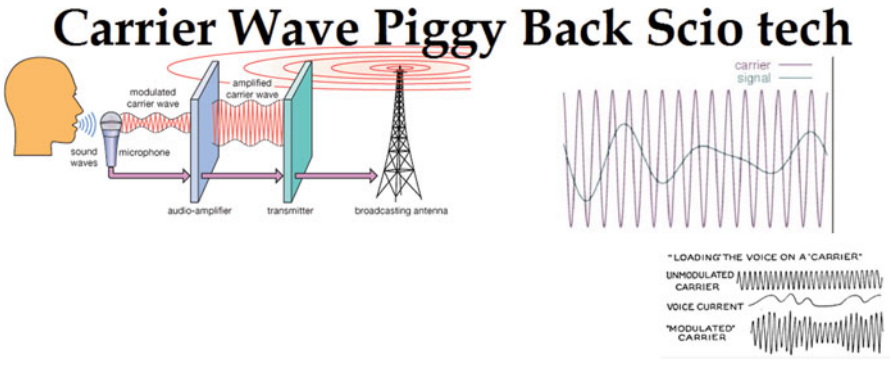

Fig. 3.20 Demonstration of carrier wave piggyback SCIO technology