

# **An Ultimate Energy Exchange Structure**

**Frank H. Makinson**

**Abstract** – It is postulated, in the core of every electron, proton, neutron and any other particle that has mass and/or a charge, there exists what can be identified as an ultimate fractal energy transfer structure. This multipurpose energy exchange structure will have the capability to have resonance with a broad range of electromagnetic frequencies that constantly traverse the universe. The fractal energy transfer structure functions somewhat like contemporary radio frequency identification devices, where the electromagnetic energy from an outside source is used to produce electromagnetic radiation for another purpose. A atom that can produce an electromagnetic wavelength that is a billion times longer than its physical size requires a unique energy exchange structure.

## **Introduction**

There are a number of issues presented in this paper that contemporary science have not properly explained. Some of the issues that scientists claim to understand are not really explained, they are just a mathematical description of an energy exchange process.

Scientists have identified two unseen influences that are ubiquitous within the cosmos, gravity and electromagnetic (EM) waves. We know what gravity accomplishes, but textbooks do not state the purpose for the existence of EM waves. It is reasonable to state, “EM waves exist for the purpose to energy transfer.” All the processes or structures that exist that can produce EM waves or extract energy from an EM wave are not known with certainty. How the atom and other particles produce their EM radiation and gravity field are not known.

The majority of our atomic theory was developed before fractal antennas were known to exist. Atomic theory does not consider how particles obtain energy to produce a charge, produce a particular or group of frequencies or the energy to produce the attractive force of gravity. Showing the mathematical basis for energy transitions does not identify the structure that is required to receive and respond to EM waves.

It is known that an outside EM energy source can induce a specific atom to generate EM radiation at different frequencies simultaneously. When an atom can radiate EM energy that has a wavelength a billion times larger than the physical size of the atom, there has to be some type of energy storage and exchange structure (ESES) within the particle to accomplish the transfer. It is not known if an atom's ESES is functioning as a full wave rectifier, but there are rational reasons to suspect it does.

It is known that a hydrogen atom exposed to an outside energy source can produce an energy transfer at the specific EM frequency of 1,420,405,751.7667 Hz, a wavelength of 21.1061140542 cm in free space. This is often referred to as the spin-flip radiation. That wavelength is extremely larger than the object producing that radiation.

It is stated that the energy transfer process is accomplished by photons. The amount of energy of a photon is stated is directly proportional to the electromagnetic frequency. It is stated that a higher photon frequency has a higher energy content irrespective of the number of charged particles that are involved in creating an EM wave. It is stated that mass is the result of the binding energy that holds particles together. This leads to the question, “What process creates and maintains the binding energy?”

## **Fractal Antennas**

Fractal antennas have the capability to operate at many different frequencies simultaneously for

both receiving and transmitting. It is only in the last 50 years that this type of antenna structure has been known to our scientists. Radio frequency identification devices (RFID) are using loop and fractal antennas.

RFID receive energy from a radiating source, the reader (down-link), at a particular frequency and provides a responding radiation from the tag (up-link) at the same frequency. Some RFID devices store received energy in a capacitor and use that energy to produce the return signal. RFID devices have three modes of energy transfer, full duplex (FDX), half duplex (HDX) and sequential (SEQ). SEQ systems use that type of power cycle to charge a capacitor for peak power demand. Energy transfer from the reader or from the tag occurs simultaneously with FDX or in alternating periods with HDX and SEQ methods. RFID readers and tags typically use the same frequency for transmission and receiving. Passive and semi passive RFID tags mimic a radio transmitter by modulation of the received power of the tag antenna. The tag modulation contains the identification code of the tagged item.

Atoms can produce EM emissions at multiple frequencies simultaneously. There appears to be some similarities between how RFID devices and the ESES function in atoms. The atom is receiving, storing and transmitting EM energy at different frequencies simultaneously or nearly simultaneously. It is not known if the 21cm wavelength signal produced by a hydrogen atom is the result of a FDX, HDX or SEQ type process.

When there is a substantial difference between an energy source frequency and the energy transmission from an atom implies a buffering system is in the process. The fractal energy transfer structure must be serving as an antenna, for receiving and transmitting, and as a rectifier and energy storage at the same time. If the emitted signal has a longer duration wavelength than the received signal the rectified power of the energy source has to be stored and released to the emission structure for the duration it takes to produce the emitted signal.

## **Electromagnetic Wave Purpose**

Text books do not discuss, "What is the purpose for the existence of EM waves?" Only one search engine was found to even include that question, which cited papers by this author where that question was introduced. From the "Conservation of Energy" perspective, EM waves fit in quite well if you consider the universe as a closed system, EM waves exist for the purpose of transferring energy within a closed system. When it is understood that the purpose for the existence of electromagnetic waves is to transfer energy, there have to be processes in place that allow that energy to be accessed and converted to other useful forms.

## **Energy Source**

"Galaxies form 'megawalls' across space"[2] "Most surprising, however, is the fact that the megawalls seem to be almost equally spaced, some 420 million light years (128megaparsecs) apart. The researchers stress that it is difficult to work out statistically whether this apparent periodicity is genuine." Cyclic patterns are very evident. A century ago, optical astronomers did not consider that other EM waves, other than light, were traversing the universe. This was suggested to Eddington, but he rejected it, page 291 of his book, "The Internal Constitution of Stars"

The megawalls of galaxies suggests the presence of a massive cyclic energy source. The figure shown in the article, ref. (2), has an obvious much longer cycle that could be easily identified by a Fast Fourier Transform analysis.

The "Big Bang Theory" (BBT) was presented before it was known that EM waves, other than light, were traversing the universe. The same author that presented the BBT concluded that galaxies were receding from each other, did not know that particles in the intervening space could alter the energy from the blue end of the light spectrum more readily than from the red end, which produced a redshift

in the light spectrum.

Radio astronomers have developed the *Dispersion Measure* (DM) formula to account for observed EM spectrum frequency shifts of various atoms spectra caused by particles within our galaxy. The miniscule particle presence in between galaxies will produce the same light spectrum shifts for the large distances between galaxies.

## **Conclusion**

Atoms require a unique ESES to acquire energy, store it, and release it to produce EM wavelengths a billion times longer than the size of the atom. We do not know every possible way to produce an EM wave or to detect them.

There has to be an energy source within the universe that allows various ESES convert that energy for a variety of purposes.

From our viewpoint, the ultimate ESES is our Universe.

## **References**

[1] DEMETER <https://demeter.cnes.fr/en/DEMETER/index.htm>

[2] NewScientist, “Science: Galaxies form 'megawalls' across space“ Magazine issue 1707 , published 10 March 1990 <https://www.newscientist.com/article/mg12517073-400-science-galaxies-form-megawalls-across-space/>