MAGNETIC THEORY OF RADIO, LIGHT, X, GAMMA, DELTA RADIATION, AND THE WAVE - PARTICLE DUALITY OF MASSLESS PHOTONS EXPLAINED

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ABSRACT

A new quantum magnetic theory to explain all forms radiation, including cosmic background, radio, heat, light, X, Gamma, and Delta radiation, which also explains the wave particle duality of mass-less "photons."

POSTULATE

Electrons, although quite complicated, do exist, and they create a circular magnetic field perpendicular to their direction of acceleration or deceleration. The intensity of this circular and expanding magnetic field is proportional to the amount of acceleration or deceleration. This magnetic field expands away at right angles from the electron acceleration/deceleration direction at the speed of light.

What we consider to be ordinary matter can be approximately modeled by the electron, proton, and neutron Bohr atom. An expanded model of this Bohr atom is this writer's anti-neutron model, which postulates that protons and neutrons are composed of anti-neutrons, electrons, and positrons. See www.k1man.com/c2 These are just approximate models.

ARGUMENT

Ordinary matter, such as copper, has loosely bound electrons which continuously vibrate, depending on temperature. These vibrations consist of electron accelerations and decelerations which create and radiate magnetic circles of energy in random directions, as determined by the orientation of these vibrations. Those “free” electrons, somewhat bound to each atom, can be aligned in certain materials and remain in a particular orientation such that the circular magnetic fields add up, and a “permanent” magnet is thus created. Coiling a wire around an ordinary iron nail and connecting it to a DC battery voltage will also create a net magnetic field along the direction of the nail in which the tiny individual atomic electron dipole magnets will align themselves along the axis is the nail.

How does the DC battery current in the coiled wire around the nail create a net magnetic field? The applied battery voltage must cause electrons in the end of the wire nearest the battery to accelerate locally, as this local effect is propagated down the wire very rapidly by electrostatic repulsion. Other vibrating free electrons in the wire naturally change their orientations to align with this new disturbance that has been introduced into the wire and induced into the iron nail.

Each little electron vibrating dipole thus radiates a quantum of magnetic energy proportional to the frequency of the vibration since larger frequency increases the intensity of electron accelerations and decelerations. Cosmic background radiation frequency (and energy) is thus proportional to the single digit temperature of hydrogen throughout the universe. What we think of as radio, is of quite low frequency, starting at zero. The 60 cycles per second AC voltage in an ordinary filament transformer is actually a radio signal going from primary to secondary.

A circular magnetic field, as it expands outwards, will influence another electron, when and if one is encountered. This effect is for the encountered electron to accelerate/decelerate similar to the original electron creating the circular and propagating magnetic field. Thus radio signals duplicate transmitting antenna voltages, including voice modulation, etc., on the receiving antenna wire. Radio energy builds up terrific intensity both through being in resonance and being in

phase, both influenced by the driving (transmitter) voltages. Since radio propagation is usually sinusoidal in nature, we view this as radio waves, when actually the propagation consists of a huge collection of each little quantum of propagating magnetic energy. These quantums are called “photons” in the case of light generated by electron changes of energy in an atom. The minimum fundamental amount of light radiation has been defined as Planck’s constant. This quantum mechanism is actually described graphically and mathematically by Dr. Richard Feynman’s theory of QED, quantum electrodynamics, without ever being attributed to magnetism.[1]

Consider a balanced alternating sinusoidal voltage applied to the center of a dipole radio antenna. The very first electron reaching one side of the dipole wire will cause a single electron of an atom of that antenna to (further) accelerate and thus create a circular magnetic field in a direction perpendicular to the direction of accelerations/decelerations that particular atom. This is in addition to the circular magnetic field already caused by temperature vibration. The radio radiation pattern of the antenna will be determined by the distribution of vibration directions on the wire.

There are other complications, since the dipole antenna also is a capacitor, with its dielectric between the wire and the ground. Accordingly, this dielectric has considerable influence on both the resonant frequency of the wire as well as the speed with which electrical influences travels along the wire. The wire is also a host for reflections, standing waves, etc.

When bound electrons change energy levels within each atom, the accelerations and decelerations are greater, and higher energy magnetic energy is created which we see as light. Electrons slamming into a metal surface decelerate quickly, and even higher energy X rays are created. Electrons inside the nucleus changing energy levels enormously fast create enormously high energy Gamma rays, etc.

WAVE PARTICLE DUALITY OF MASS-LESS ENERGY PROPAGATION

Since radio, light, etc. are really tiny quantum circular and expanding magnetic disturbances, it can be easily visualized how a single one of these expanding disturbances, conventionally thought of as a "photon," could simultaneously go through two slits in the double slit experiment. Locally, this disturbance appears much like a particle, when, in fact, it is just an expanding quantum of magnetic energy generated by an accelerating or decelerating electron. This restricted model does not extend to the double slit experiments concerning particles with mass, such as electrons and buckyballs, which also appear to exhibit wavelike interference characteristics.

CONCLUSION

Again, this is just an approximate model. It is really not clear how electricity flows or even what an electron really is. The model gives you a mental picture of common things such as temperature, heat radiation, radio, X rays, cosmic background radiation, etc. Radio, light, etc. are just magnetic phenomena until destination electrons are encountered. Polarization of light and other radiation is somewhat easier to visualize if radiation is magnetic rather than electromagnetic in nature.

There are many loose ends, of course. A serious mathematical formalism for this model is certainly worth serious attempts.[3]

[1] QED the strange theory of light and matter, Richard P. Feynmen, Princeton University Press, 1985

[2] RELATIVITY FOR THE LAYMAN by James A. Coleman, Signet, New York, 1958

[3] Dear Glenn Baxter: To your comment that "A serious mathematical formalism for this model is certainly worth an attempt." A complete and consistent mathematical model already exists. Please have a look at www.odomann.com
Kind regards, (Dr.) Osvaldo Domann

* Mr. Baxter has a degree in Industrial Engineering from the University of Rhode Island and is a Licensed Professional Engineer in Illinois and Maine. He is a graduate of Vermont Academy, which honored him in 1993 as a Distinguished Alumnus with the Dr. Florence R. Sabin Award. It was at Vermont Academy as a student where Mr. Baxter attended a talk and met the very popular relativity author James A. Coleman[2]. Mr. Baxter has been doing research in relativity and physics ever since and is currently Executive Director of the Belgrade Lakes Institute for Advanced Research. His current interests include physics, philosophy, and theology.