## A Substantiation Of The Aether And Validation By Way Of Testing

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Abstract: The Aether espoused by many authors, incorporated in many theories and called by many different names; is required to fully understanding the physical universe. A few notes on the speed of light in a vacuum mechanism, the cosmological spectral shift (redshift) mechanism and the cause of magnetism are presented. Methods of testing the first two are offered. A paragraph describes the Aether as the instrument which generates physical constantes, forces and matter.

A Substantiation Of The Aether And Validation By Way Of Testing: The constant for the speed of light in a vacuum (c) must originate from a natural cause; that exists within the vacuum, that is universe-wide and is as old as the universe. The Aether provides this mechanism. This mechanism is likely a relativistic spin of the Aether components or non-particles(I) (dipoles.) The photon's transition from the electron into the Aether determines the direction and the random orientation of the spin provides the energy to cross the universe and still have enough energy to affect an electron. The Aether dipoles that match the direction of the photon provides momentum and a frictionless environment.

If c is determined by the Aether, then any interferometer measure of the Aether will approximate c. The Michelson-Morley type experiments will indicate very little interference. Any interference that is generated is likely due to Aether density gradients, speed of light in medium other than a vacuum or interferometer configurations.

There are several methods to determine the validity of the above: Short distance measurements of c, might determine density gradients in the Aether. If differences in the speed of light can be determined, then simultaneous measurements of the Permittivity and Permeability would be an additional confirmation of the Aether.

The red/blue frequency shifts of stellar spectra, the cosmological redshift, likely originate extremely close to the source electrons. There must be some form of a frequency shifting mechanism that absorbs red shift energy or produces blue shift energy. Whether the spectrum of the photon will shift to the blue or to the red is not predetermined. That information is not contained within the electron. The Aether is the likely mechanism. The distance between the Aether dipoles effects the wavelength/frequency of the emitted photon. The distance between the Aether dipoles decreases in the direction of travel and increases, in the opposite direction of travel. Forward movement pushes the Aether dipoles closer together and thus shorter wavelengths, with the resultant increase in energy. The longer wavelength (greater distance between Aether dipoles,) that is created or pulled from the direction of travel, equates with less energy.

Considering the above, there might be a method to shift the spectrum of a coherent light pulse. That is to move the dipoles of the Aether closer or further apart. Pulsating magnetic energy or resonance wavelengths of radio frequency energy might be used to physically move the dipoles of the Aether. The force directed towards the on-coming pulse might move the dipoles closer together (blue shift.) The force directed from the source of the pulse (not in a vacuum) might move the dipoles further apart (red shift.)

Photons might be created by the dipole interaction within the Aether. Neutrino detector experiments might be able to detect stray photons in water based, liquid xenon or liquid krypton, large tank

detectors. These detectors may need to be modified for a broad photon spectrum analyses.

Additionally, the Aether might spontaneously generate matter, due to physical waves or even rogue waves within the Aether. Hermetically sealed volumes, such as abandoned pressure tanks, gas pockets in amber or geodes, could be analyzed for unexplained pressure changes or created elements.

While the Aether dipoles, being very small and having no charge, can likely pass through matter, occasionally individual dipoles will strike particles. One method that might detect the Aether would require a very heavy, tightly fitting cylinder/piston, arranged vertically. This would include a precision explosive charge at the top. At the bottom of the cylinder would be a small a test chamber. The explosive charge would drive the piston the length of the cylinder. This would completely and quickly compress the gas or partial vacuum within the cylinder. The space within the depression would be examined for photons, particles, or isotopes created from the Aether/high energy interaction.

The dual slit demonstration is similar to water flow patterns at closely spaced bridge abutments. The Aether could be this flow-like mechanism for the photon dispersion. A modeling of this dispersion mechanism might evidence the Aether. Further, the Aether might be the cause of the orbital fly-by anomaly.

The Aether provides causation for many of today's questions: Gravity by way of push. Permeability by way of neutral dipoles. Permittivity by way of a mosaic blocking action. Magnetism by way of an electron dipole generated Aether wind. (II) Matter: photons to quarks(hadrons) to leptons due to mixing in the Aether environment, The strong force by way of boundary grouping. Vacuum energy by way of the relativistic spin (in a sea of Aether dipoles.) Length contraction by way of compression and time dilation by way of pushing against the Aether .

- (I)"Non-particles," The term is used because the components of the Aether very likely, have virtually mass, carry no charge, do not convey/manifest heat (heat exists in a world of atoms and molecules,) exists without friction in a relativistic spin perfect fluid, are densely concentrated (nearly touching,) account for the vacuum energy, are dipoles and could be as small as 10^-65 meters.
- (II) The direction of spin, for the Aether dipoles, is not spherically random, but the axis of spin, shifts randomly. A sphere rotating on an axis, has two orientations of spin. A clock turns clockwise from the front, but from the rear it has a counterclockwise direction. The spin direction from one pole direction is reversed from the opposite pole direction. Therefore a a propeller in gas or a liquid, pushes in one direction and pulls in another direction, with the same spin. Add another unit running in-line, with the same spin, the effect is magnified. Turn one unit around and the effect is neutralized. When all the dipoles spin randomly, there is no push or pull. This effect is very similar to the magnetic force.

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