

# Physical Lines of Force in the Aether

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**Abstract.** In the nineteenth century, James Clerk-Maxwell was unable to explain the linkage between gravity and electromagnetism. He realized that gravitational lines of force must involve a pressure, as is the case with magnetic lines of force when they are involved in mutual repulsion. He also realized that the pressure in the magnetic lines of force acts laterally due to centrifugal force in a sea of molecular vortices, but he couldn't seem to similarly explain the pressure in the gravitational lines of force [1]. It will now be suggested that gravitational lines of force are actually lines of tension, and that Maxwell's molecular vortices are dielectric in nature. The linear polarization of these dipolar vortices, caused by the gravitational field, will increase the centrifugal pressure which is exerted laterally, and this pressure will result in a repulsive force in competition with the attractive force. The attractive force, being a monopole field, will obey the inverse square law, whereas the repulsive force, being a dipole field, will obey the inverse cube law. Hence if the charge of an object increases, the inverse cube law relationship for the surrounding repulsive force field will lead to a reversal threshold, where it will dominate over the attractive force. The charge can increase electrostatically or because of inertia. In the latter case, the repulsive force field is the large scale centrifugal force.

## The Radial Field

I. Energy is either aether pressure or aether tension. Where aether flows into a sink, it will be in a state of tension, and the sink will constitute a negative particle surrounded by an attractive force field. Large bodies made of atomic and molecular matter are normally net sinks. Pervading these bodies and in the space beyond is a dense sea of rotating electron-positron dipoles. The electrons are aether sinks and the positrons are aether sources. This means that space is filled with a dense sea of tiny aethereal vortices [2], [3]. The pressure emerging from a positron increases when an electron-positron dipole is angularly accelerated (magnetized). Positrons are therefore the primary unit of centrifugal force. Centrifugal force is normally associated with rotation, but theoretically it is simply a radially outward pressure equivalent to positive charge. Positive charge also increases when a dipole is stretched. The stretching of a dipole is known as linear polarization. When the aether flows into atomic and molecular matter, it flows through these electron-positron dipoles causing them to become stretched. The positrons therefore produce a greater centrifugal force which acts at right angles to the large scale aether flow. This means that radial field lines involve a tension along their length and a pressure acting laterally. Two negative charges will therefore mutually repel if they are strong, whereas they will mutually attract if they are weak.

## **The Solenoidal Field**

**II.** The stability of the electron-positron sea is based on the fact that the individual electron-positron dipoles constitute mutual circular orbits and bond with neighbouring dipoles in a double helix fashion [4]. The dipoles will attract each other along their mutual rotation axes due to the fact that electrons will be stacked above positrons. The dipoles will repel each other in their mutual equatorial planes due to the centrifugal force coming from the positrons. This leads to stable solenoidal lines of force which, just like the radial lines of force, have a tension along their length and a pressure acting laterally. These solenoidal field lines must exist even in a radial field, and in the absence of any source of rotation they will form rings around a line which joins two gravitating bodies. The solenoidal rings of force within the radial field are essential for the purpose of coordinating the direction of the lateral pressure in the radial lines of force. These rings of force will involve a constricting pressure which causes the tides [5]. Solenoidal lines of force also form around rotational sources such as bar magnets and electric currents where they are known as magnetic lines of force.

## **The Reversal Threshold**

**III.** The tension in the large scale radial field, being a monopole field, will obey the inverse square law. The centrifugal pressure which is exerted laterally from radial and solenoidal lines of force on the other hand is a dipole effect, and so it will obey an inverse cube law. When a positively charged body is placed near to a negatively charged body, the field lines will connect directly between the two bodies. The aether flowing from one body to the other will pull the two bodies together. When two negatively charged bodies are placed near to each other, the field lines will spread outwards between them and meet laterally. The inflowing aether will have the effect of causing the two bodies to fall into each other. However, the centrifugal pressure acting sideways from the field lines will try to push the two bodies apart. There will be a competition between the attractive force and the centrifugal repulsive force.

The attractive force, being a monopole field, will obey the inverse square law. The centrifugal force however, being a dipole field, will obey the inverse cube law. Hence if we increase the factors which increase the

centrifugal force, a reversal threshold will be reached in which the centrifugal repulsive force will override the attractive force. These factors could be either the increasing of the gravitational charge, or the increasing of the mutual transverse speed of the two bodies.

## **Inertia and the Centrifugal Field**

**IV.** A flow of aether through a wire causes linear polarization and hence induces pressurized aether. This is an electric current, and the induced aether pressure is positive electric charge. This positive charge expands into the tiny vortices in the surrounding space causing them to angularly accelerate. The expansion also causes linear polarization in the area enclosed by the circuit. The angular acceleration of the vortices leads to a magnetic field which is in fact a solenoidal centrifugal pressure field. Likewise when an object is in motion through the sea of tiny vortices, the interaction leads to the induction of aether pressure which is known as inertia or kinetic energy. It is as if motion through the sea of tiny vortices causes the object to inflate. This inertial pressure also expands into the surrounding sea of tiny vortices and the combined effect is manifested as centrifugal force. The moving object is pressurized and the pressure expands into the tiny vortices in the space beyond, causing a radial centrifugal pressure field that is similar in nature to a magnetic field.

## **Conclusion**

**V.** Gravity, electrostatics, and electromagnetism are all caused by aether flow in a dense sea of rotating electron-positron dipoles in which the electrons are aether sinks and the positrons are aether sources. This means that the luminiferous aether is not so much the aether itself as it is actually a sea of tiny aether vortices. The lines of force involve a tension along their length and a pressure acting laterally. The tension is caused by the flow of the aether towards a sink, whereas the pressure arises due to aether outflow from the positrons in the dipoles. The aether pressure emerging from the positrons increases when the dipoles are stretched or angularly accelerated. In magnetic lines of force, the tension is bi-directional, flowing between electrons and positrons along the double helix, whereas in electrostatic and gravitational lines of force, the aether

flows in one direction. Electrostatic lines of force are simply gravitational lines of force in which the inflow rate has increased to the extent that the linear polarization of the dipoles has led to the centrifugal pressure, which acts at right angles to the lines, becoming dominant over the attractive tension, which acts in the direction of the lines.

### References

[1] James Clerk-Maxwell wrote “ - - - *If we calculate the lines of force in the neighbourhood of two gravitating bodies, we shall find them the same in direction as those near two magnetic poles of the same name; but we know that the mechanical effect is that of attraction instead of repulsion. The lines of force in this case do not run between the bodies, but avoid each other, and are dispersed over space. In order to produce the effect of attraction, the stress along the lines of gravitating force must be a pressure*”

Clerk-Maxwell, J., “On Physical Lines of Force”, Part I, Philosophical Magazine, Volume 21, (1861) [http://vacuum-physics.com/Maxwell/maxwell\\_oplf.pdf](http://vacuum-physics.com/Maxwell/maxwell_oplf.pdf)

[2] ET Whittaker wrote “ - - - *All space, according to the young [John] Bernoulli, is permeated by a fluid Aether, containing an immense number of excessively small whirlpools. The elasticity which the Aether appears to possess, and in virtue of which it is able to transmit vibrations, is really due to the presence of these whirlpools; for, owing to centrifugal force, each whirlpool is continually striving to dilate, and so presses against the neighbouring whirlpools - - -*”.

ET Whittaker, A History of the Theories of Aether and Electricity; The Classical Theories (London; New York, American Institute of Physics, 1987) p.6

[3] In the biography of Nikola Tesla dated 15<sup>th</sup> July 1944, which was written by John J. O’Neill at Freeport, Long Island, New York, it says “*Long ago he recognized that all perceptible matter comes from a primary substance, or tenuity beyond conception, filling all space, the Akasha or luminiferous ether, acted upon by the life giving Prana or creative force, calling into existence, in never ending cycles all things and phenomena. The primary substance, thrown into infinitesimal whirls of prodigious velocity, becomes gross matter; the force subsiding, the motion ceases and matter disappears, reverting to the primary substance.*”

The 1937 Encyclopaedia Britannica article on ‘Ether’ discusses the structure of the aether in relation to the cause of the speed of light. It says, “*POSSIBLE STRUCTURE. \_\_\_ The question arises as to what that velocity can be due to. The most probable surmise or guess at present is that the ether is a perfectly incompressible continuous fluid, in a state of fine-grained vortex motion, circulating with that same enormous speed. For it has been partly, though as yet incompletely, shown that such a vortex fluid would transmit waves of the same general nature as light waves \_i.e., periodic disturbances across the line of propagation\_ and would transmit them at a rate of the order of magnitude as the vortex or circulation speed - - -*”

It was not made clear from the article whether or not they were referring to Tesla’s theory.

[4] Tombe, F. D., “The Double Helix Theory of the Magnetic Field” (2006) <http://www.wbabin.net/science/tombe.pdf>

[5] Tombe, F. D., “The Electric Rings of Force that cause the Tides” (2010) <http://www.wbabin.net/weuro/tombe66.pdf>