

## Maxwell's Sea of Molecular Vortices

Frederick David Tombe,  
Belfast, Northern Ireland, United Kingdom,  
[sirius184@hotmail.com](mailto:sirius184@hotmail.com)  
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**Abstract.** Electrostatics is dipolar, gravity is monopolar, and magnetism is ostensibly non-polar. Any unified field theory will therefore have to explain how to reconcile these three distinct characteristics. The common link between all of these phenomena is the fact that they are all a consequence of aether flow. It only remains to establish the arrangement of the aether sources and the aether sinks in space, that simultaneously gives rise to all three of these phenomena. The solution is found by activating James Clerk-Maxwell's sea of molecular vortices. The electric particles that surrounded Maxwell's aethereal vortices become sources (positrons) and sinks (electrons), and this gives rise to fine-grained double helix patterns in space that trace out magnetic lines of force.

### Electric Current

I. Gravity and electric current are essentially the same thing. They both constitute a flow of aether from a source to a sink. However, in the case of gravity we don't know where the sources are. Gravitational lines of force extend to infinity.

The basis for the unified field theory is the all-pervasive electron-positron sea which we will call '*The Electric Sea*'. Electrons are aether sinks and positrons are aether sources. Electrons and positrons pair into mutually rotating dipoles corresponding to Maxwell's molecular vortices, [1], and they align with each other in a double helix fashion, [2], such that their rotation axes trace out magnetic lines of force. See Fig.1 below,

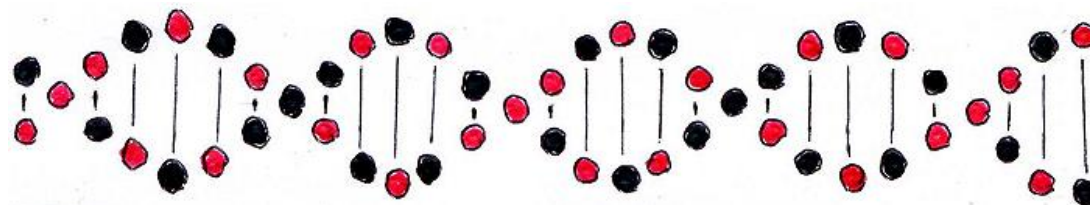


Fig. 1 Close-up view of a single magnetic line of force. The electrons are shown in red, and the positrons are shown in black. The double helix is rotating about its axis with a prodigious angular speed, and the rotation axis represents the magnetic field vector  $H$ . The diagram is not drawn to scale since the relative dimensions remain unknown.

When a large-scale flow of aether permeates through this electric sea as is the case when there is a superimposed gravitational field, electrons being sinks, will consume aether at such a rate as to eat their way towards the source, and positrons being sources will be repelled from the gravitational source. The internal dipole bonds will however prevent these dipoles from completely splitting. A torque will result, and the dipoles will precess about an axis parallel to the large-scale gravitational flow lines.

## **Lines of Force**

**II.** Magnetic lines of force are solenoidal. However, as explained above, they are riddled with positron sources and electron sinks that form a double helix along each magnetic line of force. Electric current causes magnetic lines of force to form closed loops around it, and it then acts transversely on the rotating electric dipoles so as to cause them to angularly accelerate as the magnitude of the current increases. The increased angular speed leads to an increased vorticity and to an increased centrifugal pressure in the equatorial plane. The increased centrifugal pressure opposes the electric current that causes the angular acceleration in line with Lenz's law. The vorticity of the rotating aethereal dipoles, **H**, is a measure of the magnetic field strength. Magnetic attraction is caused by the bi-directional tension along the lines of force due to the bi-directional flow of aether between neighbouring positrons and electrons along the double helix. The sources (positrons) and the sinks (electrons) themselves do not therefore move along the magnetic lines of force. This bi-directional aether flow hides the sources and the sinks and gives rise to the large-scale observation that magnetic lines of force are lines of tension without beginning or end.

Magnetic lines of force therefore store fine-grained centrifugal potential energy which determines the fine-grained vorticity and hence the magnetic field strength, while electric field lines through the electron-positron sea store fine-grained precessional kinetic energy. The aether pressure which emerges from the positrons in both electric field lines and in magnetic field lines gives rise to repulsive forces that act laterally from the field lines. This lateral repulsive force stops the solenoidal magnetic lines of force from collapsing under the tension along the lines.

## The Repulsive Forces

**III.** The repulsive forces act laterally between lines of force that arise when electric current causes either linear polarization or magnetization in the electric sea. Aethereal repulsive forces also arise in the form of inertial pressure (centrifugal force and Coriolis force) when objects move through the electric sea, [3]. Dipolar fields give rise to an inverse cube law, and in the case of large-scale inertia, when we examine the centrifugal force in connection with Kepler's law of areal velocity, we can see that we are dealing with an inverse cube law. When like charges or like magnetic poles repel each other, the lines of force spread outwards and away from each other in the space between them. The repulsion is due to the lateral aether pressure between the lines of force, and in the case of magnetic lines of force, this is fine-grained centrifugal pressure. In the case of gravitational lines of force, this lateral pressure is insufficient to overcome the tension of the aether inflow along the lines, unless transverse motion causes sufficient centrifugal pressure. The dipolar inverse cube law of repulsion between lines of force acts as a counterbalance against the monopolar inverse square law of attraction along lines of force. The two different power laws create an equilibrium node which is the basis of stability throughout the known universe, and which allows for magnetic levitation.

In the case of electrostatic repulsion, we would be dealing with an inverse square law if we were considering two positrons in isolation. However, mostly we are dealing with the dipolar pressure that arises between the electric field lines of the electric sea, due to large scale charged bodies. When two negatively charged bodies are brought near to each other, we might expect to observe a mutual attraction as in the case of gravity. And this we do when the negative charge is mild as in the case of gravity. It has therefore been conventional to take our standard of electric neutrality in electrostatics from gravitational charge which is essentially a mild negative electric charge. However, when the negative charge increases, this increases the aether inflow rate and hence the lateral aether pressure between the electric field lines. A reversal threshold will be reached, due to the fact that the dipole field increases with an inverse cube law, and hence the two negatively charged bodies will repel each other.

## **The Rules for Repulsion and Attraction**

**IV.** Two positively charged bodies will repel each other. Two negatively charged electrons in total isolation will attract each other. However, in most cases, we are dealing with large scale effects in which bodies are immersed in the all-pervasive electric sea, and that involves positrons which emit pressurized aether when the equilibrium is disturbed. Taking gravitational charge as a mild negative charge which we use as our standard of neutrality, then two gravitationally charged bodies will mutually attract each other. However, when the aether inflow rate increases so as to induce sufficient aether pressure in the lines of force, two negatively charged bodies will repel each other.

Unless the positive charge is very strong, a positively charged body immersed in a gravitational field will fall into the gravitating body due to the fact that the field lines between the two bodies will join directly together and the electrostatic field of the positive body will be totally encased in the surrounding gravitational inflow. A negatively charged body immersed in a gravitational field will fall into the gravitating body unless it becomes so negative that the reversal threshold is invoked.

## **Permeability and Permittivity**

**V.** A ferromagnetic material is a magnetically charged body. The space around it is charged with fine-grained centrifugal aether pressure. A paramagnetic material is not charged, but it allows magnetic field lines to permeate through it. A diamagnetic material is more resistant to magnetic field lines permeating through it.

An electrically charged body corresponds to a ferromagnetic material, and while conductors and dielectrics correspond to paramagnetic materials, there is no analogy in electrostatics to a diamagnetic material. Unless we are dealing with a very weak electric field such that it can be shielded by a gravitational field, conductors and dielectrics permit electric field lines to flow through them. Conductors and dielectrics differ in the extent of the permittivity and also in the fact that in conductors, the dipoles split, allowing the two particles to flow in opposite directions, while in dielectrics, the dipoles precess but do not actually split. If we place a slab of conducting material in an electric field, the electric field lines will be permitted to flow through it. However, since this conducting slab does not comprise a closed

circuit, the aether flow will cause the electrons to accumulate at one end of the conductor and the positrons to accumulate at the other end. The ensuing large-scale polarization will oppose the electric current that is causing it. This principle is used in the capacitor circuit, such as to block the current and to store energy as like in the case of a river dam.

Dielectric material will permit the flow of aether to a lesser degree than conducting material. If we place a dielectric in an electric field we will obtain a fine-grained linear polarization as opposed to the large scale polarization in the case of the conductor. Even so, the net charge at each end of the dielectric means that it will follow the same rules as the conductor, and that it will be attracted to the source or the sink of the electric field, according to which of the two is closer.

A diamagnetic material on the other hand is repelled from the magnetic pole because the concentration of the magnetic lines of force is greater outside the material than inside. The centrifugal pressure in the dipoles of the magnetic lines of force that go around the outside of the diamagnetic body will push the diamagnetic body away from the external magnetic pole.

## **Conclusion**

**VI.** Space is filled with a dense electric sea that comprises of sinks (electrons) and sources (positrons) in the aether (vitreous fluid). Every sink is paired with a source in a mutual orbit, and hence the electric sea is a sea of rotating aethereal dipoles that corresponds to Maxwell's sea of molecular vortices. These dipoles will be aligned in a double helix fashion with their rotation axes tracing out magnetic lines of force. Gravity and electrostatic attraction are the tension that is associated with the irrotational flow of aether from sources to sinks, while magnetic attraction is the fine-grained bi-directional flow of aether between electrons and positrons along the double helix. In the case of electrostatic attraction, the tension that pulls the two objects together is caused by a unidirectional aether flow that in turn causes a bi-directional particle flow, whereas in the case of magnetic attraction, the tension is caused by a bi-directional aether flow that is not accompanied by a particle flow. Electrostatic and magnetic repulsion are caused by the lateral aether pressure that emerges from the positrons between electric and magnetic lines of force. When repulsive forces arise, the field lines spread outwards and away from each other between the two bodies. In the case of gravitational attraction, the field lines also spread outwards and away from each other giving rise for Maxwell to speculate that gravitational field lines

involve a pressure. And yes, they do. It will be the same pressure that is involved in the repulsive forces, but it will be below a certain threshold of intensity such as that the inflow tension along the lines of force dominates.

Electromagnetic radiation is the transfusion of pressurized aether from positrons to electrons in the all-pervading electric sea.

## References

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