

The Four Kinds of Electric Charge

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Abstract. Charge is ultimately aether pressure or aether tension. Electromagnetism is about pressure equilibrium in the aether as it swirls around the sinks and sources of atomic and molecular matter, and the sinks and sources of the electron-positron sea inside atomic and molecular matter and in the space beyond. Aether hydrodynamics leads us to the Lorentz force. This approach to electricity does however pose a major riddle. It follows from aether hydrodynamics that two sinks will mutually attract each other, whereas experiments demonstrate that two kinds of electric charge exist, and that like charges mutually repel each other in both cases. This article examines how fine-grained centrifugal force in the electron-positron sea might act under certain circumstances so as to reverse the mutually attractive property of large sinks.

Introduction

I. The idea that fine-grained centrifugal pressure could reverse the inflowing effects of a gravity sink has already been introduced in ‘Gravity Reversal and Atomic Bonding’ (now superseded by ‘Electrostatic Repulsion and Aether Pressure’ at <http://www.wbabin.net/science/tombe44.pdf>), and the fact that the Lorentz Force can be derived from aether hydrodynamics, along with an additional centrifugal force term, has been demonstrated in ‘Gravitation and the Gyroscopic Force’ at <http://www.wbabin.net/science/tombe5.pdf>. Assuming that negative charge is the tension associated with an aether sink, and that positive charge is the pressure associated with an aether source, the purpose of this article is to take a general look at how the all

pervading sea of rotating electron-positron vortices can account for two additional kinds of electric charge that are centrifugal force based.

The Aether

II. The aether is space itself, but it is not rigid and static as is commonly believed. It is compressible, stretchable, and dynamic. Dynamic space causes the fundamental forces which are the inverse square law force, the centrifugal force, and the Coriolis force. Positive charge is the pressure that is associated with an aether source, whereas negative charge is the tension that is associated with an aether sink. Positrons are sources and electrons are sinks. This means that electrons will attract each other. In the 1937 Encyclopaedia Britannica article on electricity, in a section discussing the views of Benjamin Franklin (1706-1790), it says “ - - - *He supposed therefore that two vitreously electrified bodies would repel each other and that a vitreously electrified body would attract a resinously electrified body but he did not expect two resinously electrified bodies to repel each other- - -*”. Franklin of course did not understand the distinction between resinous charge and negative charge. This distinction will be explained in section V below.

Positively charged particles are usually shielded by negatively charged particles. In the 1937 Encyclopaedia Britannica article on electricity it says “*Aepinus (1724-1802) also suggested that the attractive forces between two uncharged bodies might be very slightly greater than the repulsive forces and that this difference might be the cause of gravitation.*” It is this imbalance which causes the electron to be attracted to the positron. The electron consumes aether at a slightly greater rate than the positron emits it. This imbalance is made up for by gravity (vitreous aether) flowing in from beyond. Centrifugal force is the key to shifting the balance away from gravity to positive charge. We can then extrapolate centrifugal force to the situation that arises between two mutually adjacent rotating electron-positron dipoles. These are Maxwell's vortices and they are a vital source of both repulsion and attraction in electromagnetism and electrostatics.

The aether in its pure state is not the carrier of electromagnetic radiation. It is a very common mistake amongst supporters of aether theory to render the aether into the dual role of being both the cause of gravity and the carrier of light. We need the electron-positron dipoles, which are

dielectric vortices in the aether, in order to explain electromagnetic radiation.

The Electric Sea

III. The electric sea is a dense sea of rotating electron-positron dipoles. These dipoles each consist of an electron and a positron in mutual circular orbit. Since an electron constitutes an aether sink, and a positron constitutes an aether source, then an electron-positron dipole will constitute an aether vortex. These vortices, with diameters in the order of picometres, will mutually align along their rotation axes giving rise to a dense electric sea that is permeated with double helix magnetic lines of force as shown in figure 1 below,

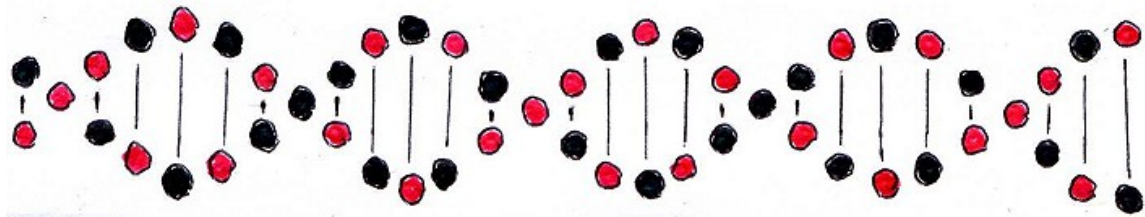


Figure 1. A single magnetic line of force. The tension along the rotation axis is caused by the irrotational force of attraction acting between the positrons and the electrons in the direction of the rotation axis.

The Electric Sea is the medium for the propagation of light and all electromagnetic phenomena. Electromagnetic induction and electromagnetic radiation are based on the principle that the electron-positron vortices will angularly accelerate like flywheels when an electric current linearly accelerates in the vicinity, and that the sea of vortices will induce a Coriolis force on moving particles. Magnetic repulsion is based on the principle that the magnetic field lines will mutually repel each other laterally, due to centrifugal force acting in the equatorial plane of the electron-positron dipoles. Magnetic attraction is based on the principle that an irrotational inverse square law force between electrons and positrons will cause a tension along the axes of magnetic field lines.

Electric Current and Electric Charge

IV. Electric current is a pressurized flow of aether, and the associated electric charge is simply a measure of the aether pressure. There is no other way in which we can account for the charge that accumulates on cross country electric power cables, or for how high voltages with low associated currents can be dangerous. We cannot account for this accumulated charge on the basis of a concentration of electrons inside the wire, because that would mean that the source of the accumulated charge would have to be inside the return limb of the circuit. It would be like having the household water system supplied from the external drain pipe. Electric charge is something that is supplied into an electric circuit from outside, either from a battery or from an electromagnetic generator. That something, which is in fact the vitreous aether, will not return to the power source again if it is converted into heat or light on its journey around the circuit. We should hence expect electric current to become more and more rarefied as it moves along the return limb of a circuit.

Strong sink particles will consume aether at a faster rate than the aether is being injected into the circuit. As such, they will move towards the source. Weak sink particles will ride along with the flow, and source particles will be repelled from the source. If the free electric particles in a conducting material constitute electron-positron dipoles, these will be weakly charged negatively and they will move with the aether flow. If however, the circuit is broken and the electron-positron dipoles are not free to undergo a net translational flow inside the electric wire, the aether flow will cause the electrons (strong sinks) to want to go in one direction and the positrons (strong sources) to want to go in the opposite direction. The dipoles will then become linearly stretched (polarized) and centrifugal repulsion inside the dipoles will impede the flow of the aether, hence leading to a build up of pressure. This impedance effect is the basis of electric capacitance, and it is also the basis of what we will refer to as vitreous and resinous charge. Electric current is about an equilibrium of aether pressure inside and outside the circuit. The equilibrium is governed by barrier potential and leakage. The barrier potential is due to the relative elasticities (relative permittivities) inside and outside the wire of the circuit, because this relates to the relative absorption of aether pressure. In modern electronics there is absolutely no recognition of the existence of any electric fluid which could either leak or become pressurized. This makes it difficult for students to ascertain what exactly is happening at microscopic level. Equations are used which give us relationships within the context of particle dynamics, and these equations are applied to an 'electron gas'. They fail however to expose the hidden

hand of the vitreous aether that is driving the entire mechanism, this aether having been introduced from outside the circuit as like water coming from the reservoir into the household pipe network.

Gravity differs from electric current in the respect that gravity is a rarefied flow of vitreous aether that gives rise to a pull or a tension, whereas electric current is a pressurized flow of aether. A thundercloud is a 'gravity to electricity' capacitor and transducer.

Vitreous and Resinous Charge

V. In laboratory electrostatic experiments, two distinct kinds of electric charge have been identified, and in both cases, like charges mutually repel each other. In these situations, we cannot therefore be dealing purely with positive and negative charge. We must look to the linear polarization of the electric sea in order to establish the underlying mechanism for these other two kinds of charge. We must seek an explanation for aether pressure that hinges on fine-grained vorticity. Fine-grained vorticity causes centrifugal pressure. This aether pressure congests the aether sinks and widens the aether sources.

In the case of vitreous charge, aether is pumped into the body from a higher pressure source such as a battery, a generator, or another vitreously charged body in contact. This causes the microscopic sinks to become congested and the microscopic sources to open wider, leading to a positively charged body which linearly polarizes the electron-positron sea with a positive polarity. In the resinous case, aether is evacuated from the body leaving it in a rarefied state. This widens the sinks and congests the sources causing an increase in the aether inflow rate. This increased inflow rate increases the negative linear polarization in the surrounding electron-positron dipole sea.

It might seem as though there is no essential difference between positive charge and vitreous charge on the one hand, and negative charge and resinous charge on the other hand. But the difference is twofold. With both vitreous and resinous charge, the force effects are experienced through the fine-grained centrifugal repulsion and the Coulomb force in the linearly polarized electric sea. And in the case of resinous charge, the effect is strong enough for the centrifugal repulsion to override the large scale gravitational inflow effect. Hence two resinously charged objects

will repel each other, whereas two negatively charged objects attract each other. See 'Electrostatic Repulsion and Aether pressure' at,

<http://www.wbabin.net/science/tombe44.pdf>

Electric Induction

VI. A vitreously charged body will attract a resinously charged body. However, two vitreously charged bodies will mutually repel each other and two resinously charged bodies will mutually repel each other. Vitreous charge and resinous charge share certain important features in common. They both involve a pressurized region of finite extent around the charged body. This pressurized region comprises electron-positron dipoles in a stressed state of linear polarization. If we submerge a neutral object into the pressurized zone, it will have the same effect as when we submerge a cold object into a pot of boiling water. The submerged object will absorb energy from its surroundings. This can be seen by virtue of the boiling water calming down, or in the electric case by virtue of the gold leaf of an electroscope partially collapsing.

In the electric case, aether flows into the submerged neutral object in order to establish a new equilibrium. In doing so, charge is transferred and the submerged neutral object linearly polarizes in sympathy with the surrounding electron-positron sea. The linear polarization that is caused by the ongoing aether flow means that there exists a tension in the electron-positron sea. The electrostatic lines of force that connect what was the neutral object to the charged object are like stretched springs. As the aether flows through the electron-positron dipoles, these dipoles stretch. The tension is caused by the restorative Coulomb force and the centrifugal pressure inside the dipoles. This tension has the effect of causing a force of attraction between the two objects.

Consider a charged capacitor circuit that has been disconnected from its power source. One plate is vitreously charged and the other plate is resinously charged. If we keep the plates at a fixed distance apart, we will have an equilibrium situation in which a steady flow of aether will flow from the vitreous plate to the resinous plate. There will be a steady current flowing between the plates that sits on the border line between electric current and gravity. It will not be as strong as the pressurized electric current that comes from a power source. If we move the plates closer together or farther apart from each other, a new equilibrium will be

established which will result in a redistribution of the charge on each plate. Increasing the separation distance reduces the aether flow between the plates and hence results in a greater accumulation of charge on the plates. The charge on the plates is being generated by the aether inflow or outflow to or from the particles in the plates, the balance which has been established by the aether pressure or aether rarefaction. The pressure in the vitreous plate is lowest when it is closest to the resinous plate. Hence when we attach the power source again, the capacity to absorb more aether pressure will be greater for lesser separation distances.

The Electrosphere

VII. We must now consider how the pressurized region around a vitreously charged or a resinously charged body will interact with the prevailing external gravitational field and with other electrically charged bodies. These charged bodies will still be under the full influence of the prevailing gravitational field. The gravitational field lines of the prevailing gravitational field will flow around these charged bodies making a similar pattern to that which we see with the Sun's gravitational field lines flowing around the Earth's gravitational field lines and giving rise to the characteristic shape of the magnetosphere with its long tail. A resinously charged body will have an electrosphere with a long tail which points away from the large gravitational body. A vitreously charged body will have an electrosphere with long tail which joins into the gravitational body. The latter is the situation which occurs when field lines join directly between two unlike charges.

All everyday objects are negatively charged. If they are not also vitreously charged or resinously charged, then we say that they are neutral, or gravitationally charged. As discussed above, a neutral body will be attracted to either a resinously charged body or a vitreously charged body. If the neutral body goes inside the electrosphere of the vitreously or resinously charged body, the attraction will be electrostatic in nature. The attraction of a resinously charged body to a larger neutral body will be a gravitational attraction. The attraction of a vitreously charged body to a larger neutral body will be a combination of an electrostatic attraction pulling, and a gravitational inflow coming from behind.

When a resinously charged body is brought close to a vitreously charged body, the opposite polarities in the surrounding electron-positron sea will

result in the polarization field lines joining directly between the two bodies. The stretched spring effect described above along with a net flow of aether from the vitreously charged body to the resinously charged body will result in the two bodies being pulled together.

When two vitreously charged bodies or two resinously charged bodies are brought close together, their surrounding polarization field lines will spread outwards from each other and the centrifugal pressure acting laterally between the adjacent field lines will cause the two bodies to repel each other.

If it were possible to introduce positive charge into a large scale situation, the outflowing aether would have a polarizing effect on the electron-positron dipoles that fill the surrounding space. The behaviour would be similar in some respects to that of vitreous charge, except that the effect would be much stronger. Two positive charges in the electric sea would mutually repel. A positively charged object and a vitreously charged object would mutually repel. The question then arises as to how a positively charged object would react to the presence of a resinously charged object or a neutral object. Unless the positively charged object were very weak, it is almost certain that the outflowing aether from the positive object would wash the resinously charged object or the neutral object away, and that we would have a state of mutual repulsion.