Archimedes' Principle in the Electric Sea

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Abstract. We examine the cases in which neutral objects experience a force of attraction when they are placed in either a magnetic field or an electrostatic field. It is concluded that the force of attraction in both cases is due to the irrotational forces that are acting on the picoscopic scale between the electrons and positrons of the electric sea. The electric sea is a dense sea of rotating electron-positron dipoles. Magnetic lines of force follow the rotation axes of these dipoles whereas electrostatic lines of force follow the direction of linear polarization. Magnetic lines of force will constitute helical springs in which the tension is due to the force of attraction between the electrons and positrons, which will be arranged in a double helix fashion around their mutual rotation axes. Electrostatic lines of force will constitute picoscopic stretched springs in which the restoring force arises from a combination of the inverse square law attraction force and centrifugal repulsion pressure.

When a neutral body is immersed in such a pressurized region, it will magnetize or polarize in sympathy. A higher concentration of field lines passing through the immersed neutral body will invoke Archimedes' principle and the body will be attracted towards the region of greater magnetic or electric intensity.

In the diamagnetic case, the concentration of field lines passing through the neutral body will be less than in the surrounding space and so the body will be displaced away from the region of greater magnetic intensity.

The Hydrodynamical Theory of Magnetism

I. In part I of his 1861 paper 'On Physical Lines of Force',

http://vacuum-physics.com/Maxwell/maxwell_oplf.pdf

James Clerk-Maxwell modelled the magnetic field hydrodynamically. Just like Bernoulli, he assumed the existence of a sea of tiny vortices pressing against each other due to centrifugal expansion pressure. His hydrodynamical analysis leads to Eq. (5) which contains the resulting components of magnetic force. The centrifugal component appears as the second term on the right hand side. In fact, the terms of Eq. (5) correspond exactly to the terms of the Lorentz force along with this additional centrifugal repulsive force term. The third and fourth terms on the right hand side of Eq. (5) correspond to the Coriolis **v**X**B** component of the Lorentz force. The full Lorentz force with the missing centrifugal term included is shown here,

$$d\mathbf{A}/dt = \text{grad}\psi + \text{grad}\,(\mathbf{A}.\mathbf{v}) - \mathbf{v}\mathrm{X}\mathbf{B} + \partial\mathbf{A}/\partial t_{\mathbf{(rotational)}} \qquad \mathbf{(1)}$$

Equation **(1)** can be derived from equation (58) in Maxwell's 1861 paper simply by expanding the left hand side into local and convective terms, and substituting the electrostatic term gradψ in place of the irrotational component of ∂**A**/∂t. This was demonstrated in section **III** of 'Gravitation and the Gyroscopic Force' at,

http://www.wbabin.net/science/tombe5.pdf

where **A** represents aether field momentum and where **B** satisfies the vorticity equation curl **A** = **B**.

The **A**.**v** term on the right hand side of equation **(1)** clearly corresponds to the second term on the right hand side of Maxwell's equation (5) since both of these quantities are dimensionally consistent, and since both involve the square of velocity. Maxwell concluded that the centrifugal force term in his equation (5) was responsible for both paramagnetic attraction and diamagnetic repulsion.

The Double Helix Theory of the Magnetic Field

II. Maxwell related the density of his sea of molecular vortices to the quantity which we nowadays call the magnetic permeability. He concluded that an unmagnetized body would either be attracted or repelled from a magnet depending upon whether its permeability was greater or less than that of the surrounding medium.

It has been suggested in 'The Double Helix Theory of the Magnetic Field',

http://www.wbabin.net/science/tombe.pdf

that Maxwell's molecular vortices are more accurately represented by rotating electron-positron dipoles such that the vortex sea is in effect an electric sea of pairs of mutually orbiting electrons and positrons bonded together in a double helix fashion and such that the axes of these rotating dipoles represent fine grain angular momentum and trace out solenoidal magnetic lines of force. See figure 1 below,

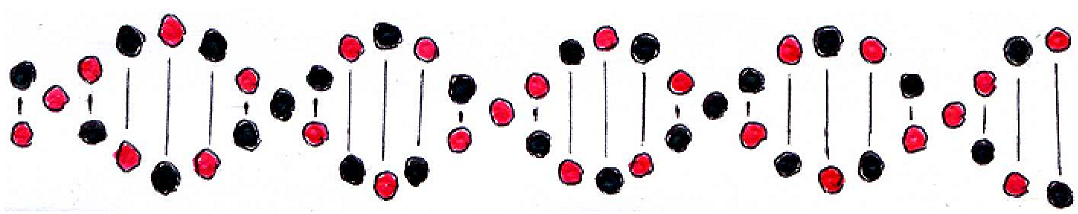

Figure 1. A single magnetic line of force. A tension runs along the rotation axis due to the force of attraction which exists between electrons and positrons. The rotation axial vector represents the magnetic field strength H. Centrifugal force causes a mutual repulsion between adjacent magnetic lines of force.

The Magnetic Archimedes' Principle

III. When unmagnetized materials are submerged in an inhomogeneous magnetic field they are attracted or repelled from the source magnet depending on their magnetic permeability. Magnetic permeability is a measure of the density of the electron-positron sea that permeates throughout the material. If the magnetic permeability inside the immersed material is less than the permeability of the electric sea outside it, then we will have a diamagnetic situation and the magnetic lines of force will be rarefied inside the immersed material as compared to outside it. In the diamagnetic situation, the body will move away from the region of greater magnetic intensity as like a cork rising to the top of a tank of water. It will be squeezed away by centrifugal pressure acting laterally in the magnetic lines of force.

If the magnetic permeability inside the immersed material is greater than that of the electric sea outside it, then we will have a paramagnetic situation, and the magnetic lines of force will be more concentrated inside the immersed material than outside it. In the paramagnetic scenario, the body will move towards the region of greater magnetic intensity as like a stone sinking to the bottom of a tank of water. This would appear to be Archimedes' principle operating in the electric sea. However since we are dealing with a force of attraction in the paramagnetic scenario, this would suggest that we are not dealing exclusively with the centrifugal repulsive mechanism. We are more likely to be dealing with a fine-grain centrifugal force of repulsion that works in tandem with a fine-grain Coulomb force of attraction. The attractive Coulomb force will be operating along the axes of the double helices that comprise the magnetic lines of force. The electrons in the double helix lines of force will attract the positrons that are above and below them along the axial direction.

The magnetic density/permeability of the submerged material as compared with the background magnetic density will determine whether the centrifugal repulsion or the Coulomb attraction will dominate. In the diamagnetic case, the lines of force will be less concentrated inside the material than outside. The Coulomb force operates along the lines of force, and so in the diamagnetic case, the centrifugal repulsion that acts at right angles to the lines of force will dominate and push the immersed material away from the region of greater magnetic intensity. In the paramagnetic case, the lines of force will be more concentrated inside the material than outside, and so the Coulomb tension along the lines of force will dominate and pull the immersed material towards the region of greater magnetic intensity.