

The Expansion Chamber Theory of the Magnetic Field

(An Aetherdynamical Approach to Electric Current)

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Abstract. A battery is a source of energy. As such it contains pressurized aether and it will weigh marginally less when it has expired. An electric circuit acts like a pipe. When a battery is connected to a circuit, aether is released from the battery in a controlled fashion and it accelerates linearly through the circuit causing linear acceleration of the charge carriers within the wire. The pressure in the system will cause the aether to leak sideways from the wire and expand into the space beyond, giving rise to a magnetic field.

Bernoulli, Maxwell and Tesla all believed that space/aether is rendered into tiny whirlpools. The magnetic field will now be explained in terms of these tiny aether whirlpools.

The Irrotational Effect

The battery will pump aether around the circuit. This will be an irrotational flow arising from the Coulomb force and the signal transmission speed will

remain unknown. The linear acceleration of the aether will cause the charge carriers to accelerate.

The Rotational Effect

The linear motion of the charge carriers will induce a Coriolis force that will cause the axes of the tiny vortices in the surrounding space to align into solenoidal rings around the circuit wire and beyond.

The tiny vortices that are closest in proximity will now sit on the circuit wire like wheels. The aether pressure in the wire will leak sideways into these vortices, and in conjunction with the tangential acceleration of the moving charge carriers, an angular acceleration will be induced in the vortices causing them to spin faster. The vortices will hence obtain more aether and more rotational kinetic energy.

This fine-grain rotational kinetic energy is of course the magnetic field which acts like an expansion chamber for the aether that drives the electric current. As the magnetic field rises, electromagnetic radiation will be emitted outwards perpendicularly from the circuit wire. This EM radiation can be directed to and discharged into a secondary circuit as is the case with radio antennae and AC transformers.

The induced magnetic field will increase the impedance of the circuit due to the phenomenon known as 'Back EMF'. In the DC circuit, this increase of impedance continues until a steady state situation is reached.

When the battery is disconnected in the steady state scenario, the pressure in the system will be reduced and the excess aether in the surrounding vortices will flow back into the wire again giving the charge carriers a final surge forwards. In this situation, the vortices are behaving like flywheels.

Electric current and magnetic field are mutually inseparable phenomena. They are linked together by fine-grain tangential forces through Ampère's Circuital Law. These tangential forces are of course the Coriolis force which aligns the vortices solenoidally and the angular force $-\partial\mathbf{A}/\partial t$ which occurs in the dynamic state. In part I of his 1861 paper 'On Physical Lines of Force',

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

Maxwell used the Coriolis force in equation (5) to derive Ampère's Circuital Law at equation (9).

Electric current plays a crucial role in establishing the rate at which aether flows into or out of the magnetic field expansion chamber. We might say that electric current controls the valve mechanism of the magnetic field expansion chamber. If we cut the electric circuit, the magnetic field expansion chamber will burst and release all its energy at once leading to a very high pressure/high voltage situation which results in sparks flying.

The Capacitor Circuit

From previous papers such as 'The Link between Electric Current and Magnetic Field' at,

<http://www.wbabin.net/science/tombe7.pdf>

we learned that the tiny aether vortices are comprised of rotating electron-positron dipoles in which the electron is an aether sink and the positron is an aether source.

If we now introduce a capacitor into a circuit, the aether flow will linearly stretch these dipoles in the space between the capacitor plates. When they are fully stretched, the current will be blocked from flowing and the magnetic field will collapse. As the current collapses, the aether that flows out of the dipoles in the magnetic field will now flow into the dipoles between the capacitor plates. The stored energy in the circuit now takes on the form of a linear stretching of the dipoles between the plates of the capacitor.

This kind of linear stored energy has the effect of pushing the current back again in the opposite direction when the power source is removed.