

# **Cathode Rays, Gravity, and Electromagnetic Radiation**

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**Abstract.** Cathode rays, gravity, and electromagnetic radiation are all manifestations of pure aether flow. The substance of the aether itself can never be explained, because the entire language of physics is built upon the effects of the aether. We can nevertheless deduce that the aether exists by the fact that we can model the forces of nature hydrodynamically using the concept of space being dynamical, compressible, and stretchable. We will call this dynamic space the 'aether'. By extrapolation we can then further deduce that cathode rays, gravity, and electromagnetic radiation necessarily involve a net flow of this dynamical space. We will now take a closer look at each of these three manifestations of pure aether flow.

## **Cathode Rays**

**I.** Cathode rays and electric current are essentially the same thing. They are pure pressurized aether flow. The term 'cathode ray' is used when the electric current jumps the gap in an electric circuit. It is believed nowadays that electric current, and hence cathode rays, are a stream of charged particles. In the case of cathode rays, these are believed specifically to be electrons. This uninformed belief follows because the aether flow often drives a stream of charged particles along with it. This particle flow is however only a secondary effect of the primary aether flow. Consider a sealed box containing particles. The classical view is that space is rigid, and that the only variable in the box can be the motion of the particles relative to space.

However, under the dynamic aether concept, the space itself can also move around inside the box, hence introducing an additional variable. Furthermore, we can increase the pressure in the box by concentrating more space into the box, without either changing the number of particles in the box or the speed of the particles. In an electric circuit, we can increase the aether pressure in a wire without altering the particle density in the wire. This pressure increase constitutes an increase in the electric charge in the wire. The most important factor in regulating the leakage of aether pressure from an electric wire is the electron-positron sea, which is all pervasive both inside and outside the wire. This electric sea is in fact the aether itself, rendered into a sea of tiny vortices. These vortices each contain both a sink and a source, and they mutually align solenoidally around an electric current in a double helix fashion. See 'The Double Helix Theory of the Magnetic Field' at,

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

It is the centrifugal pressure in the equatorial plane of the solenoidally aligned electric sea which regulates the aether leakage from the electric current. Ampère's circuital law follows from the Coriolis force. This can be seen from the third and fourth parts of the right hand side of equation (5) in Maxwell's 1861 paper 'On Physical Lines of Force'. He uses these Coriolis force terms to derive Ampère's circuital law at equation (9). And he does so without any involvement of charge or charged particles. See,

[http://vacuum-physics.com/Maxwell/maxwell\\_oplf.pdf](http://vacuum-physics.com/Maxwell/maxwell_oplf.pdf)

When an electric circuit is broken, the aether pressure will build up in the metal. Some aether will also leak across the gap, causing linear polarization of the electron-positron dipoles in the gap. This linear polarization will cause a back EMF which will result in an equilibrium. If the pressure (voltage) is increased beyond a certain threshold, the pressurized aether will start to flow around the circuit, bringing the electron-positron dipoles with it. Hence the cathode rays crossing the gap will be accompanied by a stream of electron-positron dipoles. A DC electric circuit will have a linear polarization wave of aether flowing back and forth in the space enclosed by the wire. This will cause a cyclical variation in the electric current's pressure. This can explain why cathode rays can be diffracted like waves. The alternating pressure pulse in the DC current will lead to constructive and destructive interference when cathode rays enter a diffraction grating.

## Gravity

**II.** Gravity is a rarefied flow of aether. It is a large scale radial inflow which might be described as a negative electric current. As the rarefied aether flows radially inwards through the electron-positron dipoles of the electric sea, it linearly polarizes them. But the electron-positron dipoles themselves will not flow inwards with the aether. They will be blocked from flowing inwards by centrifugal pressure in the magnetic lines of force. If there is no local magnetic field, there will still be a solenoidal alignment of the electron-positron dipoles in connection with the magnetic field of some other source. Just like the atmosphere, the electron-positron sea will not collapse into a planet. It will be entrained with the planet's orbital motion up to the line where jurisdiction is handed over to the gravitational field of some other planetary object or star. This explains the 1887 Michelson-Morley experiment.

## Electromagnetic Radiation

**III.** Electromagnetic radiation in the electron-positron sea is a tangential effect which originates at the side of an electric current. This tangential effect makes the rotating electron-positron dipoles spin faster. The aether then angularly accelerates from one rotating dipole to the next. This might be roughly compared with a straight row of fairground roundabouts. A person jumps off a passing truck and lands tangentially on the first roundabout. Their momentum causes them to rotate round to the opposite side in a clockwise direction. They then jump across to the second roundabout and their momentum causes them to rotate anti-clockwise on the second roundabout. When they have rotated to the far side of the second roundabout, they jump across to the third roundabout and the cycle repeats all the way along the row. We will have a situation that involves a net translational motion of an object, albeit that the motion is roughly of a sinusoidal nature which could be described by a wave equation. This analogy with electromagnetic radiation is not perfect however, because in electromagnetic radiation, all the vortices will be rotating in the same direction and we need to involve the elasticity of the aether in the inter-vortex regions. Another crude analogy to electromagnetic radiation would involve a straight row of roundabouts that are already all being powered to

rotate clockwise. Each time the person jumped from one roundabout to the next, they would be made to undergo a semi-circular path to the next roundabout, always in the clockwise direction. In this case, the action of the person jumping would produce a reaction which would act as an impedance to the angular acceleration of the roundabout which the person jumped from, and it would bolster the angular velocity of the roundabout which the person landed on. These analogies illustrate how even though electromagnetic radiation appears as a wave in the electron-positron sea by virtue of it constituting a propagation of angular acceleration, that this can also constitute a net coherent and translational flow of mass.

Let us now take a closer look at the actual electromagnetic wave propagation mechanism. When an electric current flows, the Coriolis force makes the rotating electron-positron dipole axes align solenoidally in concentric rings around the current. This effect is expressed by Ampère's circuital law. The first layer of electron-positron dipoles immediately to the side of the electric current will sit on the current like wheels on a caterpillar track. They will not however spin in the direction that might be expected if the current were gripping them mechanically. They will spin in the opposite direction, hence maximizing the centrifugal repulsion between themselves and the electric current.

When the electric current increases, this will cause an increase in the aether vorticity in the space between the current and the first layer of electron-positron dipoles. The positive charge sources will then open wider and centrifugal aether pressure will flow into the gap. See 'The Cause of Centrifugal Force' at,

<http://www.wbabin.net/science/tombe43.pdf>

This will create a torque which will angularly accelerate the dipoles and also act as an impedance to the driving current. This angular acceleration will then cause an increase in the mutual centrifugal pressure between the first layer of dipoles and the second layer of dipoles further out, and so the effect will be propagated perpendicularly outwards from the current, through the electron-positron sea. The increased centrifugal pressure between two dipoles along the line of propagation will act so as to create a mutual torque, which will angularly accelerate the dipole in front and angularly decelerate the dipole behind. This means that the propagation mechanism will be concentrated on one side of the row of dipoles along the direction of

propagation, and the aether will flow in a motion which describes a series of semi-circles. As the dipoles behind the moving pulse of aether are decelerating, the electron sinks will open wider and the positron sources will tighten up. Hence some of the aether that was generated from the positron sources when those dipoles were angularly accelerating, will be consumed by the electrons of those those dipoles.

Although there is a coherent flow of aether all the way from the stars to the Earth, this aether compresses and rarefies as it sinks and rises in and out of the electrons and the positrons. It is therefore impossible for us to know if the aether that leaves a star is the exact same aether that arrives on the surface of the Earth. We cannot know if the aether which disappears down through the electrons in the dipoles is the same aether that emerges from the neighbouring positrons. And to a certain extent this same argument also applies to gravity and cathode rays as the aether flows through the linearly polarized electron-positron sea.

Light does nevertheless have a ballistic dimension to it. It is a coherent net flow of centrifugal aether pressure which gives rise to radiation pressure. Light is usually emitted in pulses from a cyclic source, but this frequency is arbitrary and should not be confused with the natural frequency of the electron-positron dipoles.