Re-Evaluating Lenz's Law: A Time Dilation Effect

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Abstract

Lenz's Law is considered to be one of the basic laws in electromagnetic induction. We have discovered errors in the explanation of the law, and suggest that the observed reduction in the rate at which a magnet falls inside a metal tube is not due to the induction of an opposing magnetic field, as previously believed. We propose that the reduced rate of the magnet's fall is caused by the separation of electron-positron pairs inside the atom that reduces the rate of time flow inside the pipe, manifesting to the outside observer as a slow-down in motion. This interpretation is supported by other observations on the effects of static magnetic fields on biological systems. Time appears to be a magnetic phenomenon, and our discovery opens the path to the development of devices that could accelerate time or slow it down as desired. Time-shifting devices will have a wide range of applications in human activities.

Introduction

In the field of electromagnetism, Lenz's Law states that an induced electric current flows in a direction that opposes the change that induces it.[1] Similarly, Faraday's Law states that any change in the magnetic environment of a wire/coil induces an electromotive force (EMF) in the wire. Circuit theory teaches that for current to flow, a circuit is required with an EMF driving the current. The current generates a magnetic field that counteracts the direction of its generating magnetic field. This is the explanation of Lenz's Law.

A popular demonstration of Lenz's Law involves a metal pipe (aluminum or copper) and a strong permanent magnet that is dropped down the pipe.[2] The phenomenon is observed that the magnet drops at a rate slower than expected assuming simple gravitational acceleration. The stronger the magnet and the more massive the metal pipe, the slower the rate of fall.[3] This phenomenon is further demonstrated by the very slow fall of an aluminum block inside a 1.5 Tesla MRI machine.[4] With sufficient magnetic field strength and metal mass, near or full levitation can be created.[4,5]

Discussion

When we analyze the copper pipe experiment more closely, it becomes clear that the pipe is merely a single piece of conductor and does not truly qualify as a "circuit" per se. Therefore, it is suggested that EMF is being induced only in close proximity to the falling magnet. However, the circular segment of the metal pipe is actually a short circuit in which the generated EMF should rapidly decay to zero. This leads to the collapse of both the induced current and the associated magnetic field that is supposed to be opposing the magnetic field of the falling magnet. The more massive the copper pipe, the more rapidly the "circuit" should short out for a given size magnet. As a result, the rate of descent of the magnet should increase in the direction of gravitational attraction, a prediction in contrast with observational evidence. The time-varying magnetic field and the induced EMF should also decrease when using a more massive copper pipe, in which the magnet falls more slowly. We would actually need a higher EMF and a higher induced current to slow the fall of the magnet. The levitation of a large diameter aluminum pipe between high-intensity magnets would be impossible as the floating pipe is nearly stationary.[5]

These observations suggest that the explanation for Lenz's Law is inadequate. Here, we propose an alternative description for this phenomenon based on our new atomic theory.[6] Briefly, we have proposed that the electron (and the positron) is the only true elementary particle, and that matter contains two opposite substructures, electron-positron (e-p) pairs that are the building blocks of all elementary particles. Inside the proton, the electron is paired with a positron in balanced orbits. The electron and the positron orbits point in opposite directions. The same principle applies to the atomic electron orbits that are also balanced orbits of e-p pairs.

In confirming this theory, we have outlined the similarity that exists in the geometric ratios of the electric wave and of e-p pairs.[6] This suggests that an e-p pair could produce the electric wave: in the bubble chamber track the electron curves out radially to a shorter distance than the positron from the point of origin[6]; therefore, the electron is more energetic, consequently masses exhibit a forward arrow of time. In other words, forward time is electronic while reverse time is positronic. This explains the physical basis of the observed direction of time flow, and allows us to define the positron as an electron moving backwards in time.

We propose that the dropping magnet in the Lenz's Law demonstration falls at a reduced rate inside the pipe because during its travel down the pipe its magnetic field splits up the e-p pairs in their atomic orbits. The positrons collecting inside the pipe cause a slowing of the rate of time flow relative to that of the observer. The result is observed as a slow-

motion event.

Simultaneously, electrons are collecting on the outside of the pipe, where the rate of time flow accelerates relative to the observer. The more massive the pipe the more positrons can be released and, as a result, the greater the slowing of the rate of time flow. Said another way, positrons reduce/reverse gravitational pull and slow down time. This agrees with our conclusions in a previous paper[6] where we proposed that reverse gravity is parallel to time. It should be possible to design simple experiments that can test this theory on rapidly growing biological organisms.

In fact, experimental data are available on the biological effects of static or low-frequency magnetic fields on various microorganisms. Dini and Abbro,[7] Zhang *et al*.,[8] Piatti *et al*.[9] and Stepanian *et al*.[10] have reported that microbial growth and biological processes are affected by low- to moderate-intensity magnetic fields. The effects include reducing growth rates (slowing down time?) or accelerating growth rates (speeding up time?). The opposing results are likely a function of experimental conditions.

Interestingly, a review of studies on magnetotherapy using low-intensity static or pulsed magnetic fields on humans and other mammals shows promise in accelerating the healing rates of various injuries.[11] The healing effects of magnets are being extensively explored by alternative medicine practitioners and adherents.[12] In our view, it is possible that the observed biological/healing effects are the result of a changing rate of time flow caused by the magnetic fields.

In conclusion, our reevaluation of Lenz's Law provides a new explanation for this well-established phenomenon. Moreover, this is the first time that an observed physical phenomenon points to the explanation that the rate of time flow is being manipulated, backed by circumstantial experimental data. We suggest that time is a magnetic phenomenon that can be modulated directly by appropriately designed magnetic fields. Our observation opens the path for the development of technologies that will accelerate or slow down time as desired. The potential applications of time-modulating equipment would be unlimited, spanning all-important aspects of human life including natural sciences, transportation, healthcare, food production and preservation and, ultimately, time travel.[6]

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About the Author
Peter Grandics has an MS in chemical engineering and a Ph.D. in biochemical engineering. He has worked in the fields of biomedical research and recently in physics focusing on new energy technologies. He intends to help find answers to the continuing mystery of alchemical references.

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