

Is Mutual Inductance Always Conserved?

Can the validation of Maxwell's four equations, particularly pertaining to magnetism, apply to a shorted set of mutual inductances which are related to the Golden Ratio?

Or is energy conservable, but the potentialities of electrical reactance, namely: capacitance, inductance, phase shifts and frequency, not conservable since they're not a manifestation of kinetic energy, but constitute a virtual set of potentialities?

I have discovered a mathematical relationship among a set of three interconnecting mutual inductances which do not conserve their energy over time if two of these mutual inductances possess a pairing of self-inductances and their relationships are formed by three criteria ...

1. The first mutual inductance of $MI(1)$ is the largest of the three. Its minimum value is the golden ratio $\left(\frac{\sqrt{5}-1}{2}\right)$ of approximately 62% magnetic coupling between a pair of large self-inductances and another pair of very small self-inductances. Let's assume that each large self-inductance (of its pair) is labeled and set to the value of $H(1)=1H$ and that each small self-inductance (of its pair) is $H(2)=2\mu H$. And let's also assume a pair of alternate magnetic coupling coefficients among all four coils is going to be exactly the golden ratio (for one option) versus exactly 70% (for the alternate option) for the purposes of this illustration.
2. Second mutual inductance: two options ...
 1. The second mutual inductance of $MI(2)$ magnetically couples the large pair of inductors $H(1)=1H$ to a fifth single self-inductance $H(3)=2\mu H$ of the same self-inductance as is each of the second pair of small self-inductances $H(2)=2\mu H$. This second magnetic coupling $MI(2)$ can be found by subtracting the first mutual inductance $MI(1)$ from unity and taking the square root $\sqrt{1-MI(1)}$. So, if the first magnetic coupling $MI(1)$ is 70%, then the second magnetic coupling $MI(2)$ is approximately 55%.
 2. In the alternative, if the first magnetic coupling is exactly the golden ratio, then the second magnetic coupling can be found by an equivalent method of calculation by squaring the golden ratio. So, $\sqrt{1-\left(\frac{\sqrt{5}-1}{2}\right)}=\left(\frac{\sqrt{5}-1}{2}\right)^2 \approx 38 \text{ per cent}$
3. Third mutual inductance, two options ...
 1. If the first magnetic coupling is exactly the golden ratio, then the third magnetic coupling can be found by taking the cube of the golden ratio $\left(\frac{\sqrt{5}-1}{2}\right)^3$. This is equivalent to subtracting two from the square root of five = $\sqrt{5}-2$.
 2. Otherwise, if the first magnetic coupling $MI(1)$ is greater than the golden ratio, then this third magnetic coupling $MI(3)$ must be tweaked by trial and error to discover its most efficient percentage of unity. So, if the first magnetic coupling $MI(1)$ is 70%, and the second coupling $MI(2)$ is approximately 55%, then the third coupling $MI(3)$ will be found by tweaking downwards the cube of the second magnetic coupling $MI(2)^3=MI(3)$ in order to achieve maximum efficiency at a value of approximately 26% (ppt) simulated in the circuit, whose example, is below.

The theoretical efficiency of this anomaly can be simulated in Micro-Cap 12¹ on a 64-bit computer which minimizes the likelihood of simulator round-off error to the point of unnoticeable obscurity.

And this simulated circuit has most of its nodes shorted out to emphasize its dependency upon mutual inductance and minimize its relevance to voltage drop. This poses a question to adherents of Conservation: *What is Going On, Here?*

A screenshot of its schematic is here ...

Nathan Stubblefield inspires me to short out all of the nodes (junctions) of this circuit's funky non-power supply to each other and feed all of these nodes a frequency of 1 Mega Hz from a sine wave generator carried by one micro-volt to initiate self-induced amplification via an over-reaction among whatever components are capable of this, namely: five of its inductors.

CC1, CC2, Stator and Rotor are copper coils. VC1 and VC2 are iron coils possessing 6x more resistance than the other coils. Transfer Coil is an aluminum coil. All five coils are approximately 25 AWG.

SineWaveGen = 1µV @ 1 Mega Hertz
DC 0 AC 1 0 Sin 0 1u 1meg 0 0 0

SHORTED POWER SUPPLY.

StatorRotor Stator Rotor .7

This demonstrates that overunity arises merely due to amassing a voltage overload on the 'Stator' coil of 10 Henrys, and 10 Ohms of series resistance, which slowly drags the voltage and current of everything else along as a consequence.

Two capacitors have been added to soak up the excessive production of voltage and prevent its sudden explosive increase! Each cap possesses 100 milli Ohms of ESR. This produces a ratio of volts to amps of 1/10nth V:I. This ratio occurs with the EV's of Tesla Motors and Sangulani Maxwell Chikumbutso.

#1

LumpedCoupling .7
VC1 VC2 CC1 CC2

#2

TransferCoupledToVC1
C.Coef. .55
Transfer VC1

TransferCoupledToVC2
C.Coef. .55
Transfer VC2

#3

TransferCoupledToCC2
C.Coef. .026
Transfer CC2

TransferCoupledToCC1
C.Coef. .026
Transfer CC1

Simplest overunity circuit you will ever see.

A screenshot of its output at 94 milli seconds, without any limit to its escalation towards the self-destruction of its hosting circuit, is here ...

https://commons.wikimedia.org/wiki/File:Simplest-overunity-circuit-you-will-ever-see_v4c_Tesla_Motors_input_requirements_at_94ms.png

Its simulation file is located here ...

http://vinyasi.info/mhoslaw/Parametric%20Transformers/2022/Nov/simplest-overunity-circuit-you-will-ever-see_v4c.cir

And another copy is here ...

<https://ufile.io/5tc2xv8w>

BTW, which choice of mutual couplings, be it the minimum coupling of the golden ratio for the first coupling of $MI(1)$, or anything greater than this, will be determined by the circuit to which it applies. In other words, one set of couplings may work in one circuit but not in any another. This concept is a broad generalization whose particular relationships of magnetic couplings may vary from one circuit to another.

I am ignorant of the viewpoint of Classical Physics.

¹ <http://www.spectrum-soft.com/index.shtm>