2

Can superconductivity be faked by using precise mathematics in a simulated circuit & specific materials in an actual circuit?

mathematical-modeling superconductivity

A type of electrical amplifier is proposed in which only magnetism and it's analogous current exists for the most part. There is no voltage and no wattage (to speak of) in which electricity has to noticeably exhibit Ohms Law. Once connections are made to an outside appliance, voltage appears, because none of the junctions in and around the load are shorted with each other nor with ground. But all of the nodes of the power supply section of the circuit are shorted with each other. So there are only two nodes in the power supply, the ground node on one terminal of the sine wave generator and the common node among all of the inductors on the other terminal of the sine wave generator.

Self shorting all of the nodes (in common with each other) eliminates the effectiveness of utilizing any diodes, capacitors, or spark gaps. Only inductors have any relevance in this type of circuit.

Since there is no electrical throughput except through the sine wave generator, mutual inductance has to be precisely tuned. And self inductance also has to be structured a certain way as shown below…

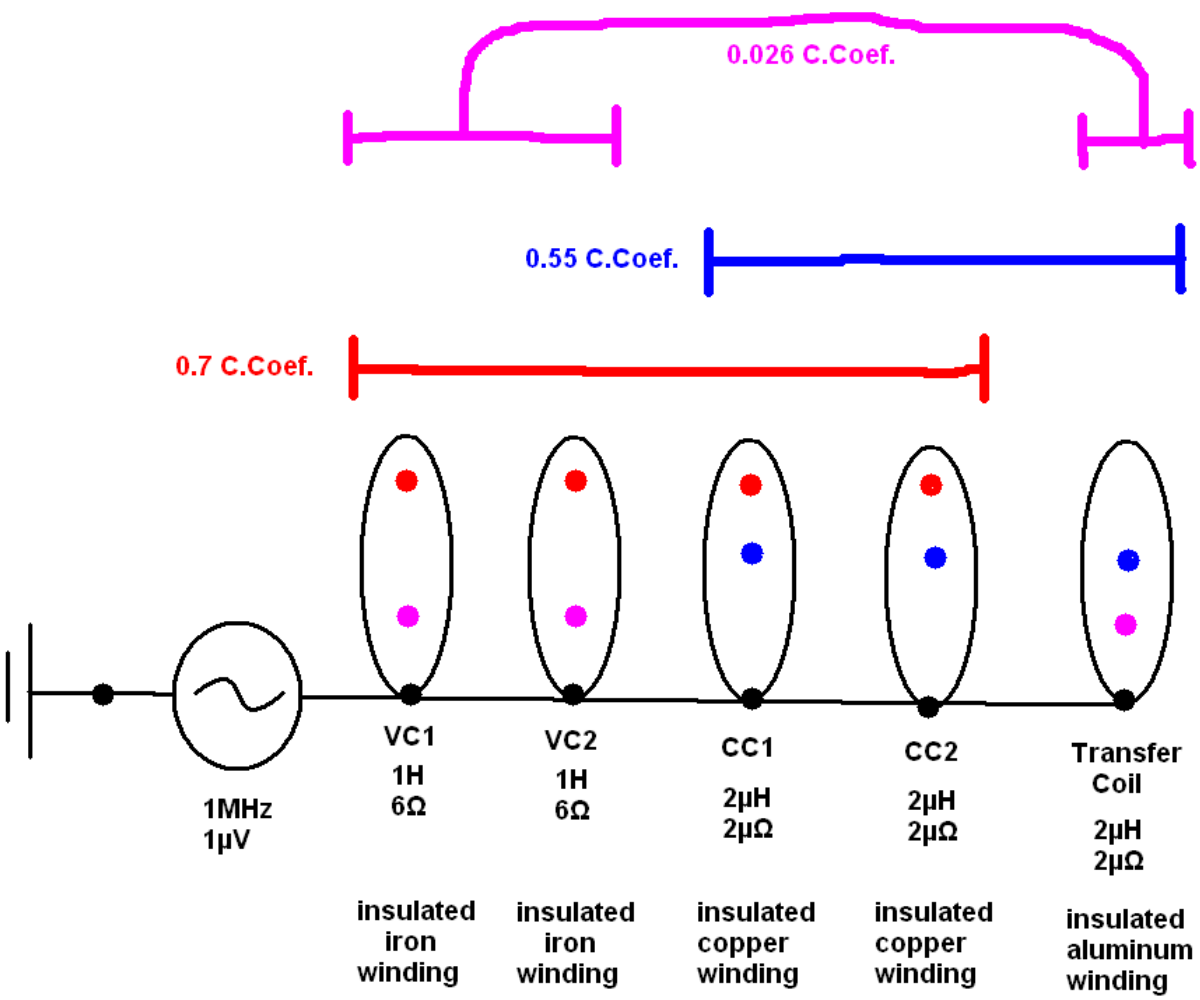
Given a pair of coils (#1), and another pair of coils (#2), and a single coil (#3), and the following magnetic couplings among them:

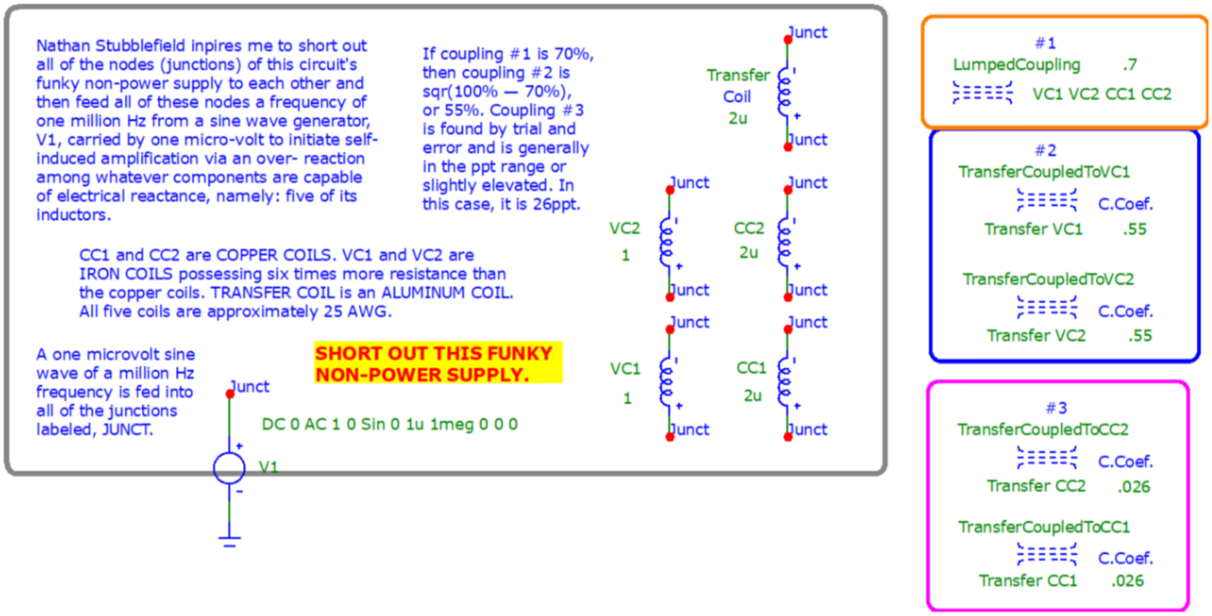
- Coupling #1 is between coils #1 and coils #2.
- Coupling #2 is between coils #1 and coil #3.
- Coupling #3 is between coils #2 and coil #3.
- Coupling #1 is greater than or equal to the golden ratio of 0.618… (e.g. 0.99).
- Coupling #2 is precisely the square root of the difference between unity and coupling #1: $\sqrt{(1 - 0.99)} = \sqrt{(0.01)} = 0.1$, or 10%
- Coupling #3 is precisely the cube of the difference between unity and coupling #1... ie, (1 - 0.99)^3 = (0.01)^3 = 0.000001, or 0.0001%.

What are the chances of effectively replicating super conductance (without altering temperature) by shorting out all of the nodes among all of these five coils and connect this common node to the output of a sine wave generator operating at 1 μV and a frequency of 1 MHz?

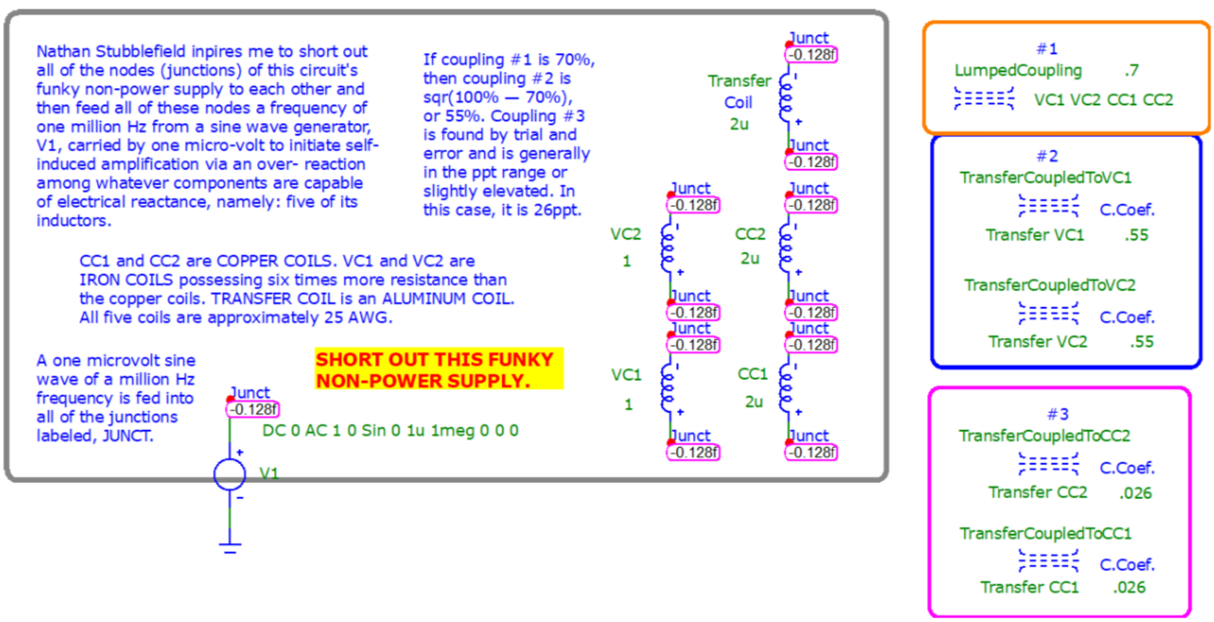
I am assuming that the simulator environment (of a Micro-Cap circuit from Spectrum-Soft) is both theoretical and logical to assume that anything is possible within that environment and limited to that environment with no guarantees outside of that environment making it highly theoretical - not necessarily probable, nor possible - in the concrete world, but only guaranteed in the world of the abstract mathematics involved.

In the physical world, it's conjectural to assume it's probability if coils #1 are made of iron, coils #2 are made of copper, and coil #3 is made of aluminum?

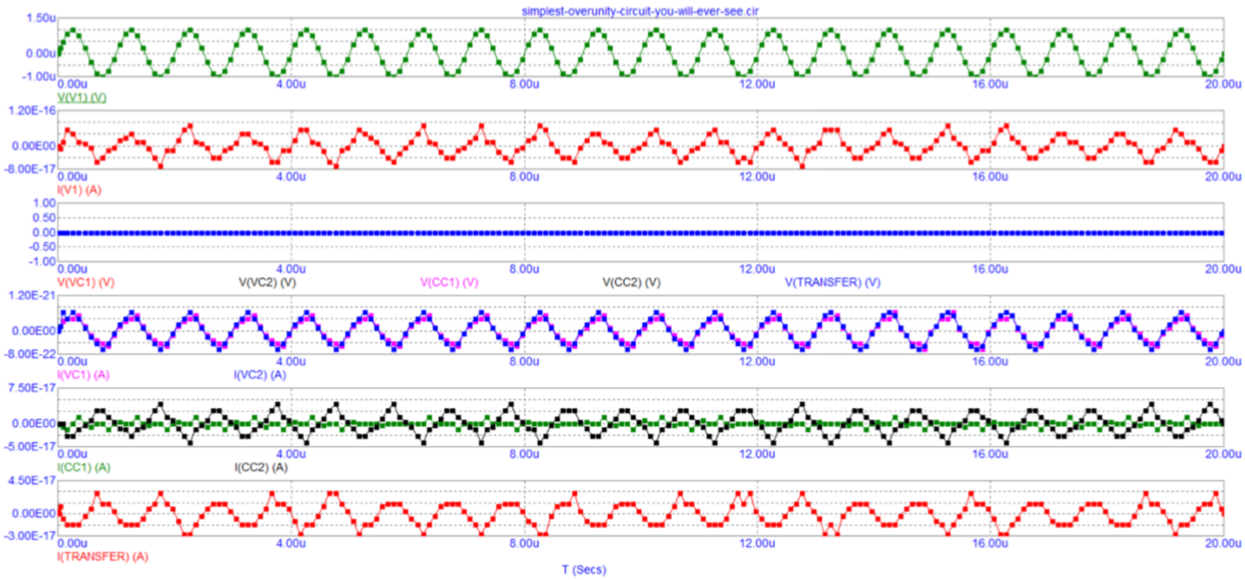




It's nodal voltages are...

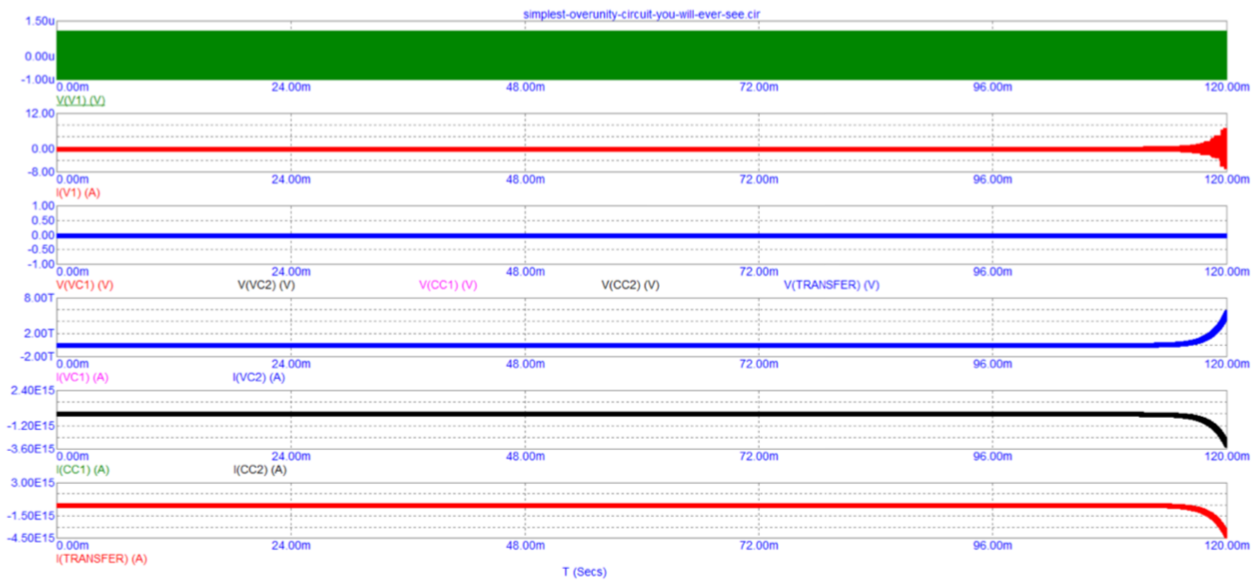


...versus its initial twenty micro-seconds...



Ten milli seconds...

And lastly, 120 milli seconds (my computer couldn't allow anything longer without problems)...



Since resistance merely governs voltage drop, any impedance of high resistance will foster our habitual tendency to solve a problem by increasing the voltage. This is known as the Ferranti Effect. On the other hand, a purely reactant impedance can, actually, overcome resistance and begin to exhibit characteristics analogous to superconductivity if the frequency of reactance is high enough to overcome resistance per unit time. Raising the frequency of a sine wave generator does not “cost” more energy. Nor does it defy physics’ conservation of energy. Yet, in this case, amplification of current occurs while voltage retains a zero status within the body of each inductor.

It is not the conservation of energy which is being defied, here. Instead, it is Michael Faraday’s Law of Induction which is given a restraint, a limitation, of jurisdiction. For, it is not always necessary to move a coil through a magnetic field in order to manifest current inside of that coil. Purely reactive impedance, devoid of resistive impedance, is a satisfactory replacement.

Frequency over time is equivalent to motion through space. Magnetic flux, or it’s analog, is rotating in both examples.

The amplitude of a voltage source is not the only option available for supplying an energy input. The frequency of a low voltage source is another, because frequency is a potential form of energy. This is why the conservation of energy has not been defied, because conservation includes both kinetic and potential forms of energy. And Michael Faraday’s Law of Induction has simply been expanded to include a more pervasive definition.

Share Edit Delete Flag

Vinyasi
21 • 2

asked
23 hours ago

edited
1 hour ago

Welcome to the site! I think we may need a bit more detail to address your question; it might just be outside my area, but I'm not quite sure I understand what is being asked. It looks like you are trying to include some context in the hyperlink, but this seems like some externally hosted document. It would probably be better to include the relevant information directly in your post so we can better determine what is being asked. – **Tyberius** ♦ 22 hours ago

@Tyberius Thank you. I corrected the text. – **Vinyasi** 22 hours ago Delete

Have you checked that your proposal satisfies energy conservation? And, have you already taken into account of the fact that one cannot make a zero-resistance induction coil using non-super-conducting material, therefore the inductors are not pure inductors but have a non-zero resistance? – **wzkchem5** 7 hours ago

@wzkchem5 With all due respect, energy conservation is not an absolute impediment to overcoming resistant impedance. In fact, overcoming a purely resistant impedance, by way of super cooling resistance, is not the only way to overcome resistant impedance. I added a paragraph after the screenshots to explain this. – **Vinyasi** 6 hours ago Delete

OK, as long as you claim that your proposal does not break energy conservation, that's fine. Then, I would suggest that you make one additional plot: the total amount of energy lost to the resistance (by integrating current*resistance w.r.t. time), plotted against time (sorry for my earlier oversight - you have already specified the resistances of the coils). If your proposal works, then the plot will be a flat line at zero. This is a more sensitive test than the numerical tests you have done, because a deviation from zero is much more obvious than a deviation from periodicity. – **wzkchem5** 1 hour ago

Add a comment

0 Answers

order by votes

Answer Your Question