The Negative Impedance Converter of William Jay Fogal's Nonlinear, Charged-Barrier Transistor but without the Linear Pumping of an OpAmp.

Saturday, 9th of May, 2026 – Vinyasi

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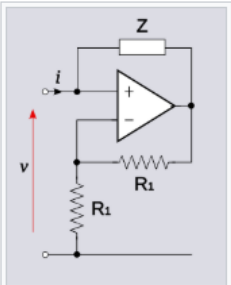
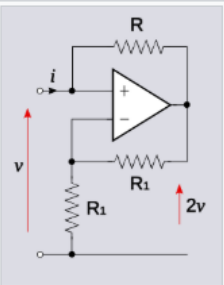
MAY 09, 2026

We may already be familiar with the concept of a negative impedance converter. Wikipedia enlightens us about its nature by giving us examples of circuits – all of which are composed of opamps which require a linear pump in order to operate them.



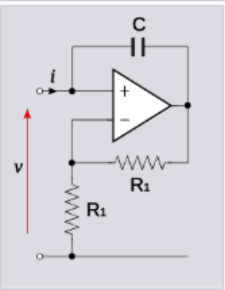
Negative impedance circuit

$$Z_{\text{in}} = \frac{v}{i} = -Z$$



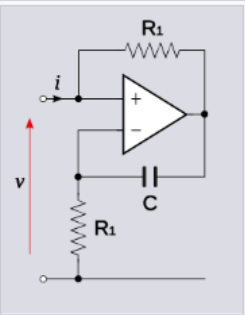
Negative resistance circuit

$$R_{\text{in}} = \frac{v}{i} = -R$$



Negative capacitance circuit

$$Z_{\text{in}} = \frac{v}{i} = \frac{j}{\omega C}$$



Negative inductance circuit

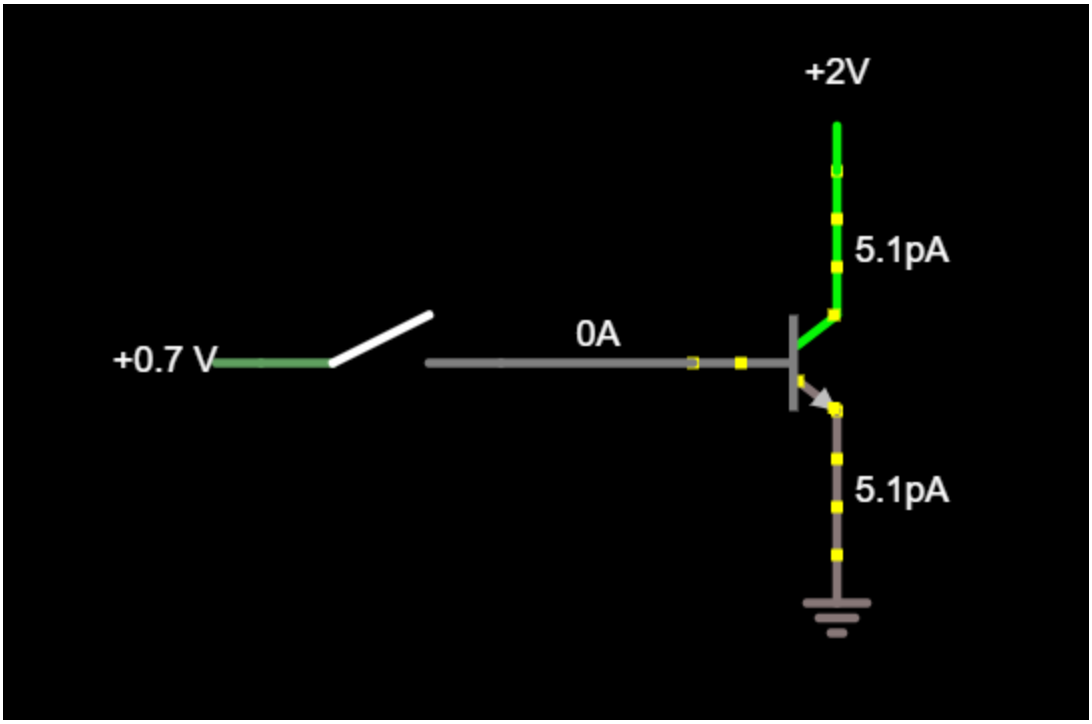
$$Z_{\text{in}} = \frac{v}{i} = -j\omega C R_1^2$$

But Bill Fogal's Charged-Barrier transistor does not make use of any external source of voltage difference, apart from its throughputs, since no opamp is invoked. Yet, he does rewire the transistor's terminals in an

awkward manner so as to invert the sign of the current *arriving* at its emitter junction towards the end of a simulated run in LTSpice.

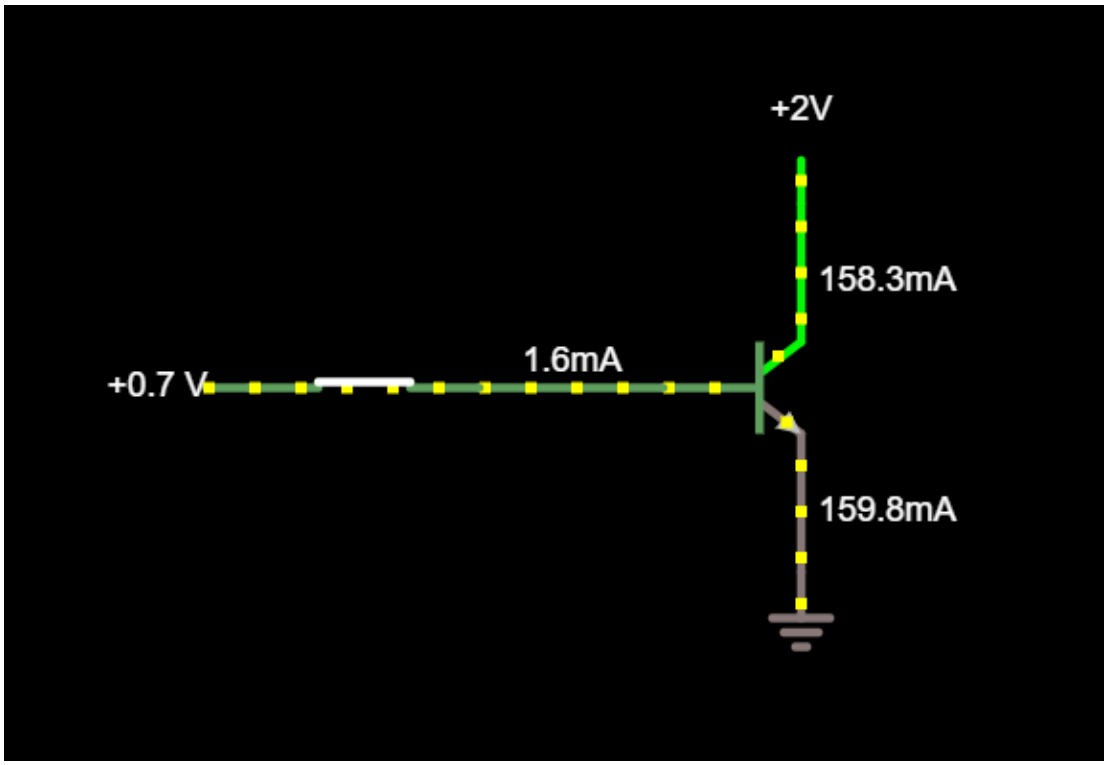
> *But, I'm getting ahead of myself!* 🙃

Normally, when we want to add the base current to the collector current to mathematically predict, with some level of accuracy, what the emitter current will be, then we should get a straightforward answer if we're not doing anything else *out of the ordinary* within the circuit which surrounds this transistor.



OPEN SWITCH: OFF

base current: 0A + collector current: 5.1pA = emitter current: 5.1pA



CLOSED SWITCH: ON

base current: 1.6mA + collector current: 158.3mA = ⤵

▤ = emitter current: 159.8mA + heat absorption: 0.9mA = total: 159.9mA

But, due to the generation of wattage – rather than its absorption – by the inductive and capacitive impedances of my replication of Bill Fogal's *Charge-Barrier Transistor*, I am able to calculate the absolute magnitude of the emitter current but with an opposing sign. This discloses to me the negative impedant behavior of the reactive elements which surround this type of transistor.

So, *what is this* specialized semi-conductor invented by a TV repairman?

Examining either of his two patents: US patent 5,196,809 and US patent 5,430,413, and focusing on merely the first figure from these two patents, namely: *Fig. 1* (prior art):

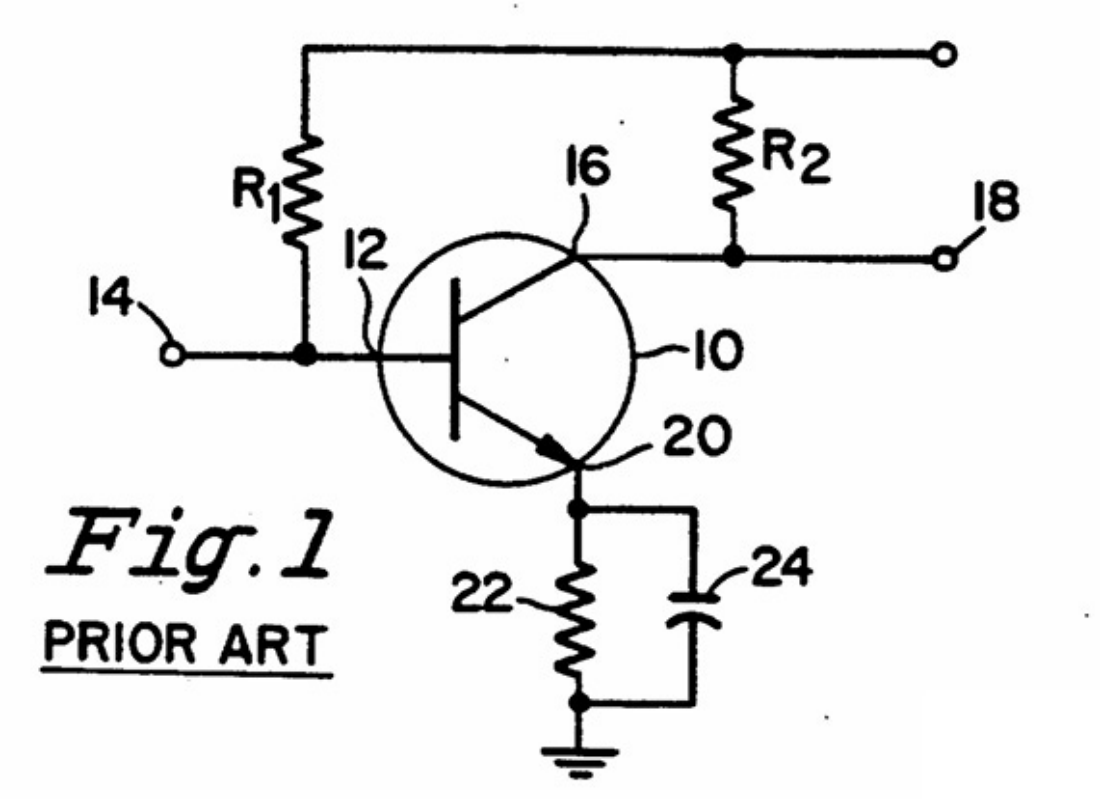
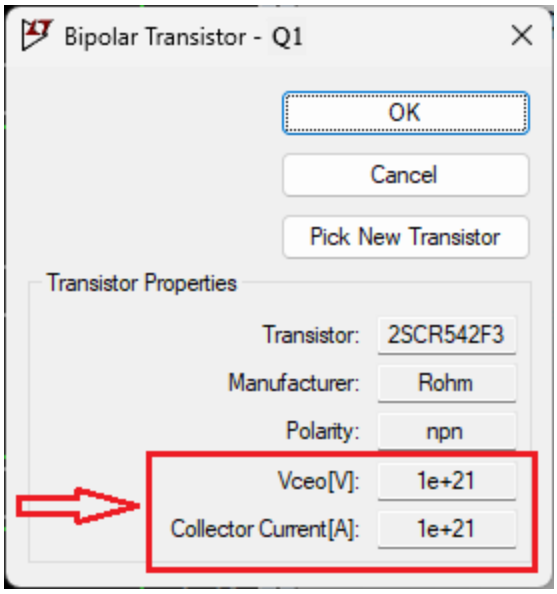


Fig. 1
PRIOR ART

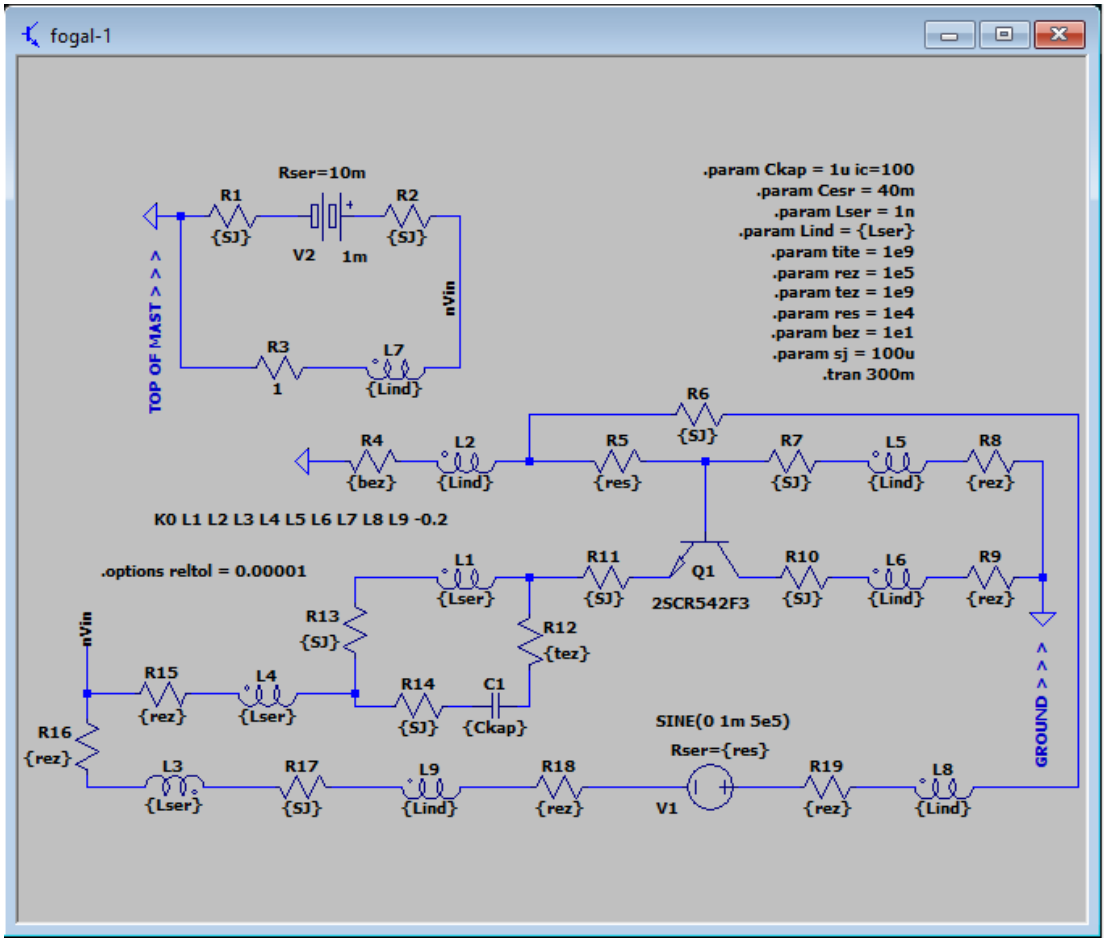
... we can deduce that something mysterious is taking place.

I don't know about you, but I find this diagram to be very unsatisfying. It must be due to the nature of the patenting process in which information is usually withheld, and false clues are normally inserted into the patent in order to lead us astray, whenever we are attempting to replicate the inventor's intentions on our own – independent of the inventor's royalty charges.

So, here's *my version* simulated in LTSpice (x64, v-24.1.19) which is *very satisfying* since it uses a middle power transistor made by Rohm:



... along with a few other modifications to Bill's *figure*, above:



This version (of mine) assumes there to be an imaginary mast (represented by its battery in the upper-left corner of this schematic, above) whose topmost ground is high enough in altitude to acquire a voltage difference of one millivolt when measured from the top of this mast to its grounded base (located in the mid-to-lower right-hand corner of this schematic).

> *If this mast is too short to readily create a ⚡voltage difference ⚡of such scant proportions, then make it taller and bleed the excess to an additional ground through a voltage division or a current division subcircuit.* ☺️

Don't be alarmed by the schematic's depiction of gigaohm resistances since they can be replaced by the use of tens of multiple sets of 100 megaohm resistors.

This replication has a capacitor of one microfarad of capacitance and 40 milliohms of equivalent series resistance. It doesn't seem to matter what the value of this capacitance is set to so long as it is included. Presumably, it stabilizes the overall reactance of this circuit.

All of its coils (in this example) are extremely small, rated at one nanohenry – although their inductances could be elevated for the convenience of their construction, and they are magnetically coupled together at whatever coupling coefficient you deem to be expedient for your purposes so long as you use cross-wiring (caduceus style) so as to *oppose the magnetic fields* of their mutual inductance.

In this example, I used a coupling of negative 20% (-0.2). A coupling of negative 10% took a ridiculous duration of simulated runtime to provoke the slightest hint of the escalation of power as if to suggest a logarithmic scale of diminished amplification exists below a coupling of 10%.

Yet, reducing their mutual inductance *appears to never interfere* with *their intrinsic tendency* for *this archetype of circuit elements* to induce the

negation of impedance.

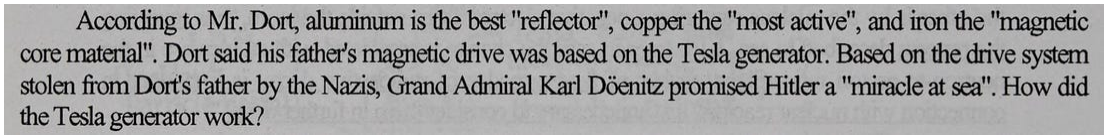
Again, none of these parameters for inductances and capacitance are mandatory – they should be chosen to be whatever is expedient for your purposes.

The frequency sine wave generator puts out one millivolt at 500k cps in this example. You may choose to use a different frequency so as to regulate the rapidity of outcome.

None of the voltage inputs are “conventional” in their magnitudes since that would deem this circuit to be a linear circuit with linear results. Instead, these inputs are low enough to encourage nonlinear results. THIS IS IMPORTANT. **IT IS THE FIRST RULE-OF-THUMB I EVER LEARNED FOR THE PRODUCTION OF OVERUNITY WITHIN A NONLINEAR CONTEXT OF OVER-REACTANCE.**

I used to call this situation of “circuit starvation” an ‘overly reactive’ or ‘over-reactive’ circuit until I learned that the correct terminology is “nonlinear”. I didn’t think that this earlier version of nomenclature was too odd since the translation of the term of: “reactance” into the Russian language (using an automated translation software) can sometimes yield a term which, when translated back into English is no longer indicative of reactance but, is (instead) considered to be “active”.

> *I learned this from William Lyne in his book, entitled: “Space Aliens from the Pentagon”.*


According to Mr. Dort, aluminum is the best "reflector", copper the "most active", and iron the "magnetic core material". Dort said his father's magnetic drive was based on the Tesla generator. Based on the drive system stolen from Dort's father by the Nazis, Grand Admiral Karl Döenitz promised Hitler a "miracle at sea". How did the Tesla generator work?

> *These terms are suggesting the three major themes of magnetism, namely: paramagnetism (aluminum’s reflectivity), diamagnetism (copper’s*

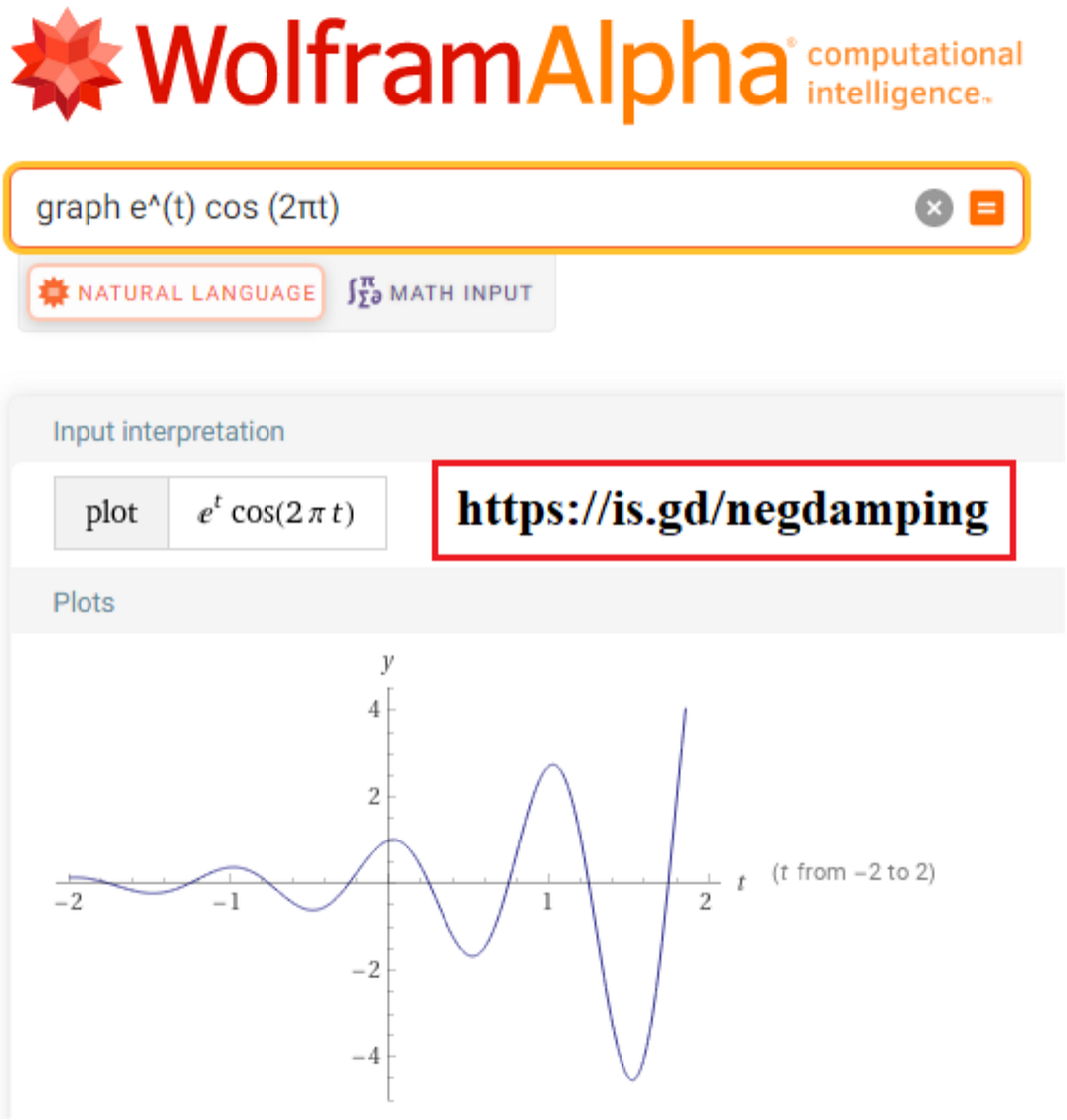
> *heightened activity), and ferromagnetism (iron's tendency for being used as magnetic core material).*
>
> *Thus, this suggests that we are not using copper in its best sense for transmission wiring since this substance encourages reactance and elevated voltages stemming from this accentuation.*
>
> *To be sure, Nathan Stubblefield (in his "battery" patent) used a combination of bare iron wire commingled with copper wire. The copper wire was sheathed with a cotton sleeve and probably soaked in a dielectric of some type, such as what was common in those days was a formula of: beeswax, pine rosin, and carnauba wax. Nikola Tesla preferred a ratio of: 5% carnauba wax blended with beeswax and pine rosin (according to Mark McKay).*

This is my stance on *scarce inputs feeding a nonlinear arrangement of reactive impedances* in which their reactance is no longer implying a resultant but is, instead, implying causation.

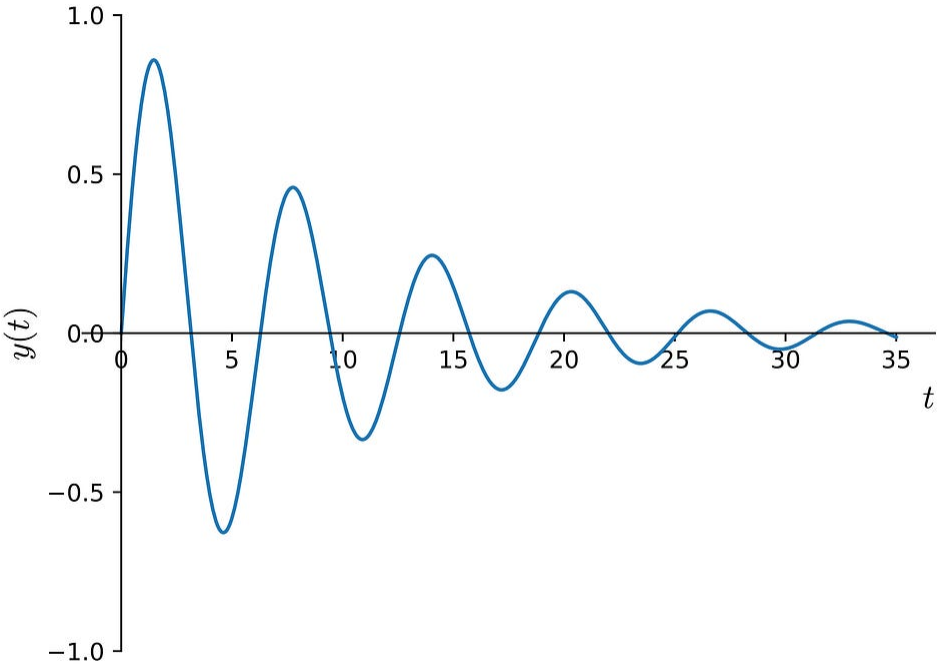
In other words, we have it backwards when we call these impedances by their qualifying term of "reactance" as if to imply that real power has a significance which is greater than what it actually possesses.

Sure, it's a prime mover. But that's only good for providing a commercial service which charges its clientele a monetary fee for the cost of using their energy. But, for "free energy" production, this won't do. Instead of a prime mover, this external source of real power – serving as an input – would be better if more accurately labeled as a "catalyst" so as to reduce its relevance relative to the reactances which are the heart and soul of reshaping this meager input into a dynamite finale.

What a concept! … That we could imagine a fantasy in which time runs backward:



... in order to justify the generation of power from *inside a circuit* as if to imply its negative damping as opposed to conventional damping:



… which follows a forward direction of the arrow of time defining well-known entropy.

So, if we want to uphold our accountability by including *all of the energy a circuit requires* – rather than banking on getting it from elsewhere, then we may as well misappropriate the Conservation of Energy to all of our designs and forget about over-reactance.

Yet, bringing Conservation of Energy into this discussion is a non-relevant distraction. It has nothing to do with nonlinearity.

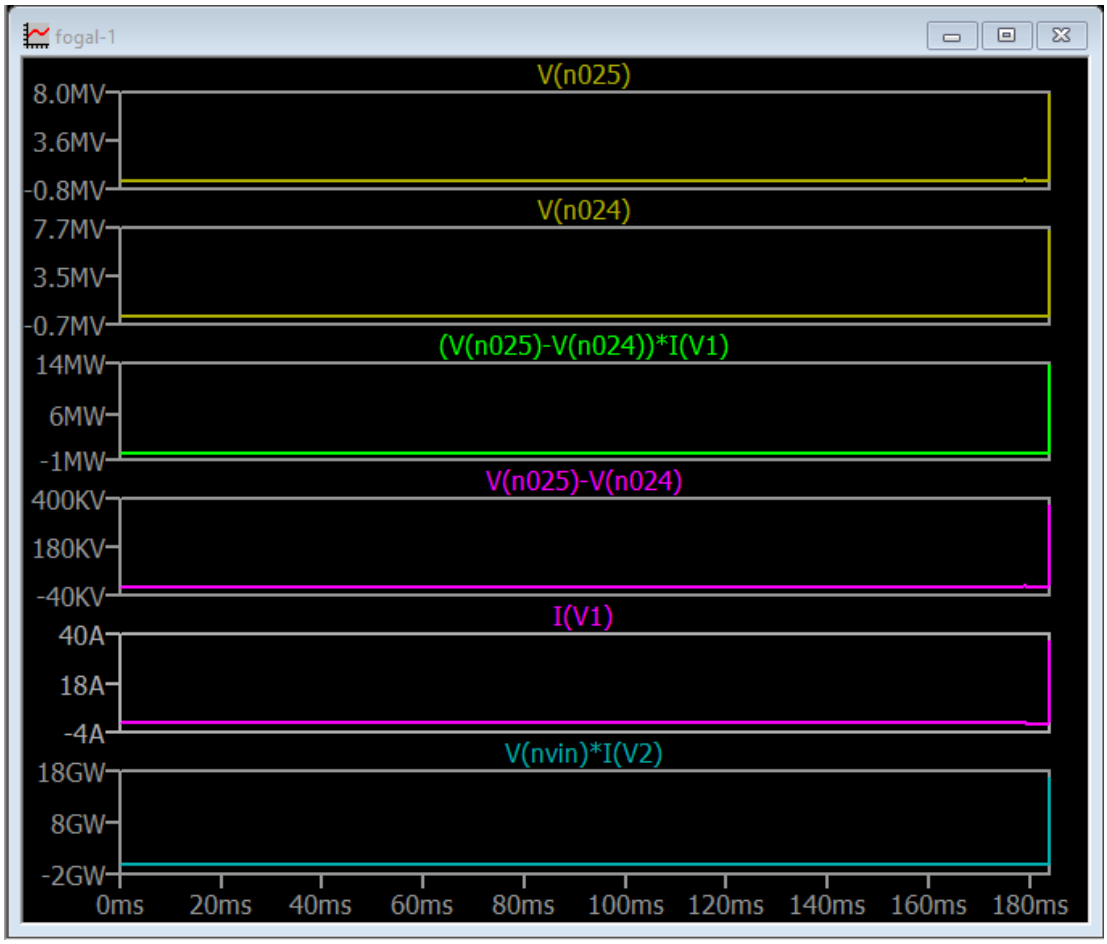
Just because we don't know where all of this abundant energy is coming from, doesn't mean we need to blame the simulator for making "numerical errors" – especially if we don't bother to gather any *direct evidence* to lend credibility to this type of fault. Making brazen claims of fallibility is as bad as scamming people for money.

The fact is, we don't have enough evidence to warrant a claim of numerical error in every single instance – especially, this one. All we have are allegations.

My advice is to use the SPICE "GEAR" method of performing transient analysis for whenever power, of significant amplitude, is being pushed through a circuit and use SPICE "TRAPEZOIDAL" method for whenever residuals are accumulated – scant residuals of energy.

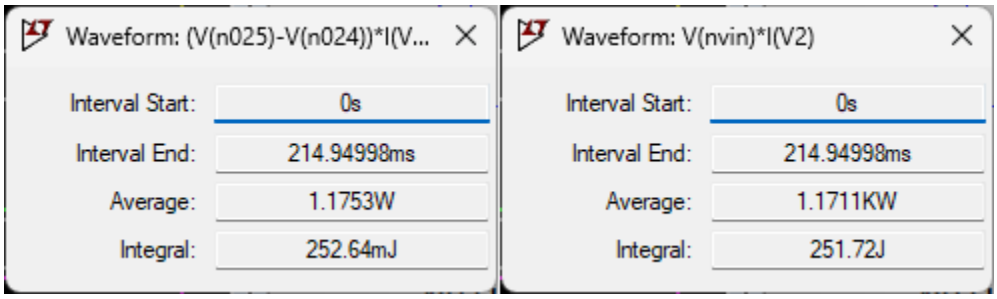
Blame these results on the accumulation of numerical residuals if you like. I won't mind since energetic residuals are just as likely.

Here is a snapshot of the outputs for the two voltage sources, the (V2) D/C battery serving as a grounded mast and the (V1) A/C sine wave frequency generator, in the schematic of the LTSpice simulation, above, at the moment in which its simulated error occurred:



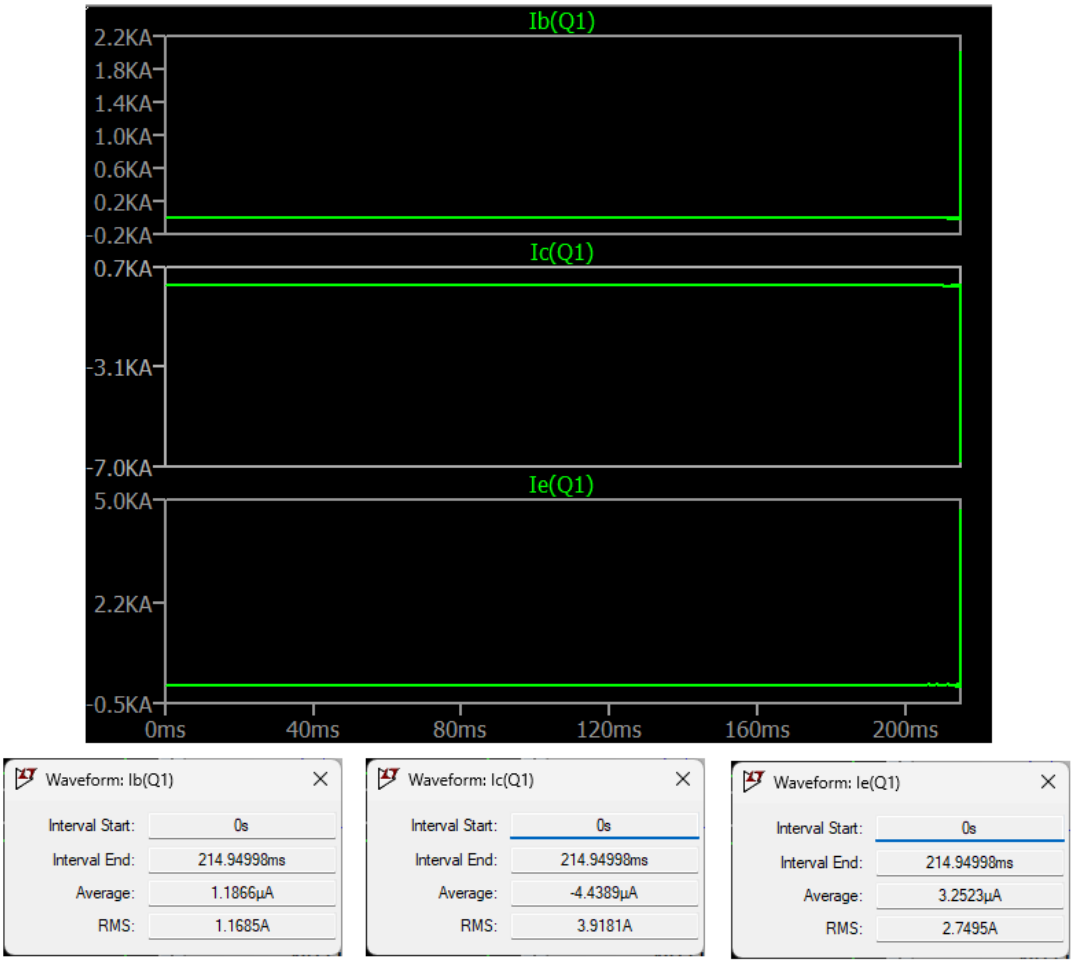
This fatal error was due to the abruptness of the escalation of amplitude during the explosive process which this version of replicating Fogal's transistor produces – not right away; but, eventually, it accelerates its escalation sufficiently enough to warrant this warning from LTSpice.

The average wattages for V1 (sine wave generator) and for V2 (mast/battery):



... yielding positive watts for both voltage sources.

When we turn our attention to focusing on what currents are traversing through each of the three terminals of the transistor, Q1, we find an interesting anomaly (according to conventional expectations):



Base: +1.1866μA + Collector: -4.4389μA != Emitter: -3.2523μA

This is the wrong answer. The correct answer is: +3.2523μA

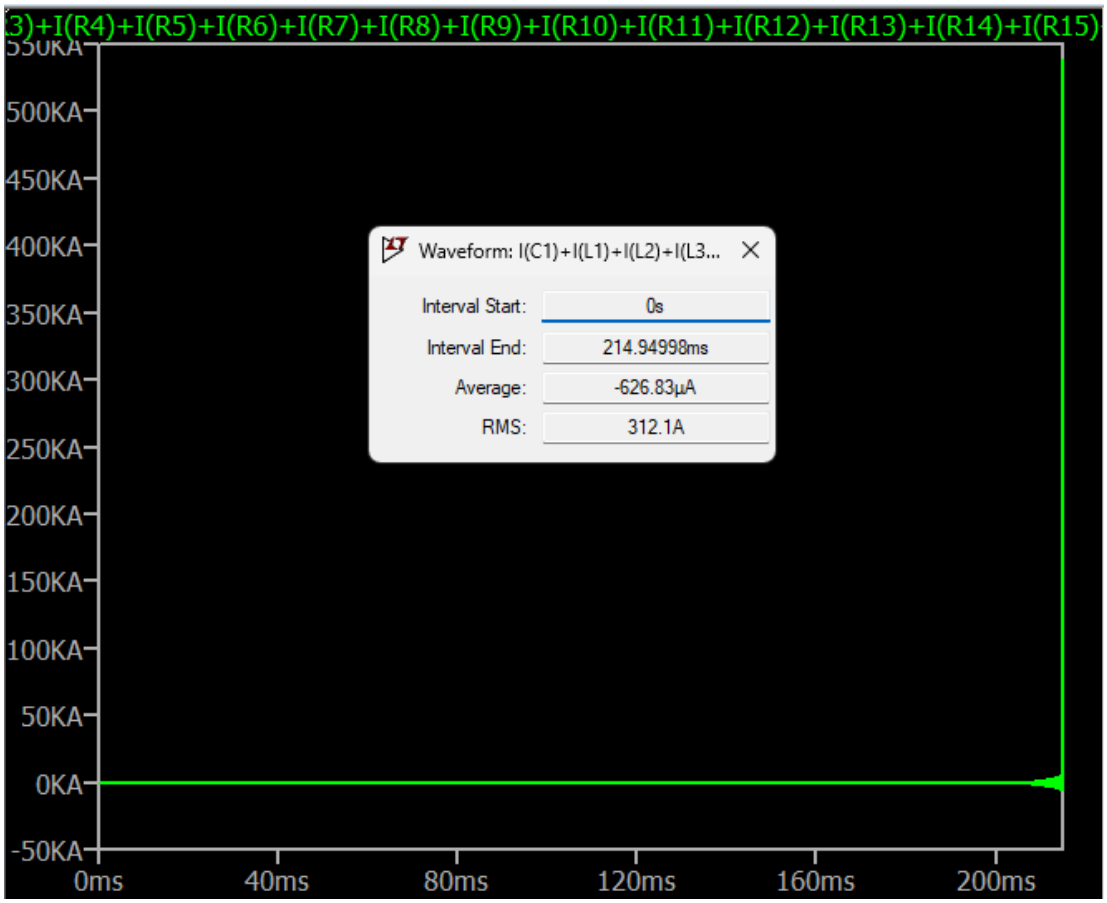
This means that the transistor somehow inverted the polarity of the result, thus effectively converting an otherwise boring simulation into the “Free Energy Generation of Power” in which we forget to give credit where credit is due.

How did it do that? It must have been the supporting elements of this circuit which gave the transistor no other choice but to conform to the arrangement of its support-team and the consequences thereof.

It’s no small wonder that this combination of interactions, among all of these components, blasts off into an explosion.

We call this “Free Energy” due to our collective ignorance of Maxwellian physics as Maxwell intended it to be. Until we admit to our oversight, we will continue to debate an unnecessary argument. Just ask Dr. Paul Wilhelm.

Let’s keep going with this and see where it leads to:



All of the currents: loads plus sources, are supposed to equal zero. Negative 626.83 microamps is not a *nearly zero* response. A nearly zero response would be more like: 0.00000000000004A to suggest numerical round-off error. This is too significant to be ignored.

And that's merely the averaged result. That's *not including* the RMS average which is *even larger* at 312.1 amps.

The first figure (the pure average; not the RMS average) indicates that this circuit has a surplus of two-thirds of a milliamp of current which it is generating (synthesizing) from where?

My critics would offer that this is an indication of a numerical artifact involving roundoff error.

At a RELTOL of 0.00001? Not likely. Lowering the RELTOL increases the likelihood of achieving explosive results.

Search for William Bill Jay Fogal charged barrier semiconductor transistor, or: alternate search.

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