Is Time the imaginary number?

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Abstract: The number used for impedance is a complex number composed of a real number plus an imaginary number. V=I*(R+J) voltage =current times impedance J is an imaginary number to make the math come out right. You may substitute that kind of imaginary number for time. I recommend that time should be substituted for the imaginary number in all calculations, in scientific disciplines, that use an imaginary number to make the math come out correctly. This could lead to all sorts of new equations in all of these fields, and show how time itself is entering into the function of the real world in these scientific disciplines. [Nature and Science. 2006;4(1):23-24].

Keywords: imaginary; science; time

Introduction

In several scientific disciplines that involve mathematics an imaginary number is used in the calculations to make the numbers come out right. That should mean that there really is something acting on the physical world that is represented by that imaginary number, since it makes the math come out correctly in real world calculations.

An example of this is voltage = current x impedance

The number used for impedance is a complex number composed of a real number plus an imaginary number.

V=I*(R+J) voltage =current times impedance J is an imaginary number to make the math come out right.

Current is plotted horizontally on a graph and an imaginary vertical axis is used for j; a2 +b2 = c2 pythagorean theorem is used to calculate a value for the current. Showing that the imaginary number represents another dimension acting on the current. This imaginary axis, for the imaginary number, on the graph, is at a right angle to the real axis for the current. So the imaginary number is acting, mathematically, as another dimension. Einstein's general relativity theory, to explain gravity, (which has been proven experimentally correct) uses time as a 4th dimension. In the real world the 3 dimensions, length, width, and depth are each one at a right angle to the other two

dimensions. Time, being a 4th dimension, should be at a right angle to the 3 physical dimensions, to qualify as a 4th dimension. The imaginary number, used in calculating current and other things, has an imaginary axis on a graph that is at a right angle to the real axis, and it is therfore acting as a 4th dimension. Since the only proven 4th dimension is time:

I recommend that time should be substituted for the imaginary number in all calculations, in scientific disciplines, that use an imaginary number to make the math come out correctly. This could lead to all sorts of new equations in all of these fields, and show how time itself is entering into the function of the real world in these scientific disciplines.

Could lead to seeing how time influences every science that uses imaginary numbers. Could (maybe) give a mathematical link between general relativity, [gravity] and electromagnetism, through substituting time symbols that represent time in each discipline into the other discipline. - Perhaps leading to a way of using electromagnetism to influence gravity. Might even lead to a unified field theory that works.

Complex imaginary number applications (http://en.wikipedia.org/wiki/Complex_number)

This substitution for the imaginary number being time is already done in relativity theory:

Relativity

In special and general relativity, some formulas for the metric on spacetime become simpler if one takes the time variable to be imaginary.

Since the universe is uniform I recommend:

SUBSTITUTE TIME FOR THE IMAGINARY NUMBER, IN EVERY SCIENTIFIC DISCIPLINE THAT USES

AN IMAGINARY NUMBER TO MAKE THE MATH COME OUT CORRECTLY.

See what new equations that it leads to and do experiments to verify if those equations accurately show what happens in the real world.

Website showing example of use of imaginary or complex numbers:
http://regentsprep.org/Regents/math...icalresouce.htm

Application to Electrical Engineering:

First, set the stage for the discussion and clarify some vocabulary. Information that expresses a single dimension, such as linear distance, is called a scalar quantity in mathematics. Scalar numbers are the kind of numbers students use most often. In relation to science, the voltage produced by a battery, the resistance of a piece of wire (ohms), and current through a wire (amps) are scalar quantities.

When electrical engineers analyzed alternating current circuits, they found that quantities of voltage, current and resistance (called impedance in AC) were not the familiar one-dimensional scalar quantities that are used when measuring DC circuits.

These quantities which now alternate in direction and amplitude possess other dimensions (frequency and phase shift) that must be taken into account.

In order to analyze AC circuits, it became necessary to represent multi-dimensional quantities. In order to accomplish this task, scalar numbers were abandoned and complex numbers were used to express the two dimensions of frequency and phase shift at one time.

In mathematics, i is used to represent imaginary numbers. In the study of electricity and electronics, j is used to represent imaginary numbers so that there is no confusion with i, which in electronics represents current. It is also customary for scientists to write the complex number in the form a + jb.

Introduce the formula E = I • Z where E is voltage, I is current, and Z is impedance.

Possible Student Questions:

The impedance in one part of a series circuit is 2 + j8 ohms, and the impedance in another part of the circuit is 4 - j6 ohms. Find the total impedance in the circuit. Answer: 6 + j2 ohms

Investigating the equation v = i x (r + j)

v = voltage or potential difference (charge difference); i = current, r =resistance, J = imaginary number.

Well let's do the substitution and see:

v = i x (r + j) substituting t (time) for j (the imaginary number)

v = i x (r+t); substituting i for charge/time [coulombs/time]

v = charge/t x (r + t); v = charge/t x r + charge/t x t; t's cancel

v = i x r + charge. For alternating current.

That equation that I derived from substituting j with t makes sense after considering it.

v = i x r + charge [substitution was made for i = charge/time (or coulombs/t)

That equation makes sense for alternating current.

Current goes from max to 0 then back to max in the opposite direction and then to 0.

When the current is at 0 and ready to change direction the charge (built up at both ends of the wire) is at a maximum, so the potential difference has reversed and ready to push the current back in the opposite direction. So, the value of the voltage (potential difference stays constant) throughout the cycle. As I x r increases the charge moves away from the ends of the wire, in current, and charge at ends of wire goes down while current goes up, still keeping voltage value v, constant. That equation does describe what is happening with alternating current.

The substitution of j for time worked.

Also, v - (i x r) = charge is valid. When v = i x r then the charge built up at the end of the wires is 0. V = i x r in direct current, and with direct current there is never a charge built up at the end of the wire because the charge is flowing constanly in one direction through the wire.

This is easy to do as you see. Go to any scientific discipline that uses an imaginary number (as another dimension) to make the math come out correctly and substitute t (time) for the imaginary number and then derive your own equations. My argument for why this is a valid substitution is at the top of this email.

The imaginary number may be simply there to handle capacitance and inductance, but the important thing is that to use it to calculate current it is plotted on a graph using the imaginary number on a vertical imaginary axis at a right angle to the real axis for current. That means the imaginary number is acting like a fourth dimension.

That means t for time can be substituted for it. Time is the only thing proven in general relativity theory to act like a fourth dimension and act on the physical world producing a warped space-time metric which is used to explain gravity. (General relativity theory was proven experimentally correct accurately predicting the angle a star passing near a solar eclipse would appear to move as light passed by the sun, and was bent by the sun's gravity.) So time is proven to act as a fourth dimension. The imaginary number with its imaginary axis acts as a fourth dimension. The time substitution for the imaginary number is therefore valid. There is no dimensional inconsistency. The imaginary axis is at a right angle to the real axis for current, and the pythagorean theorem is used to calculate current. Another dimension is at a right angle to the other three dimensions, length, width and height, which are each one at a right angle to the other two. The imaginary axis qualifies as another dimension, and so does the imaginary number plotted along it.

Summary

You may substitute that kind of imaginary number for time.

References

1. http://en.wikipedia.org/wiki/Complex_number
2. http://regentsprep.org/Regents/math...icalresouce.htm