Re: ? understanding the world by math

Source: http://sci.tech−archive.net/Archive/sci.math/2009−02/msg00073.html

- *From*: "Tim BandTech.com" <tttpppggg@xxxxxxxxx>
- *Date*: Sun, 1 Feb 2009 06:56:45 −0800 (PST)

On Jan 31, 11:18 pm, Mariano Suárez−Alvarez
<mariano.suarezalva...@xxxxxxxxx> wrote:

> On Jan 31, 4:57 pm, "Tim BandTech.com" <tttppp...@xxxxxxxxx> wrote:
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>> On Jan 30, 11:17 pm, Mariano Suárez−Alvarez
>>
>> <mariano.suarezalva...@xxxxxxxxx> wrote:
>>
>>> On Jan 30, 10:27 pm, "Tim BandTech.com"
>>> <tttppp...@xxxxxxxxx> wrote:
>>>
>>>> On Jan 30, 4:09 pm, Cheng Cosine
>>>> <asec...@xxxxxxxxx> wrote:
>>>>
>>>>> Hi:
>>>>>
>>>>> Math represents a set of
>>>>> powerful tools to help us
>>>>> approach
>>>>>
>>>>> the true nature of this world.
>>>>> Though linear system theory
>>>>> provides

many very power tools for
us to approach the nature,
the real world

in many cases is not linear.
Then, except conducting
linearization

to under a small part of the
nature within a small range,
whatelse

can we use to understand
this world?

The polysign numbers inherently contain
spacetime correspondence due
to the behavior of the math beyond sign
three. These higher sign
systems are somewhat nonlinear, though I
hesitate to use that word
strictly since the higher sign systems do still
obey the associative,
commutative, and distributive laws.
[snip]

What does this paragraph possibly mean?!

What does it mean that a sign system is nonlinear? What difference is there from that to its being only "somewhat" nonlinear? What on earth is a "spacetime correspondence"? In what way can an algebraic system "contain" a "spacetime correspondence"?

The difference (or one of the differences) between math and, say, poetry is that unless you make explicit the meaning of the terms you use, you are plainly and simply not saying

anything. Deep sounding mumbo−jumbo only impresses...
hmmm...
the editors of Social Text.

−− m

Mariano I am so sorry for you that you cannot understand such a simple thing.

I honestly cannot tell if I understand or not: as I have stated, you have, as far as I know, never explained what meaning the terms I mentioned (and quite a few others I have seen you use elsewhere) have, and I can confidently say that there is no standard, well−known meaning attached to a claim such as "The polysign numbers inherently contain spacetime correspondence due to the behavior of the math beyond sign three".

[paragraph on how all humans are limited, and on my refusal to accept the polysign numbers snipped]
I'll go over the spacetime correspondence here again for you or some other reader who thinks I am lame. The family of polysign numbers is large. The family is
P1, P2, P3, P4, P5, ...
Yet of all these systems only three preserve the following behavior:
$| z1 z2 | = | z1 || z2 |$

I do not recall your listing *what* properties you expect an absolute value function to have.

I've got to check in right here because you seem to think that I am defining a new absolute value function. I am not. This is the usual absolute value. It is the same in P2 as it is on the reals. It is the same in P3 as it is on the complex numbers. It is the same in P4 as it is on P3; simply generalize in sign. It is simply the distance function. The nuances of difference for me come at a different stage of awareness. That some believe this absolute value to be a higher form than the types it applies to is a deep mistake. Instead the polysign construction exposes magnitude as fundamental, sign being a discrete type whose marriage to this continuous unsigned magnitude yields the real numbers, the complex numbers, and a myriad of higher forms... also let's not forget that little rascal P1.

You Mariano insist on applying the old language to a new language and will claim that any inconsistencies are a failing of the new language. You see though the consequences of this new language range widely. There are unmistakeable gains to be had. Upon turning the new language onto the old one then the inconsistencies become shuffled another way such that the old language becomes suspect. Because the new language is a compact form of the old language with additional consequences that were not present in the old language the mismatch can be validated from the progressive side looking askance at what has been. It is a function of human judgement as to which side one will take. This is no different than the tear between say a string theory and a classical particle theory. There is room for the pragmatist in the middle to arbitrate but for me my side is clearly chosen. Your attack on my statement of the distance function is illogical, for the geometry is well exposed and the ordinary distance function suffices directly on the polysign math as is stated at my website. You may treat this refutation as an answer as well so we can drop the topic and move on with your other attacks if you see and accept my argument here. For now I will remain merely at this one point until we fully address it into congruity. If you insist that I redefine the ordinary math then so be it. I simply reuse the ordinary system of absolute value as distance as in Euclidean geometry of the superpositional space.

We'll eventually come to a dispute over just what is meant by
P1 P2 P3
as a symbolic construction. There is a healthy discussion, but one that few will undertake because to forsake isotropic space for a structured spacetime seems beyond hope to that human judgement system, though Einstein did come part way in his convincing usage of the Minkowski metric. Here I have answers but first you would properly have to ask the questions since if I try to preanswer them it's as if I'm shoving a bunch of information down your throat and it would then simply become regurgitant. So it goes for the human race. Most simply gag on my attempts here and so my stream of information simply flows into databanks. They don't seem to mind holding onto it since it is just trivia to them.

> If the only one you are
> interested in is the multiplicative property
>
> (*) $| z1\ z2 | = | z1 |\,| z2 |$
>
> then you should know that all the Pn *do* have an appropriate 'absolute value function' which is multiplicative.
>
> This follows trivially from the fact that the Pn, when m >= 2, are isomorphic as rings to direct products of copies of R and C. The actual formulas, though, are rather messy (but they can be obtained in principle with simple

linear algebra)

I am suspect that these can be clearly instantiated in your system. My own analysis of P4 as an RxC space exposes that the error in the product is symmetrical to the resultant, suggesting that an infinite series will be necessary to cleanly compute the correct resultant. While the analysis on this webpage is partly graphical the linear compensations that might make your claim clean in two iterations have been tried:
http://bandtechnology.com/PolySigned/Deformation/P4T3Comparison.html
So perhaps you'll be able to state the problem to some precision level. Until you've done this I think maybe you better keep this argument in check a bit. You say it is possible, but who has actually done it? The polysign space is new. Could it be that it can challenge the ways that you preach? I do think it is possible, especially given the reaching attempts of Grassman and the bunk that has become acceptable in the name of progress. People have been reaching for this new ground for some time. I should be more respectful, but when the reachers have become accepted and the reached unaccepted then the shaky footing of the reaching tower leaves one wondering what they are doing hanging around in its midst.

− Tim

For example, if x = a0 e0 + a1 e1 + a2 e2 + a3 e3 is an element of P4 (with the e0, ..., e3 the 'signs' and the a0, ..., a3 the coefficients, which as usual are real numbers), you can define

|x| = sqrt(((a0 − a2)^2 + (a1 − a3)^2) (a0 − a1 + a2 − a3)^2)

Then if y is another element of P4 a computation will show that

|x y| = |x| |y|

This can be done by hand.

Things get scarier as n grows. For example, when n = 5 and x = a0 e0 + a1 e1 + ... + a4 e4, you obtain a multiplicative function putting

|x| = Sqrt[
(((−4*a[0] + a[1] − Sqrt[5]*a[1] + a[2] + Sqrt[5]*a[2] + a
[3] +
Sqrt[5]*a[3] + a[4] − Sqrt[5]*a[4])^2 +
(10*(−((1 + Sqrt[5])*a[1]) − 2*a[2] + 2*a[3] + a[4] +
Sqrt[5]*a[4])^2)/(5 + Sqrt[5]))*
((Sqrt[5 + Sqrt[5]]*(−a[2] + a[3]) + Sqrt[5 − Sqrt[5]]*

(a[1] − a[4]))^2/8 +
(a[0] − ((3 + Sqrt[5])*a[1] − 2*(a[2] + a[3]) +
(3 + Sqrt[5])*a[4])/(2*(1 + Sqrt[5])))^2))/16
]

Cute, isn't it? The ugliness comes from the fact that
pentagons are complicated beasts! Mathematica did not manage
to check multiplicativity in the 10 minutes I gave it, but the
formula does work. If you are so inclined, you can check (*)
on randomly generated elements.

When n = 6, the corresponding formula is much nicer:
if x = a0 e0 + ... + a5 e5, setting

|x| = Sqrt[
((a[0] − a[1] + a[2] − a[3] + a[4] − a[5])^2*
(3*(a[1] + a[2] − a[4] − a[5])^2 +
(2*a[0] + a[1] − a[2] − 2*a[3] − a[4] + a[5])^2)*
(3*(a[1] − a[2] + a[4] − a[5])^2 +
(−2*a[0] + a[1] + a[2] − 2*a[3] + a[4] + a[5])^2))/16
]

does the trick−−−and Mathematica can check the multiplicative
property (*) in a minute or so.

&c.

> This is the usual familiar conservation of magnitude of the reals and
> the complex numbers. While the higher sign systems are well behaved
> arithmetically they break this rule. Distances are no longer conserved
> in P4+.

> The well behaved members of the family are
> P1 P2 P3
> which form a sufficient representation of spacetime including
> unidirectional time.

See, you are here trying to explain what you meant by "The polysign
numbers inherently contain spacetime correspondence due to the
behavior of the math beyond sign three", yet you have not given
any explanation whatsoever of what a "representation of spacetime"
is, what the difference between such a representation that includes
unidirectional time (whatever that may be) and one which does not
include it is, and what it means for something (the polysign numbers,
in this case) to be a "sufficient" representation.

A great professor I had used to refer to the Principle of

Preservation of the Difficulty: your "explanation" is a great example of that principle in action.

[Paragraph concluding that someone named Mario is a loser snipped]

−− m

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