Re: JSH: The "Published" paper he dosen't what you to know about.

Source: http://sci.tech−archive.net/Archive/sci.math/2006−09/msg03678.html

- *From*: jstevh@xxxxxxx
- *Date*: 18 Sep 2006 20:35:16 −0700

marcus_b wrote:

> Sue wrote:
>
>> Paper published and withdrawn paper by crank/crackpot James Harris
>> exposes
>> the "Over Iinterpertations of Galois Theory" by mathematicians.
>> http://www.ne−plus−ultra.net/pubs/beckwith_factorization.pdf
>>
>> ADVANCED POLYNOMIAL FACTORIZATION
>> James Harris
>> A. W. Beckwith
>> Department of Physics and
>> Texas Center for Superconductivity
>> University of Houston,
>> Houston, Texas 77204−5005, USA,
>> Fermi National Laboratory
>> Batavia, IL 60510−050
>>
>> Abstract.
>> Algebraic method for determining distribution of factors within a polynomial
>> factorization, which breaks through what was seen as a barrier from over
>> interpretations of Galois Theory
>>
>> Correspondence:
>> A. W. Beckwith: projectbeckwith2@xxxxxxxxx
>> PACS numbers : 02.10.−v, 02.10.De, 02.10.Ox , 02.20.Bb
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>> A.M.S. (MOS) Subject Classification Codes. 11R04,11R09
>> KeyWords and Phrases. Polynomial factorization, Galois theory,
>> Factorization
>> lemma, Ring of algebraic integers
>>
>> Advanced Polynomial Factorization Approached.
>>
>> Determining the distribution of factors within irrational algebraic integers
>> has long been considered impossible as it is not possible to do using Galois
>> Theory. However a simple technique through the introduction of more

variables makes it possible. To highlight the standard belief consider the algebraic integer roots of x^2 + x − 5.

While you know that the algebraic integer factors are themselves factors of 5, can either not have non unit factors of 5? How do you know?

In looking to consider distribution of algebraic integer factors within a factorization I'll be using a more complicated example than x^2 + x ? 5.

This paper will show, using basic algebraic methods, that given the factorization, in the ring of algebraic integers,

65x^3 − 12x+ 1 = (a1x + 1)(a2x + 1)(a3x+ 1)

one of the a's is coprime to 5.

First I'll need a simple lemma to generalize beyond factors of a polynomial that are themselves polynomials.

Factorization Lemma:.
Given a factor g of a polynomial P(x), further defined as a factor for all x, which means that the value of g for a value 'a' of x is a factor of P(a), within the ring of algebraic integers, there exists r and c such that

g = r + c

where r =0, or varies as x varies, and c is a factor of the constant term P(0) and is itself constant.

Let x =0, then g must be a factor of P(0), so at that point c = g.

If when x does not equal 0, g = c, r =0. If when x does not equal 0, g = c there must exist r which varies with x. That is, r =g− c.
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As an example consider sqrt(x +1) which is a non polynomial factor of x +1, and while there are an infinity of irrational solutions consider the rational solution at x =35.

Then I have sqrt(35 +1) = 6 = 5 + 1; therefore when x =35, g =6, r =5, and c =1. But for different values of x, g and r will vary, while c will not.

Primary Argument.

Given

65*x^3 −12*x+ 1 = (a1*x + 1)*(a2*x + 1)*(a3*x+ 1)

in the ring of algebraic integers. Let

P(m) = f^2*((m^3*f^4 − 3*m^2*f^2 + 3*m)*x^3 ? 3(?1 + m*f^2)*x*u^2 +

u^3f)

Here f is a non unit, non zero algebraic integer coprime to 3 and x, and u a non unit, non zero algebraic integer coprime to f. Note P(m) has a factor that is f2.

That expression comes from expanding (v^3+1)*x^3−3v*x*y^2+y^3, using the
substitutions

v = −1+m*f^2, and y = u*f,

where additional variables provide an additional degree of freedom.

Now consider the factorization

P(m) = (a1*x + u*f)(a2*x + u*f)(a3*x + u*f)

where multiplying out shows that

a1*a2*a3 = m^3*f^6 − 3*m^2*f^4 + 3m*f^2 = f^2(m^3*f^4 − 3*m^2*f^2 + 3*m)

so

a1*a2*a3 = mf^2*(m^2*f^4 − 3m*f^2 + 3).

Therefore, at least one of the a's cannot be coprime to m, and at least one of the a's must equal 0 when m=0.

(Note: The a's are roots of a monic polynomial with algebraic integer coefficients so they are algebraic integers.)

Notice that the constant term P(0) is given by P(0) = f^2*(3*x*u^2 + u^3*f) and also that P(0)/f^2 = 3*x*u^2 + u^3*f, which is coprime to f.

Then I have the factor of P(m), g1, where g1 = a1*x+u*f, where here I also have that a1 is not coprime to m.

From my factorization lemma, I have that, when m =0, g1 = c = u*f, meaning f
is a factor of the constant term.

Therefore, exactly two of the a's equal 0, when m =0, to get the factor f^2 in the constant term P(0), while one must not equal 0, or f^3 would be the factor.

Now as noted before in general P(m) has a factor that is f^2, and separating that factor off, gives a constant term coprime to f; therefore, given g1 = a1*x + u*f where with m = 0, g1 gives a factor of f it must have that same factor in general, proving that two of the a's have a factor that is f.

Therefore, one factor is coprime to f.

Now letting m =1, f = sqrt(5) , where I can let u=1 as its value doesn't change the a's,

I have

(m^3*f^6−3*m^2*f^4 + 3*m)*x^3−3*(?1+ m*f^2)*x*u^2 + u^3 =
65*x^3−2*x+
1

which may be more easily seen from using

v = −1 + m*f^2 = 4, y=1 with (v^3 +1)*x^3 ? 3*v*x*y^2 + y^3.

Therefore, with the factorization

65*x^3 − 12*x+ 1 = (a1*x + 1)(a2*x + 1)(a3*x+ 1)

one of the a's is coprime to 5, which shows where some of the algebraic integer factors distribute despite the factors being irrational.

Another version, different in detail, not co−authored by Beckwith, appears in a webzine called 'Chiaroscuro':

http://www.etienne.nu/isis/Chiaroscuro8.pdf

The date is July 2005. The first sentence is: "Over a hundred years ago subtle error crept into number theory."

A variant of Harris's deeply flawed argument involving constant terms of functions is still present.

Is this the version that was sent to the Annals of Mathematics?

Marcus.

Yes it was.

They told me it was received and was to be reviewed.

I waited and waited, expecting them to follow rules and this would all be over, but after six months with no word, I contacted Princeton.

I was told that a rejection had been emailed a month after submission. I never received any rejection. I have still never received a rejection to this day.

And I was was given no reason for a rejection as the person who told me this, also told me she just found it noted in the database.

I don't give a lot of details about who I contacted as she is someone I trust, and she was not the one who put the entry in the database−−she was on vacation when it was done−−but was the person who told me the paper was to be reviewed.

A nice person who may have received a nasty wake−up call about the Princeton math department with my story. Sometimes even the supposedly best of the best are just not.

I never received a rejection from Princeton.

Readers who check out that paper can see how I made certain to handle the technical objections raised by posters by simply noting exactly what the argument does.

Other readers should note that no mathematical objection to any of my work has been raised in this thread.

It's all goddamn politics. It's so sad, but so effective.

Most of you are so easily manipulated by people who don't give a damn about mathematics.

Mathematicians have decided to hold on to flawed ideas that I easily and almost trivially prove are wrong because our academic world is about letting small−minded people live political lives where when the truth hurts, they can just go on teaching whatever they fee like.

An entire goddamn mathematical journal died over this and it did not matter.

Some of you may delude yourselves that you have hope for your own ideas, but reality is, if your mathematical research passes the career test−−as in it does not negatively impact the careers of some "important" mathematicians somewhere in the world−−you may be allowed to have your research accepted.

You MAY be allowed.

My story gives them even more reason to be arbitrary and political as it tells mathematicians around the world just how much they can get away with, and how much protection they'll get from people like the posters who reply to my threads.

You may be allowed to be known for your own research, but hey, think about it, the game is fixed.

James Harris

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