

Re: Cubic Complex Variables / Applications

Source: <http://sci.tech--archive.net/Archive/sci.physics.relativity/2005-12/msg01361.html>

- *From:* "Symmetry Observer" <mathexpert@xxxxxxxxxxxxxx>
 - *Date:* 15 Dec 2005 17:25:13 -0800
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Bilge wrote:

> Symmetry Observer:

>>

>> Bilge wrote:

>>> Symmetry Observer:

>>>>

>>> [...]

>> I emphasized before that this was only a preliminary estimate. Since
>> you mentioned
>> typical proton or neutron accelerations in a generic nucleus, I will
>> have to review the
>> constants of nature associated with QCD. I wonder if the fact that the
>> QCD

>

> Why? There's no point, since (1) acceleration and velocity aren't
> good quantum numbers anyway, so the velocity and acceleration are
> only of heuristic value, (2) the actual numbers would vary widely
> depending on the exact atom or nucleus in question, (3) the only
> velocity eigenvalue of the Dirac equation is 'c'. Any other velocity
> is really just an expectation value of the zitterbewegung. (4) Since
> an electron (or nucleon) which is in an eigenstate, is in a stationary
> state, the velocity doesn't make sense as anything but an analogy,
> and only then, when the analogy is valid.
>

For photon start up acceleration I have decided to use the ratio of c^2/r where r is the classical radius of the electron. Both c and r are constants of nature. Therefore the ratio c^2/r would also be constant.

Dirac's Equation is of course invariant under Lorentz Transformations. What about the possibility of generalizing it to be invariant under coordinate transformations that involve uniformly accelerated motion. Now that the Second Order Lorentz Transformations (SOLT) are available

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(a 4-D version will be presented soon), the Dirac equation could be generalized to cover the case of uniformly accelerated electrons (which radiate energy in the form of photons which have a postulated finite start up acceleration).

- > > accelerations and the "L" accelerations are both short ranged is a co-
- > > incidence.
- >
- > Unless "L" means angular momentum, pick another letter – preferably
- > one that isn't ubiquitously associated with a specific quantity.

I was going to use the lower case l but it is easily confused with 1 (one) but come to think of it, the careful reader can easily distinguish between the two.

- **Follow-Ups:**

- ◆ **Re: Cubic Complex Variables / Applications**
◇ From: Bilge

- **References:**

- ◆ **Cubic Complex Variables / Applications**
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