Re: oh, my god, physicist are really A−holes.

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- *From*: mainargv@xxxxxxxxx

- *Date*: 24 Oct 2006 19:47:09 −0700

Timo Nieminen wrote:

> On Wed, 24 Oct 2006 mainargv@xxxxxxxxx wrote:
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> > Igor wrote:
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> > > mainargv@xxxxxxxxx wrote:
> > >
> > > > oh, my god, physicist are really A−holes.
> > > > They tell you that there are this and that
> > > > particle, photons,
> > > > electrons, and other interesting corner cases.
> > > > While they could have told you, there was
> > > > just this one equation,
> > > > derived from the second derivative of
> > > > Maxwell's equations, that they
> > > > regularly do math tricks with. No wonder no
> > > > one will give a straight
> > > > face explanation where that quantum wave
> > > > function came from. Every
> > > > introductory textbook either fudge the
> > > > argument to unimpenetrable depth
> > > > to tell you how you must accept the wave
> > > > function as a postulate. Of
> > > > course no one understands it, because there
> > > > was no argument, no
> > > > insight, just an empty framework for people
> > > > to do experiments to fill
> > > > in the corner cases. Now, that's a good
> > > > strategy.
> > >
> > > QM is axiomatic. But so are many other physics theories.
> > > They start
> > > with certain assumptions and then derive further results. And
> > > I must
> > > add that QM is the most successful physical theory ever

> devised. The
> bottom line holds. But if you think that there is something
> wrong with
> one of it's fundamental axioms, just say so and explain why,
> instead of
> implying they're all nonsense, which is pretty stupid.

> > All the textbooks and web resources I can find, started to fudge after hydrogen, saying how difficult or complacated things are. You have to make three simplications just to write down the equation for Helium, not to mention figuring out suitable boundary conditions. I guess It's impractical to solve for Helium by hand. Now if all the indrotductory resources sound like this, what would you think? Would you have confidence in the theory?

> Why not? Helium is an N−body system; if you read a book on celestial mechanics, and find out that N−body systems are very hard to solve for N>2, would that cause you to lose confidence in classical mechanics and Newtonian gravitation? If you read a book on classical electrodynamics, and find that there only three analytical solutions [1], would that cause you to lose confidence in classical electrodynamics?

You are comparing different things. With classical mechanics, you can measure position and mass, with QM, you can only measure energy, that's a a big difference. Would you like to memorize different properties for different atoms like chemists do?

> Basically, why would you think that "difficult" must mean "wrong"? If the theory is wrong, at least one of the axioms of the theory must be wrong.

Maybe, the axioms or principles should be somehow tested first? (if possible)
What if the principles weren't testable?

> Also note that while atomic theory is what quantum mechanics grew out from, quantum mechanics is far more than atomic theory.
>
> [1] Well, there are more solutions than this, but they're essentially the general solutions in Cartesian, cylindrical, or spherical coordinates applied to a particular case. Also, yes, general solutions exist in other coordinate systems for both the Laplace and Helmholtz equation, but I think they're a bit to traumatic for introductory texts.

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