

Re: Protons & electrons attractions

Source: <http://sci.tech-archive.net/Archive/sci.physics/2005-04/msg02956.html>

- *From:* "Classix" <cwocwocwo@xxxxxxxxxxxxx>
 - *Date:* 21 Apr 2005 04:29:35 -0700
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Watclod wrote:

> Classix wrote:

>> Watclod wrote:

>>> Sam Wormley wrote:

>>>> Watclod wrote:

>>>>> Can anyone give the best descriptions or layman explanations

>>>>> why electrons don't fall into the protons.

>>>>>

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>>>> Probably the best reference for more information on this

(though

> it

>>> is

>>>> pretty tough sledding) is PW Atkins' "Molecular Quantum

> Mechanics."

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http://van.hep.uiuc.edu/van/qa/section/New_and_Exciting_Physics/Inside_the_Atom/968623363.htm

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<http://www.google.com/search?q=why+electrons+don%27t+fall+into+the+nucleus>

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>>>> Interesting site especially the first. The explanations why

> electrons

>>> don't fall into the nucleus is a bit out of the ordinary. No

wonder

>>> there are 101 other interpretations being offered by crackpots.

>>

>> Not in this thread (so far, anyway). You've been told twice that's

> it's

>> the Heisenberg Uncertainty principle. That's the reason.

>

> The Heisenberg Uncertainty principle was created originally to

Re: Protons & electrons attractions

describe

- > the
- > fact that when you use probe to touch the electron. It changes the
- > position
- > or momentum or you can't know either. Now people apply it even to
- > quantum
- > tunnelling or to the big bang by saying that when no one is looking,
- > nature
- > can cheat courtesy of the HUP. It is a common explanation that
- virtual
- > particles can exist because courtesy of the HUP, nature can cheat
- and
- > seemingly violate the law of conservation of energy by borrowing some
- > energy
- > from nothing and returning it. Doesnt it sound silly and unnatural.

A lot of quantum mechanics can seem strange and counter-intuitive. That's because these effects normally only become important for tiny objects, and are therefore absent from our everyday experiences. Ditto for Relativity, which becomes significant for very high speeds.

But then, it doesn't really matter if we think a theory sounds bizarre. It only matters that it can make predictions which can be empirically verified.

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• *References:*

- ◆ *Protons & electrons attractions*
 - ◇ *From: Watclod*
 - ◆ *Re: Protons & electrons attractions*
 - ◇ *From: Sam Wormley*
 - ◆ *Re: Protons & electrons attractions*
 - ◇ *From: Watclod*
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 - ◇ *From: Watclod*
-
- Prev by Date: *Re: The physics of music.*
 - Next by Date: *Re: Protons & electrons attractions*
 - Previous by thread: *Re: Protons & electrons attractions*
 - Next by thread: *Re: Protons & electrons attractions*
 - Index(es):
 - ◆ *Date*
 - ◆ *Thread*