

Re: Logic behind wave from single electron's double slit experiment ?

## Re: Logic behind wave from single electron's double slit experiment ?

---

*Source:* <http://sci.tech-archive.net/Archive/sci.physics.relativity/2007-04/msg01475.html>

---

- *From:* "guskz@xxxxxxxxxxxx" <guskz@xxxxxxxxxxxx>
  - *Date:* 14 Apr 2007 12:51:36 -0700
- 

On Apr 13, 1:40 pm, "Igor" <thoov...@xxxxxxxxxxxx> wrote:

On Apr 13, 8:36 am, "g...@xxxxxxxxxxxx" <g...@xxxxxxxxxxxx> wrote:

On Apr 12, 10:02 pm, "N:dlzc D:aol T:com \(\dlzc\)" <d...@xxxxxxx>  
wrote:> Dearguskz:

<g...@xxxxxxxxxxxx> wrote in message

[news:1176429146.891388.261520@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx](mailto:news:1176429146.891388.261520@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx)

In the experiment, when a single electron at  
a  
time is fired:

1. If there is only one slit then a wave pattern  
is  
NOT formed?

Yes, a wave pattern is formed. "Edge diffraction." It is just  
not as dramatic as n-slit diffraction.

Re: Logic behind wave from single electron's double slit experiment ?

thanks

(How about light through a single slit (any pattern or interference pattern)?)

Same.

thanks

2. But when two slits are used then a wave interference pattern is formed.

A *\*distinct\** pattern is formed.

Correct thanks

In #2, don't electrons generate an EM field, even in a vacuum chamber instead of a wire?

Only if they are accelerated, are photons emitted.

Ok but it has a charge at all times therefore an electric field? and without a magnetic field (= EM fields?) the tube couldn't make it deviate before it hits the phosphorous surface of a television tube?

3. If so then could it be its EM field(same as a light wave) is generating the interference pattern

Re: Logic behind wave from single electron's double slit experiment ?

(using two slits) instead of the electron....or  
would  
that form a much weaker (less intense)  
pattern  
then that of the electron??

Neutrons have no net charge, and form a diffraction pattern  
based  
on their momentum (same as electrons).

interesting

OK no net charge doesn't mean no field? An electron/proton pair also  
forms a neutral net charge as a whole...yet they can still have a  
field (locally meaning between the electron and proton there's TWO  
fields and they are not neutral)

Don't quarks (hence Neutron), gluons (not too familiar) have fields or  
charges (otherwise they wouldn't move towards each other)?

Electron charge is simply  
a source of \*noise\*... not pattern. It is a whole lot easier /  
safer to generate a stream of electrons though...

David A. Smith

I believe Maxwell's equations begin with a charge that then progresses  
into a field (3d)...no? you can't have a field without a charge?

Please explain how a non-propagating EM field could account for the  
observed interference. – Hide quoted text –

– Show quoted text –

Are you saying the single electron in the experiment has a non-

Re: Logic behind wave from single electron's double slit experiment ?

Re: Logic behind wave from single electron's double slit experiment ?  
propagating EM\_Field or are you saying there is no EM\_FIELD at all?