

Re: Non-zero gaps between real numbers

Source: <http://sci.tech-archive.net/Archive/sci.math/2007-12/msg01046.html>

- *From:* LauLuna <laureanoluna@xxxxxxxx>
 - *Date:* Wed, 5 Dec 2007 09:10:54 -0800 (PST)
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On Dec 5, 5:41 pm, Randy Poe <poespam-t...@xxxxxxxx> wrote:

On Dec 5, 11:38 am, LauLuna <laureanol...@xxxxxxxx> wrote:

On 30 nov, 11:45, David C. Ullrich <ullr...@xxxxxxxxxxxxxxxx> wrote:

On Thu, 29 Nov 2007 07:33:59 -0800 (PST), Venkat Reddy

<vred...@xxxxxxxx> wrote:

On Nov 29, 8:17 pm, "Dik T. Winter"
<Dik.Win...@xxxxxx> wrote:

In article
<56f03fcc-2b23-41f4-bb98-7eca6016b...@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx>
Venkat Reddy
<vred...@xxxxxxxx>
writes:
...
> > <vred...@xxxxxxxx>
wrote:
> > >The definition of real
numbers allows one to find
a real number
> > >between any two given
different real numbers. If
one uses this to
> > >assert that there is no
non-zero extent gap devoid
of real numbers in

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> > > it, then I think it is not a complete proof but just an assertion.

...

> But then here is the counter argument with an equal amount of validity
> – since there are no two different real numbers with zero gap between
> them, there is always a non-zero extent between any two real numbers,
> and hence real numbers can't fill the real line.

> According to you, is this a complete proof?

Apart from the "hence" part, that is also right: between any two real numbers there is a non-zero extent. And we have also: between any two real numbers there is another real number. But the "hence" part is unclear. What does it *mean* that real numbers fill or do not fill the real line?

Lets say that we can accept that the line is "filled" with some kind of pieces, only when the gap between any two adjacent pieces is shown to be zero. There is no reason why we should abandon this reasoning.

Why would we accept that? The line is in fact filled by real numbers, but there's no such thing as two adjacent real numbers.

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Why not just say "Let's accept that I'm right about everything"?

However, since there are no adjacent points there is no way to show that the gap is zero. Since there is no way to prove this, we can't accept that line is filled.

– venkat

David C. Ullrich– Ocultar texto de la cita –

– Mostrar texto de la cita –

If the geometric line is made of pieces at all, then it is made of spatially adjacent pieces; this is obvious.

This is the place where you go off the rails.

Stating an (as it turns out, untrue) claim followed by "this is obvious" is not a substitute for logic. What you state is something you are imposing on the continuum, not something which is actually required axiomatically.

– Randy– Hide quoted text –

– Show quoted text –

Think of the spatial continuum as it appears to your spatial intuition, don't replace it by any mathematical construction.

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That's what I'm speaking about. And for this, it's absolutely obvious.

Regards

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