

## Re: Chubykalo and Vlaev's basic mistake

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- *From:* "Juan R." González-Álvarez <[juanREMOVE@xxxxxxxxxxxxxxxxxxxxxxxx](mailto:juanREMOVE@xxxxxxxxxxxxxxxxxxxxxxxx)>
  - *Date:* Mon, 7 Jul 2008 20:23:11 +0200 (CEST)
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Tom Roberts wrote on Mon, 07 Jul 2008 10:20:44 -0500:

Juan R. González-Álvarez wrote:

[... more claims that both Jackson and I made a mistake, without any description or explanation of what that "mistake" is, merely repeating previous inadequate verbiage]

Until you explain errors in this you have NOTHING (notation from my previous post):

Once again you delete all explanations, and then claim there was no explanation. This is unfair.

One VERY IMPORTANT technique in physics is to check your formulas using simple and obvious physical situations for which the answers can be easily determined. C&V, and you, need to do this. Here are three simple physical situations which show that C&V's value is wrong and Jackson's formula gets the correct value:

A) consider the source charge at rest in the inertial frame ( $V=0$ ). Clearly  $|R|$  is constant, and therefore  $d|R|/dt_0 = 0$ .

B) consider the source charge moving in a circle centered on the point  $x,y,z$  ( $R \cdot V=0$ ). Again  $|R|$  is constant, and  $d|R|/dt_0 = 0$ .

C) consider the source charge moving straight toward the observation point with speed  $v$  ( $R \cdot V/|R|=v$ ). Clearly  $d|R|/dt_0 = -v$ .

[Be careful on this last one:  $dt_0/dt \neq 1$ , so my "clearly" is an overstatement and requires an elementary analysis. Note

that

$d|R|/dt \neq -v$  even though  $v$  is the speed of the source. (A) and

(B)

have no such subtlety.]

And perhaps you need to consider why C&V's 6-year-old reply to Jackson was never published. Could it be that they realized they made an error, but you don't? You seem to have a large EMOTIONAL commitment to C&V's invalid result, and seem to be basing your "research" on it. It certainly is possible that one of the most renowned figures in electrodynamics (Jackson) is not "ignorant" as you claim, and it just might be that like C&V you have made an error....

In any case, this is PHYSICS, and (A)–(C) above show quite clearly that C&V made a mistake, whether you recognize it or not.

Tom Roberts

C&V addressed Jackson mistake, which you repeated twice. I have added some more explanation on what was Jackson mistake (and yours) but you continue deleting...

You already used (A)–(C) as flawed argument before, but you insist now and I will add some comments on why you are also wrong on this.

If you had understood the difference between equation (8) and (9) cited in previous message you would automatically understand that for the cases you are citing above you may use the equation 9 in their paper; I repeat the \*equation 9\* in their paper, \*not\* the equation 8.

Again, it is clear you do not understand the difference between (8) and (9).

However, C&V understood the difference, and Landau understood the difference (remember that C&V took expressions 8 and 9 from Landau textbook).

Feynman also understood the difference between (8) and (9) and indeed he used when developed his famous QED diagrams.

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