

## Re: Rigid rod problem

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*Source:* <http://sci.tech-archive.net/Archive/sci.physics.relativity/2005-09/msg00527.html>

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- *From:* [russell@xxxxxxxx](mailto:russell@xxxxxxxx)
  - *Date:* 6 Sep 2005 12:33:42 -0700
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russ...@xxxxxxxx wrote:

> Spoonfed wrote:

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>>> All parts of the rod are traveling at same speed ... but time passes

>>> not synchronously along the rod. Clocks run slower at the back end

>

> I don't see in what sense your first statement could

> be true; it certainly isn't true in the original inertial

> frame, where at all  $t > 0$  the rear of the rod is moving a

> tiny bit faster than the front.

By "your" I meant "Kim B's". That is, I knew this was Kim B's writing but didn't notice that Spoonfed had provided no attribution. So I am following up, to clarify.

And also, to make the following correction [after a snip]:

> One thing I do know is true, is that in the original frame  
> the rod will always have length  $L/\gamma$ , where  $L$  is the  
> original proper length.

Er, this was rather silly of me since I just finished saying that the rod is moving at different speeds in this frame — so which gamma do we use? It seems there are pitfalls at every turn, in talking about this.

(Sure, if the acceleration is not great, the statement is more or less true no matter which gamma we pick, since they are all about the same. But I think I'd better stop saying such categorical things about a problem that I don't even know how to specify exactly. Indeed it seems like the specification is really the only hard part here, yet I don't think anyone in this discussion has seriously addressed that part of it yet.)

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- *Follow-Ups:*

- ◆ **Re: Rigid rod problem**  
◇ *From: Kim B*
- ◆ **Re: Rigid rod problem**  
◇ *From: russell*

- *References:*

- ◆ **Re: Rigid rod problem**  
◇ *From: russell*
- ◆ **Re: Rigid rod problem**  
◇ *From: russell*
- ◆ **Re: Rigid rod problem**  
◇ *From: Spoonfed*
- ◆ **Re: Rigid rod problem**  
◇ *From: russell*
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◇ *From: Spoonfed*
- ◆ **Re: Rigid rod problem**  
◇ *From: Kim B*
- ◆ **Re: Rigid rod problem**  
◇ *From: Spoonfed*
- ◆ **Re: Rigid rod problem**  
◇ *From: russell*

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