

## Re: basic question classical v. relativity

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*Source:* <http://sci.tech--archive.net/Archive/sci.physics/2005-08/msg01770.html>

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- *From:* [zxcv\\_890@xxxxxxxxxxxxx](mailto:zxcv_890@xxxxxxxxxxxxx)
  - *Date:* 12 Aug 2005 09:07:50 -0700
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Herman Trivilino wrote:

> <zxcv\_890@xxxxxxxxxxxxx> wrote ...  
>  
>> relativity seems to claim (among other things I'm sure) that you can't  
>> just describe the motion of an object and leave it at that --- you have  
>> to include the frame of reference that you took your measurement from,  
>> because the motion of the object will measure differently depending on  
>> your frame of reference.  
>  
> Yes. That's true. But there's more to it than what you've satated. The  
> reason one needs to do what you've described is because all inertial  
> reference frames are equivalent. And it is one of the most profound facts  
> about the universe we live in. It's even got a name. The Principle of  
> Relativity. (It is also known as the First Postulate).  
>  
>> My question is, this seems like such an  
>> obvious fact ---I find it hard to believe that Newton (or at least one  
>> of his followers) didn't realize this.  
>  
> Newton did realize this. It had been stated a generation earlier by  
> Galileo. It's the basis of what's called Galilean Relativity. What you  
> studied is often called Einsteinian Relativity.

So you're saying that Einstein's first postulate "The Principle of Relativity" was not originated by him, but by Galileo? That's funny, because my teacher made it sound like Einstein invented that.

> Newton's First Law is actually an assertion that all inertial reference  
> frames are equivalent.

I don't see the connection. The first law states that an object is at rest or travels at constant velocity unless a net force is acting on it, in which case it will be accelerating. How is that related to inertial reference frames being equivalent?

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- **Follow-Ups:**

- ◆ **Re: basic question classical v. relativity**  
◇ From: PD

- **References:**

- ◆ **basic question classical v. relativity**  
◇ From: zxcv\_890
- ◆ **Re: basic question classical v. relativity**  
◇ From: Herman Trivilino

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