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Time Dilation without Mystery: Newton Explains Slow Clock of Einstein

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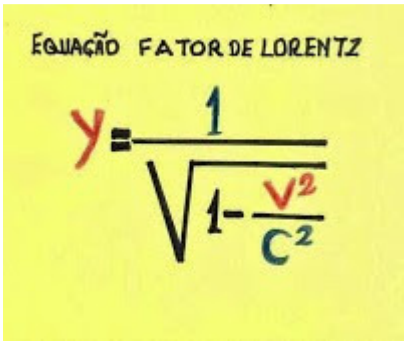
Abstract:
Since 1905 when Einstein published his special relativity with the idea of time dilation, and then, with the scientific confirmation that identical clocks traveling at different speeds, but indicate different times, the answer to the phenomenon has been a mystery. Einstein did not say why. No one said why. In this essay I will say the cause of the slow clock of Einstein. Newton explains.

*N*ewton taught time (t) is absolute and unchanging. However, Einstein did not agree and taught time (t) varies with the velocity of the referential. If a clock traveling at extremely high speed its hands will turn more slowly and tally time or less dilated compared to another identical watch but it has lower speed. Einstein wrote: *"If two clocks are synchronized while in close proximity to each other, then one of them is taken away for some time, perhaps on a journey, then they are brought together, they will no longer be in tune with each other. The clock which has been in motion will have recorded time more slowly than the clock at rest."* Einstein is right. It's not just theory, it is proven by science: A clock for high-speed registers less time (t), compared to an identical clock at rest. The equation to calculate the factor of time dilation in special relativity is the Lorentz equation. I show some examples:



V of an object — **y** – Lorentz factor

in the percentage of speed of light or % **c**	by which ***t*** of clock of the Earth will be divided
4,466%	0,001
90%	2,29

91%	2,41
99%	7,08
99,9%	22,36
99,99937%	281,70
99,9999999996247 %	365002,50

For example, if the speed of the spaceship is 90 percent of the speed of light, the Lorentz factor (y) is 2,29. In this example, the clock at rest on Earth will register 2,29 hours while the clock of the spaceship will register 1 hour and so on.

But what is time (t)?

God gives the answer in Genesis 1:14: *"Let there be luminaries in the expanse of the heavens to make a division between the day and the night, and they will serve as signs for seasons and for days and years."* Thus, time (t) is a measure of the movement of a referential in the space. In our case, the reference is the Earth's rotation (conventional clock) or oscillations of cesium atoms (atomic clocks). If there is no movement of referential or stop all referential, there is no time (t) to measure. Then, time (t) does not exist without moving a referential. The units of measure of time (t) are seconds or fractions thereof, hours, days, years, centuries etc.

But there is a question never answered: Why the unit of time (t) on the clock at rest on Earth is less than the unit of time (t) on the clock flying at high speed? Why this phenomenon happens?

Well, I think I have the answer. According to Newton's first law we know: "Inertia is the name we give to a property of a body that causes it to resist a change in its motion."

According to the Lorentz equation, if there is high speed, will be there high inertia factor. If the factor is high inertia, time (t) is recorded on the clock into smaller units.

Body resists change in motion - Newton said. Does inertia exists? It is real?

Let's think about an experience of Inertia:

In the United States, in 1956, in Massachusetts, in PSSC - Physical Science Study Committee - electrons were used in particle accelerators. See experience in: http://www.scientiamundi.com.br/site/index.php?option=com_content&view=article&id=28:a-velocidade-limite-pssc&catid=10:videos&Itemid=18

In that experience when used energies between half a million electron volts (MeV 0.5) and up to one and a half million electron volts (MeV 1.5), the velocity of the electron beam increases significantly.

If the energy increase is between one and a half million electron volts (MeV 1.5) up to four and a half million electron volts (MeV 4.5) the speed of the electron is almost the speed of light (c).

If you increase more and more energy from four and a half million electron volts (MeV 4.5) and up to 15 million electron volts (MeV 15), the velocity of the electron beam,

which was already close to the speed of light c with energy from 1.5 MeV to 4.5 MeV no longer increases. The increased power tends to infinity and produces no increase in speed! What does that prove?

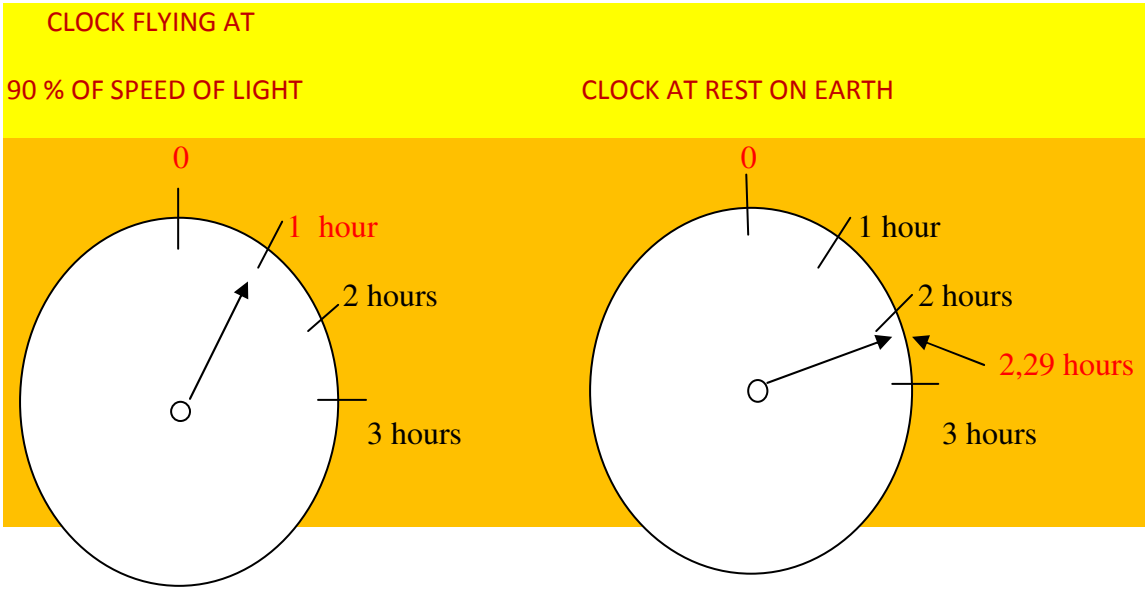
Why electron velocity increases only if we increase the energy boost? It is due to inertia, because: "Inertia is the name we give to a property of a body that causes it to resist a change in its motion."

In other words:

Why the unit of time (t) on the clock at rest on Earth is less than the unit of time (t) on the clock flying at high speed? Why this phenomenon happens?

It is also due law of Newton of inertia: The resistance of a body to change the movement happens in the machine of the clock when it is in high speed. As in our example if the clock at rest in the Earth rotates 22.36 hours, if he fly at speed 99.9 percent the speed of light the inertia is too high and it will rotate only one hour due the INERTIA force the machinery of watch resist to change.

So there is no mystery in time dilation (t') of Einstein. It is not time (t) as a magical that regulates the clock because time (t) is just a measure of movement of a referential. The answer is the inertia that regulates the clock machinery according to the speed at which it is flying.



For example: If a clock at rest on the Earth records 2.29 hours, this same clock in flight at a rate of 90% the speed of light will show 1 hour. **That high inertia causes slow clock**, because:

"Inertia is the name we give to a property of a body <u>that causes it to resist a change in its motion.</u> **So Newton, sorry, Newton and I, we said here the cause of the slow clock of Einstein.**