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1 The part 1

To the reader.

This is the part 1. It is designed to open the inner essence of time and to prove the Lorentz transformation for the time as the natural property of matter in our world. The proof will be carried out without any artificial introduction of affine coordinate or another kind of frames of reference. It will be based on the further development of de Broglie's ideas about the wave nature of matter, models of parallel spaces, inversion motion of material bodies into parallel space and hidden essence "development time" matter of our space. At the end of this part it will be shown and mathematically proved that the light in the "normal conditions" in all inertial reference systems has the same speed. For this reason, in "normal" conditions it is useless to conduct any experiments to test own "movement" relative to an absolute space.

Note: Dear reader, all the materials that are published in electronic form here were first published in a book "New model of the physical world revealing the nature of the laws of Einstein's relativity theory". [4]

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Description of parallel space and input of a concept of time.

Before proceeding further the description, it highlights the following. This model will be considered in a vacuum, where the processes are linear and uniform, and analyzed objects are elementary neutral particles whose dimensions are small compared with the distance between them. These elementary neutral particles are similar to neutral Higgs boson and this part describes one of its properties.

We now proceed to a preliminary description of the physical model. Let's choose a frame of reference (**X, Y, Z**) at rest and we set two neutral micro-objects onto **X**-axis. They will be displayed on the axis by the black dots ● . First micro-object is placed in the center of the frame of reference. The second micro-object has a shift relative to the first micro-object in the positive direction of X-axis. Let's assume that from the center of first micro-object, the light beam is emitted to the positive direction of X-axis direction. It is depicted in Figure 1 by yellow color.

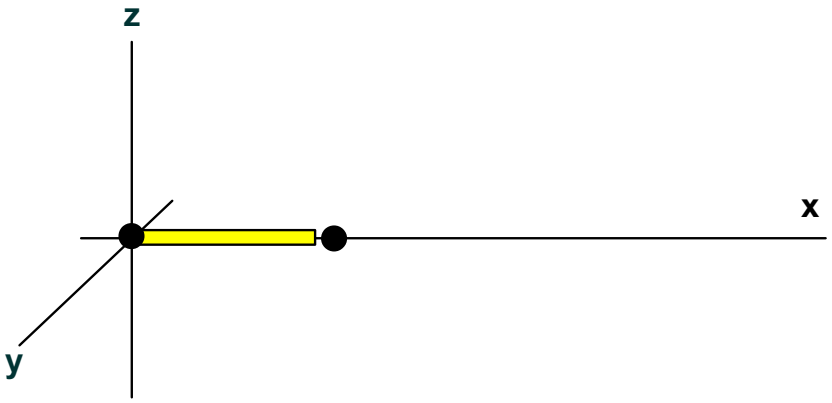


Figure.1

As it can be seen from Figure 1, the light propagates along the X-axis. Axes Y, Z are not necessary; therefore, one of the axes may be removed. For example, it may be axis Z. Instead, we will consider the spatial axis out of parallel space. It is denoted by the symbol .. **ξ .**

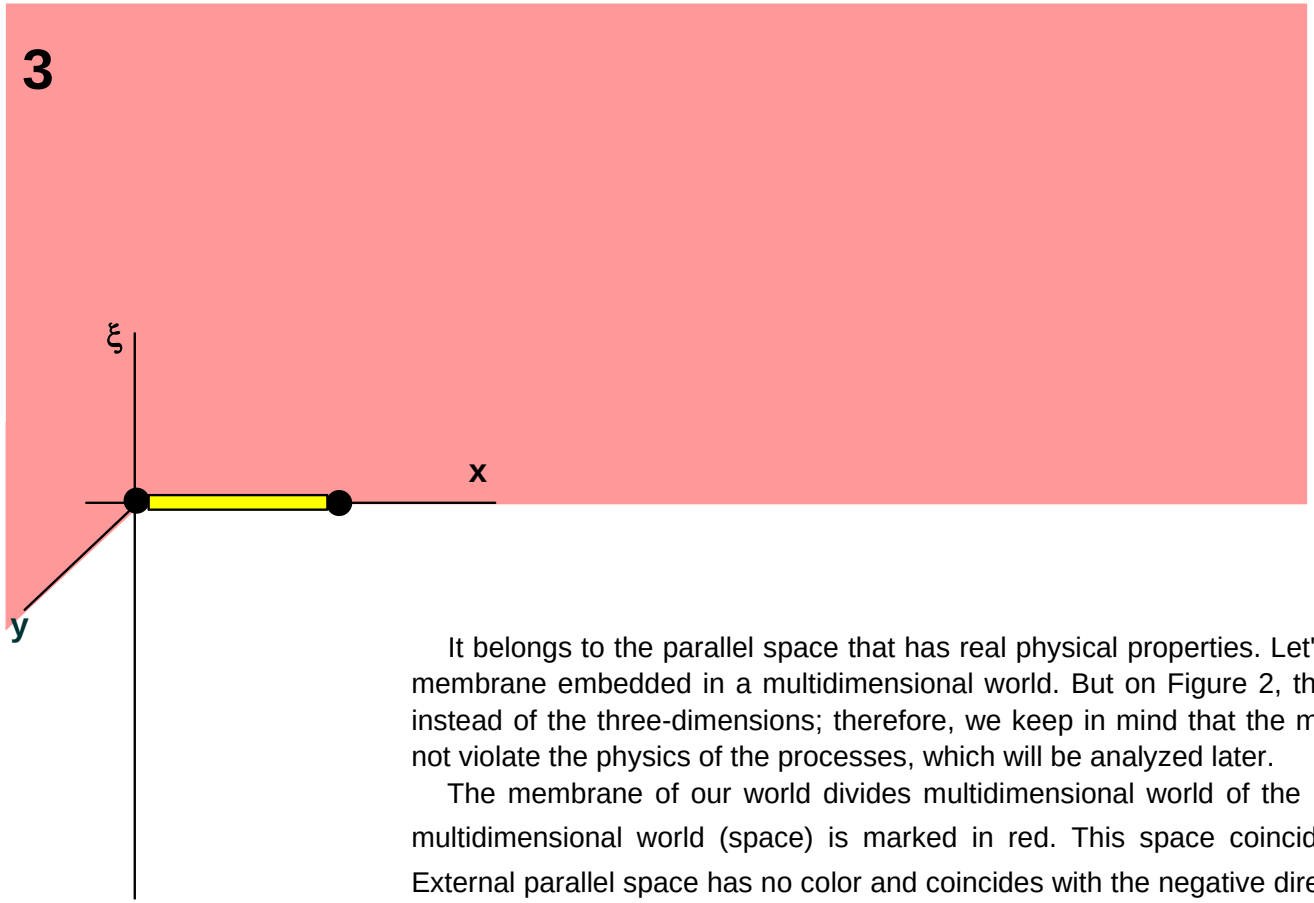


Figure.2

Now, one of the dimensions of parallel space is marked with help of a normal axis to the plane **X, Y**. See Figure 2 and ξ-symbol. The plane (**X, Y**) is our world space. Three-dimensional parallel space in full cannot be displayed together with the three-dimensional space of our world in a single picture. Because of this, it uses the long known method of removing unwanted spatial axes or, in our case, we remove a single axis. Then we obtain a three-dimensional model, which is already possible to be analyzed. However, we keep in mind that one of the coordinate axes belongs to the parallel space. But this axis isn't a normalized time axis (**ct**), which is used in the "special theory of relativity."

It belongs to the parallel space that has real physical properties. Let's assume that our world is a three-dimensional membrane embedded in a multidimensional world. But on Figure 2, there is only plane out of two-dimensions (X, Y) instead of the three-dimensions; therefore, we keep in mind that the membrane is a two-dimensional too. But it does not violate the physics of the processes, which will be analyzed later.

The membrane of our world divides multidimensional world of the parallel space into two parts. Inner part of the multidimensional world (space) is marked in red. This space coincides with the positive direction of the axis (ξ). External parallel space has no color and coincides with the negative direction of the axis (ξ). Internal parallel space has pressure of ether existing towards to our world and the external parallel space. Conditional red color for upper parallel space reflects this fact with help of an art form. This color will not appear in the next presentation. On figure 2, it helps visually to see the space that has pressure and here its function ends.

Ether of inside part of the parallel space isn't coming out into the outer part of the parallel space through the space of our world. This is due to the properties of space of our world. For the interpretation to the figure 2 it can be said that the upper part of the parallel space exists as an isolated from the lower parallel space (it is lower part of ξ-axis) by plane of our world. But don't forget that the upper part has a pressure. The whole model is created by me in detail but here, the multidimensional space model is used as a postulate. I introduce the conditional membrane for perception of this model. In reality, our world is not the membrane. It is one of the many of parallel spaces (worlds). Everything is much more complicated and interesting.

It is well known that any elementary body with a mass exists as a complex structure. But if we analyze this structure in general for its action or a property, the elementary body can be considered as a point object without an analysis of its internal structure. This approach is used for the elementary mass in this model. It is model of "black box". It is sufficient in order to obtain a general theoretical result. In a particular case, all applications can be detailed.

So, let's pass to essence of the hidden properties of the elementary mass, elementary charge, etc. These properties will allow to assert that "relativistic effects" in our world take place because of matter in our world. Here, these properties are postulated. To understand them, let's recall the known facts. You know that nature has the symmetry properties between light quantum and elementary matter. Quantum of light has wave and particle properties but any elementary particle has properties of wave and particle, too. However, complete similarity between them is not. For example, the quantum of light in a vacuum is always moving at the speed of light. As opposed to it, any elementary object may be motionless. If we are assuming that material objects have movement with some constant speed then at least, we could state this fact. But, no one of physical experiments has fixed anything like that. Because of it, this model is not using a direct motion for matter. Instead of it, the model is using presence of inverse and hidden form of a motion of material bodies that takes place relative to parallel space. Here, under the understanding of the inverse movement, I mean the following the material objects of our world do not move in a parallel space. Instead of this motion, the parallel space (aether) passes through the material micro-objects of our world, forming streams and it is giving them a hidden form of wave for movement. Of course, this model is used to long-lived micro-objects. Motion of the parallel space always has the same speed. It is equal to the speed of light. This speed will be stabilized by the internal structure of a micro-object. Such a stable, long-lived micro-object is a single wave of energy focus or aggregate of such focuses, united together. All our matter is a special energy in the waveform. In contrast to the light quanta, the movement of matter is capsized and gone between two parallel spaces. These parallel spaces are inner space and external space. Micro-objects of our world cannot move in the parallel spaces, as they belong to our world. Because flows run through the micro-objects, then we have to use the term "micro-flows". Micro-flows give micro-objects existence in our world, so if the pressure space (ether) will disappear in the parallel space, in this case, micro-flows are disappeared too and micro-objects of our world will disintegrate, fabric transforms to a clean forms of waves.

Naturally, since the parallel space (aether) is under pressure and the wave energy focus of any micro-object stabilizes passage of the aether then there are interactions between the energies of the wave focus and the parallel space. This interaction gives the reaction force in our world when there is acceleration of mass, etc. For example, this model can easily explain all of Newton’s laws. Besides any wave energy focus has constant exchange energy between itself and the parallel space, and one exists in time due to this exchange. Therefore, I am postulating the following statement: the existence of matter in our world is connected with the time of energy transfer from a parallel space.

This exchange takes place in portions and it gives quantization of "time." Process becomes a clear after the analysis of time of micro-object at rest and micro-object that moving uniformly. If there does not introduce the concepts of unit (quantum of time), then we don't get the Lorentz transformation for time under this model.

If there is no energy absorption then "wave energy focus" turns to wave, which is similar to frozen not time-varying wave propagating in an ideal environment without attenuation and dispersion. Its shape, internal state, etc. will be frozen in time like the image. For easier and right understanding term the "wave energy focus", I take the liberty and repeat again the main possible states of the "wave energy focus".

First, matter is active substance in time and develops over time. In this case, its micro-objects exist as "the wave energy focuses" that are able to absorb or return energy to the parallel space. In this case, the speed of passage of parallel space is equal to the speed of light and matter exhibit effects of counteraction to acceleration of movement in our world.

Second, the matter (fabric) cannot develop in time and has a frozen state. In this case, the "wave energy focuses" are not absorbing energy out of parallel space. Focuses do not stabilize speed micro-flows out of parallel space. Speed of any micro-flow is not equal to the speed of light. Matter in the ideal case isn't counteracting to the acceleration and curvilinear motion, does not transmit impulse. But the "wave energy focus" of micro-object is not destroyed because there is the micro-flow passing through "wave energy focus."

The third, the micro-flow out of parallel space is stopped and "focus energy wave" is destroyed and turning into the wave that is propagating in space.

In addition to the above, in the framework of this model, physics of "relativistic contraction" of matter in the direction of movement becomes an understandable. For example, I can easily predict that relativistic effects of matter will disappear, when energy focuses lose the properties of counteraction to the acceleration (second state of matter). For neutral physical bodies this condition will occur when the body mass is reduced to zero. In this case the body is not able to transmit movement impulse. In present such a state of matter isn't created artificially in pure form. But we could try to explore the liquid helium in the state of superconductivity, whether it has "relativistic" compression movement? If not, then in this case we would have a navigational instrument that can show the absolute motion in space, our speed, direction of motion. It will be done without stars or their Doppler spectrum shift. We would have known motion of our Earth, the solar system, our galaxy inside space. Many questions about the "Big Bang" can be removed.

We now turn to the conclusion of formula Lorentz transformation for time in the framework of this model.

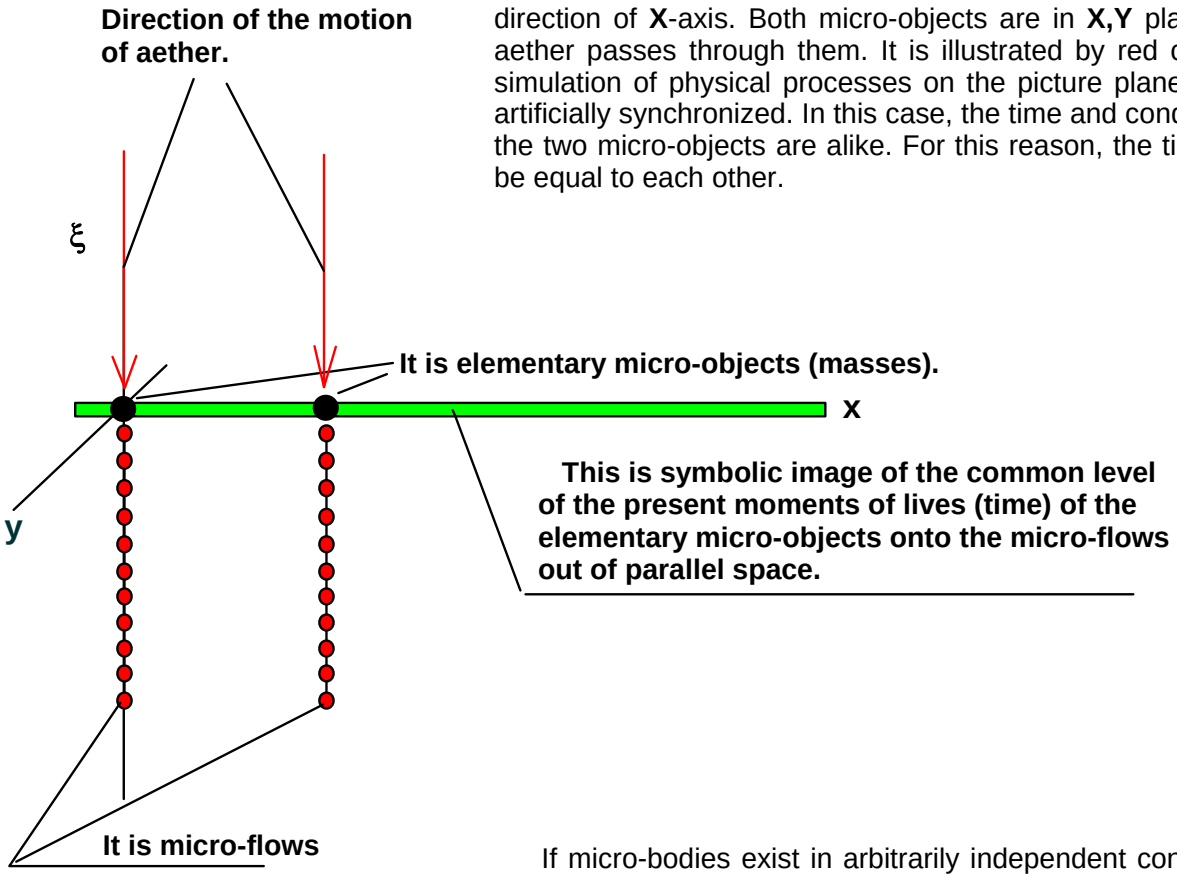


Figure.3

To do this, consider Fig. 3 In it we see two identical elementary micro-objects shown as black dots. One is located in the center of the frame of reference the second is located at some distance from it in the positive direction of **X**-axis. Both micro-objects are in **X,Y** plane of our world and are at rest. From parallel space aether passes through them. It is illustrated by red circles that are joined by black thread. This is my art simulation of physical processes on the picture plane. Hope it is clear. In this figure, passage of aether is artificially synchronized. In this case, the time and conditions for the transfer of energy from a parallel world to the two micro-objects are alike. For this reason, the time of development for these micro-objects will always be equal to each other.

If micro-bodies exist in arbitrarily independent conditions in this case, passage of aether through micro-objects can be independent from each other. From this it follows that the times of micro-objects in nature are local.

Both the micro-objects are developing over time in the opposite direction relative to motion of the ether. From the point of view of the frame of reference of micro-objects a process of passage of parallel space can be considered as an imaginary movement in parallel space. Time of life any of micro-objects depends on the length of the ether flow of parallel space that passes through a micro-object. Let's prove this.

To do this, we will consider one of micro-objects and we will find the time of energy transfer to it. This will be time of life of the micro-object, or if it may be said by words in commonly understanding: it is own natural time of micro-object in its own frame of reference. Of course, as I mentioned for further conclusion we will need to compare the time unit. For this purpose, let's consider the absorption of unit of energy from the micro-flow that goes out of the parallel space. We assume that a micro-flow gives this energy to the micro-object during its passage through the micro-object if the micro-flow has unit length ($L_{push_0}=L_0$).

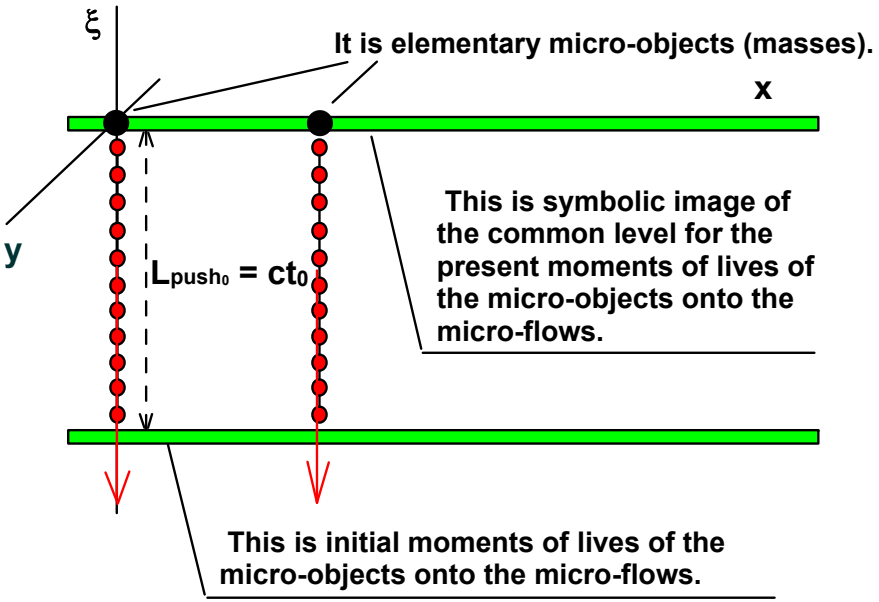


Figure.4

The notice. The symbols introduced here are used only in this part of the work.

See Figure **4**. We denote this energy unit by symbol: E_0. This energy is equal to:

$$E_0=k* F* L_0 \text{ or } E_0=k* F* t_0* V_{push}.$$

Here, the symbol t_0 is a unit of time and V_{push} is speed of passage of micro-flow from the parallel space. Symbol **F** denotes a force of the micro-flow. It doesn't change in time and direction its action coincides with the direction of movement of the micro-flow. Symbol **K** is absorption coefficient of energy by micro-object. From the two equations we obtain

$$t_0 = \frac{L_0}{V_{push}}$$

The last expression shows that the time is determined by the ratio of the length (L_0) of micro-flow unit for transmitting energy and speed (V_{push}) of micro-flow passing through micro-object. As it can be seen from the result, the absorption coefficient **K** does not affect the energy transfer time. In following, it will be omitted.

Addition. To understand the physical nature of the wave lifetime, consider the following simple example. Let at time zero the gun is shot. Suppose that air is homogeneous and there is no wind. Then, the time of life of the sound wave of the gun shot is the ratio of the distance travelled by the wave divided by the speed of propagation of sound wave in the air. The same result was obtained for the expression of the time of life of the elementary micro-object.

Let's remember that in normal conditions micro-objects are similar to quanta of light. They are being passed through itself aether of the parallel space at a speed which is equals to the speed of light in vacuum. We denote it by symbol **c**. Therefore for micro-objects in Figure 4, the velocity is equal to $V_{push}=c$ and hence the time is equal to $t_0=L_0/c$. For the general case when the length of a micro-flow can be arbitrarily long, time is equal to $t=L_{push}/c$. Here, the length L_{push} is equal to $L_{push}=N* L_0$, **N** is number of units (L_0), which are placed within a segment of micro-flow of arbitrary length L_{push}. In the above case, the direction of the force of the aether pressure out of parallel space coincides with the direction of motion of micro-flows through the micro-objects. Therefore, as it will be seen below, the metric of length micro-flow in order to transfer energy unit has a minimum length and coincides with the physical metric of the micro-flow. In general, this case will not take place. Also note the following important point.

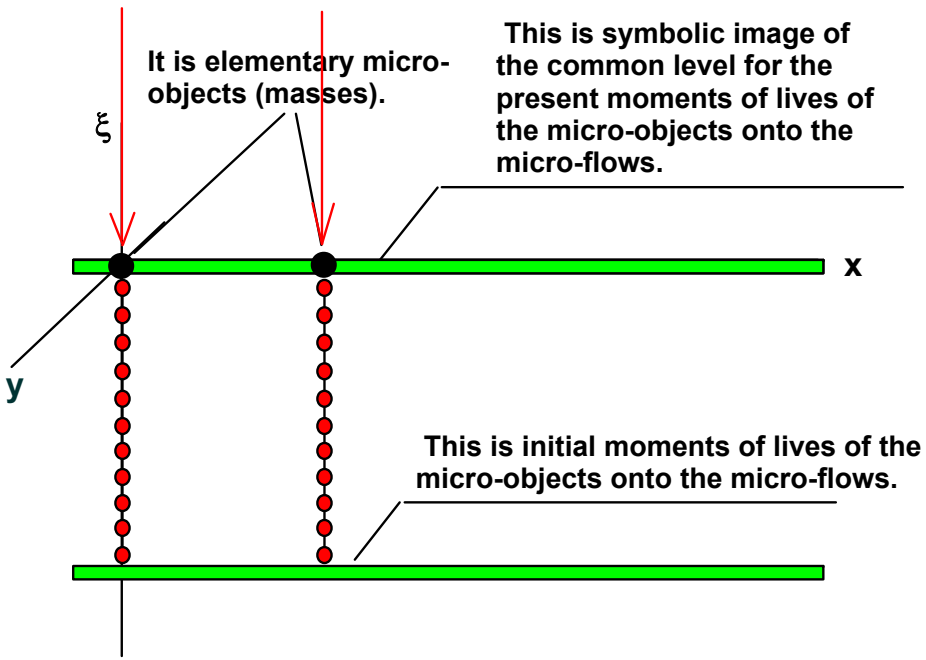


Figure.4

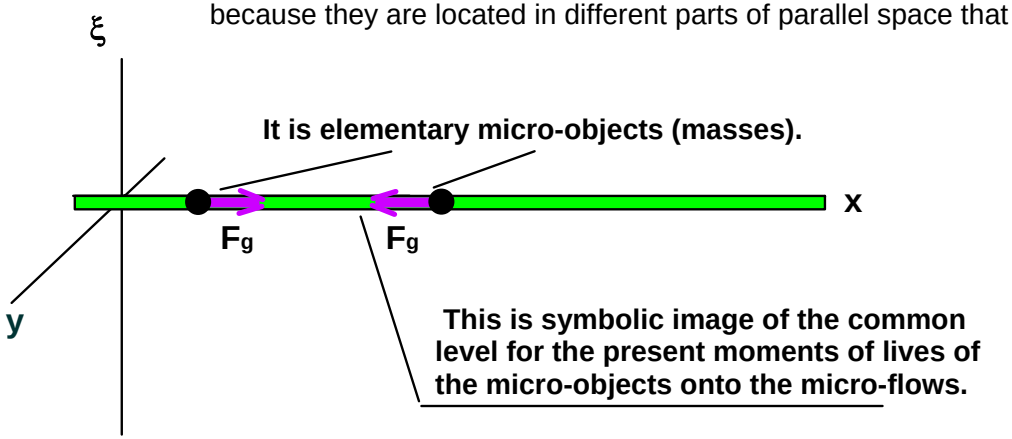
In equality $t=L_{push}/c$ the time t is a function only of the length of L_{push}. Denominator has the speed of light and it has a constant value. From the perspective of its impact it is like a constant conversion factor. Therefore, to simplify the perception of physics of processes the similar speed coefficients in the denominator can not be analyzed. After all, they are constant. But for the transition to a precise mathematical analysis they need to be restored. Here we have defined a time for micro-object at rest inside own frame of reference.

The considered mathematical analysis leads to the next conclusion. The material bodies of our world exist only in the present moment of time. Moving bodies into the past or the future time of the universe is impossible. Therefore, if we take a hypothetical, infinitely small time interval between two events, then for these events any physical experiment cannot record in one physical location the same material body from a present time and past time. It takes place, because the past and the future time do not exist. We all exist only inside of present moment of time. This model can be compared with a model in which time flows through any physical body. So any physical body exists always inside of a real moment of life, and I think this is consistent with the nature of the world. Space-time does not exist. Four-dimensional model of space-time in relativity theory is inaccurate. In this work, I do not want raise all issues of general relativity.

But as an example, in following description, I will say in the form of introduction, what there is actually the nature of gravitational field. As for the mathematical conclusions of the special theory of relativity, they are true, as they were based on mathematical developments of formula of Lorentz transformation.

We now turn to a brief analysis of the mass consisting of several elementary micro-masses (micro-objects). And we will see that these masses will have the same time that the elementary micro-mass has. For simplicity, let's assume that the total mass consists of homogeneous elementary micro-masses, i.e. **M = p*m** here is **p=1,2,3....** . In example that is in Figure.5 the value of **p** is equal to **p=2**.

In this model, if we consider any elementary micro-mass, its structure implies presence of entrance for tunnel of micro-mass. The entrance is located in upper part of parallel space. This part has pressure of aether. In addition, the micro-mass has an exit for tunnel. The exit is located in lower part of the parallel space. It has no pressure. Therefore, entrance of tunnel of any elementary micro-mass is not able to capture an exit of tunnel of another micro-mass. It takes place because they are located in different parts of parallel space that are separated by membrane of our space.



Therefore, a connection of micro-flows following one another for mass does not take place. Micro-flows are accumulated into parallel flows. They increase power of the flow volume into the lower part of parallel space without changing the development time of the total mass. A rough analogy to the above, it is a sieve with a lot of holes in the bottom. If you try to quickly fill it with water you will see that through all the holes on the bottom of the sieve, the water flows in parallel with the same speed and the flow time of water will be the same for all holes. See Figure 5. There you will see the first step. This is merger of two identical micro-masses by gravity. They form a double mass after as they were bound together.

Figure.5

Let's visually verify that the total mass has development time (existence time) or in other words, own time of reference that coincides with time any of elementary micro-masses.

Here in Figure 5, you can see the movement of micro-flows through two micro-masses. Their channels are merged with one another, but they remain independent from each other. Because of this reason, the lengths of the micro-flows aren't changed, and conditions for action of the force out of parallel space also remain unchanged. As a consequence, we have the following conclusion: any material body of arbitrary mass has the same time of life what has an elementary micro-mass if they all exist under equal conditions. Therefore, in order to get the Lorentz transformation for time, we have to analyze the time of micro-mass at motion inside its frame of reference. This is enough for it. The conclusion will be valid for all bodies that have a mass.

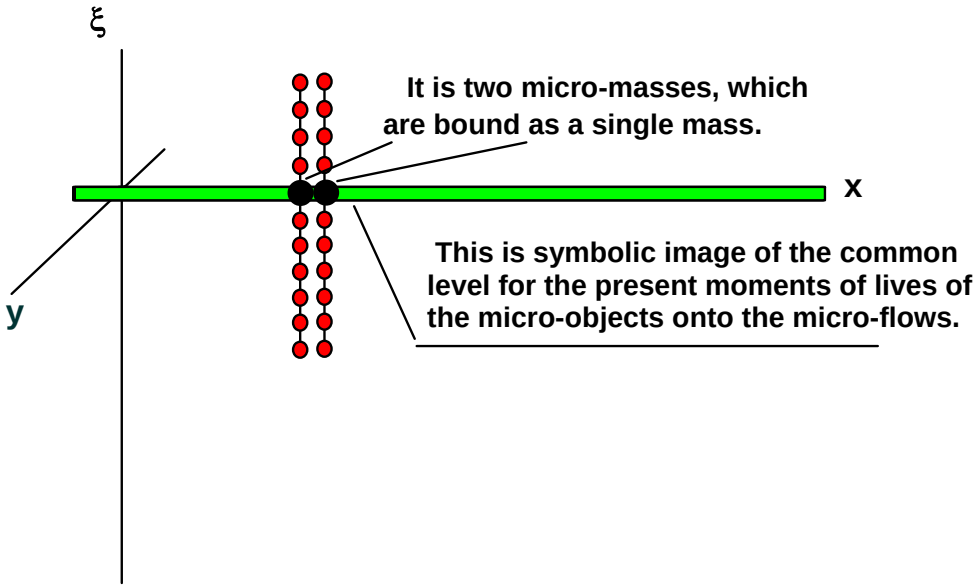


Figure.5

Addition 1. The essence of the gravitational field. Antigravity.

Since the interpretation of the essence of the gravitational field in theory of relativity seems unconvincing, here I will make a small digression to explain the nature of this field. Explanation will be made without the math, but it will show the physical nature of the gravitational field.

To view the addition 1, see the page 10a.

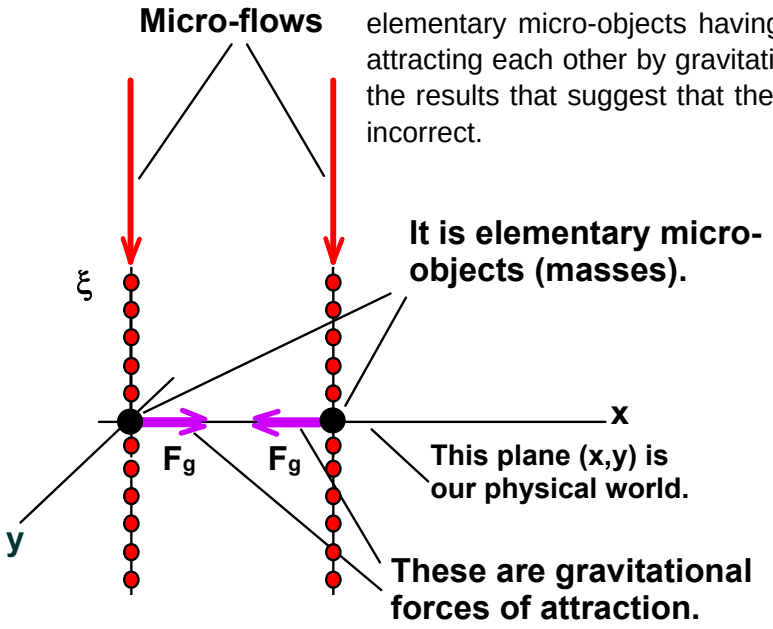
Addition 2. Explanation of the nature of the forces of Newton.

Here you are invited to explanation of the nature of the laws of Newton and electromagnetic forces. As it is well known, Newton's laws are postulated at present and their physical essence now is unclear. It is unclear, from where force of counteraction appears at acceleration of mass, why energy need to spend to accelerate the material bodies of our world, the nature of the action of inertia force of mass is unclear too and etc.

The inertia force is manifested when a physical body changes own speed. This force doesn't give an opportunity to make instant acceleration, braking and has enormous destructive power. For example, when we watch disaster on the track, action of this force is shocking. Something mystical appears and begins to destroy and destroy the car when the car hurtling at high speed, dramatically slows down because of the accident. The origin of this invisible energy is not clear to understanding. For example, at explosion we can watch propagation of a blast wave that there is a carrier of destruction energy. In opposite, at action of inertia force we don't see energy carrier.

Addition 1. The essence of the gravitational field. Antigravity.

The main principles of nature consist of conservation of symmetry forms of matter and symmetry of main principles of actions of the fundamental laws of physics. In this model, it will also apply to the nature of electric, magnetic and gravitational forces. Look at Figure 10a at the bottom right. In figure 10a, there are two conductors. Two direct currents flow in the same direction through these conductors. These currents create magnetic fields around the conductors. The conductors are attracting each other. Now look at Figure 10a at the bottom left. It depicts two elementary micro-objects having mass. Out of parallel space the micro-flows flow through them. Micro-objects are attracting each other by gravitational forces. Similarity of cause and effect of these forces is obvious. I have received the results that suggest that the nature of the gravitational force proposed in Einstein's special theory of relativity is incorrect.



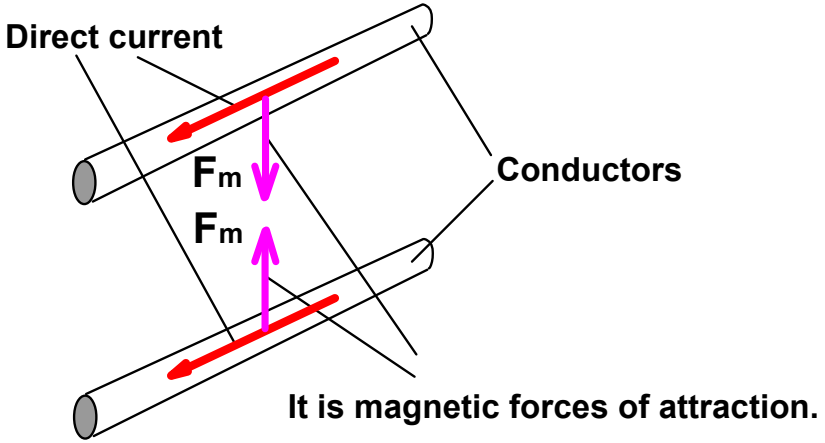


Figure.10a

10b

For example, the model shows that it is possible to create an anti-gravity field. To understand this possibility, look at Figure 10b down, at right it is showing two colliding direct currents flowing in the two conductors. They create a magnetic field repelling the conductors. By analogy with the magnetic field, we can create a local anti-gravity field. It can be created by motion backward of a micro-flow that is flowing through elementary micro-object having mass. See Figure 10b at the bottom left. It depicts two micro-objects with micro-flows. These micro-flows flow in the opposite directions. The micro-objects must be repelled with help of anti-gravity forces. That's all.

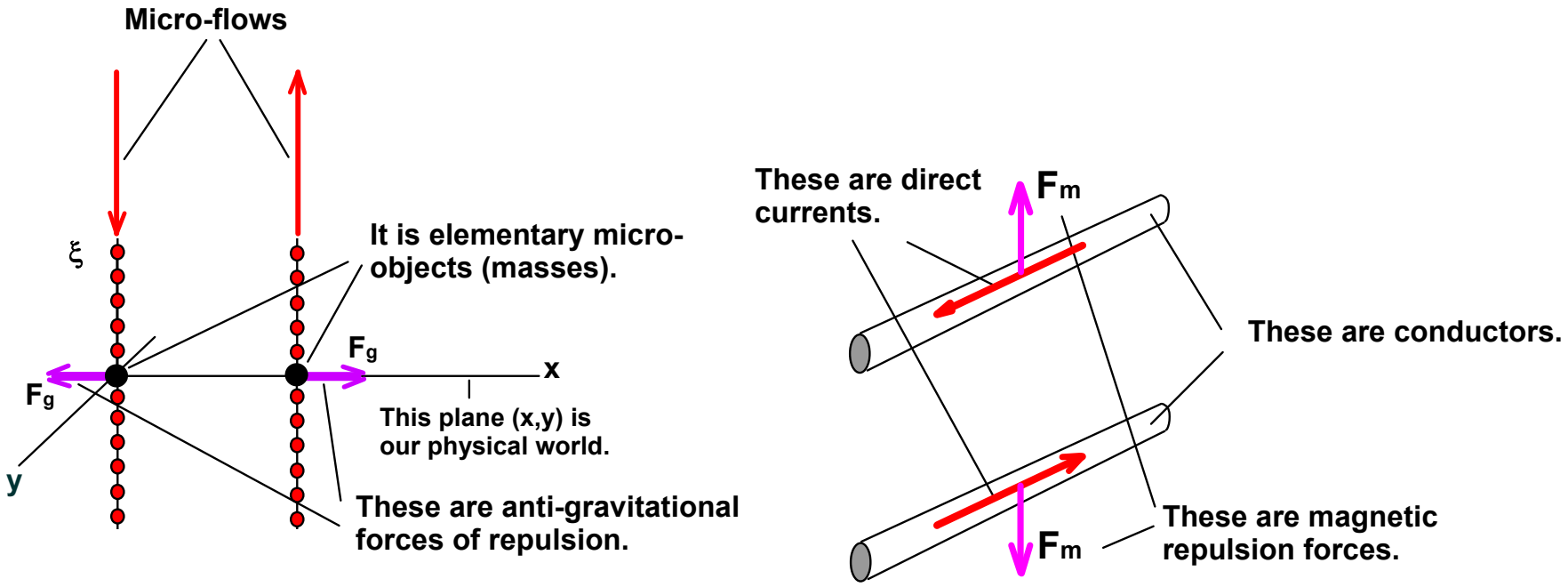


Figure. 10b

We can only see an effect of the force that appears at changing speed. Motion at a constant speed gives you condition at rest. It seems that there is "mechanism tracking" for changing of the speed of motion of material bodies. But we know nothing about this "mechanism tracking".

Newton's laws describe in mathematical form the outward manifestation of the processes taking place in our world. However, is there a physical reason that is described by Newton's laws? Does the intrinsic reason of this phenomenon exist in nature of our world? Until now, we have no clear idea of the nature of these laws. But if you want to know their inner nature, look the further "**Addition 2**". There also you will learn about the conditions under which the micro-object won't obey to the laws of Newton and the postulates of special relativity. In the presentation, all the explanation will be done as in "**Addition 1**" without the math, but the explanation will show the physical essence of Newton's laws and counter-forces of an electromagnetic field.

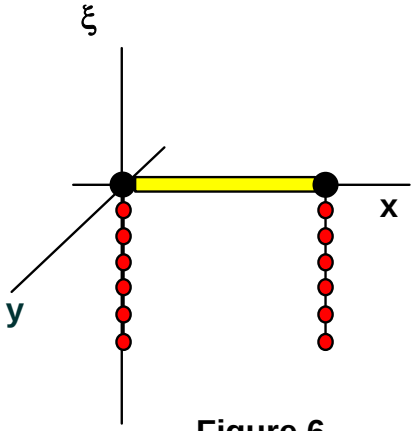


Figure.6

To view the **Addition 2**, see the page 11a.

To further understand the physics of light speed constancy in inertial frames of reference, we need to understand the following physical consequence which naturally occurs in this model. For visual perception of the physics of this consequence we turn to Figure 6.

It depicts two micro-objects that are at rest. The micro-object that is located in the center emits beam of light in direction to the second micro-object. Beam of light is depicted with help yellow color. The Figure 6 shows that beam light has traveled path, which is always equal to length of the micro-flow out of parallel space that is transmitting energy to the micro-objects. In Figure 6, the micro-objects are at rest, so each of micro-flows of micro-objects is transmitting energy by entire length. However, if the micro-objects are moving uniformly and rectilinearly, for example, in the positive direction of x-axis, the light path is reduced. But in this model there is a natural reduction in the length of the micro-flow. The length of this micro-flow will be also equal to the path traveled by light. Therefore, in frame of reference for time of right micro-object, speed of light does not change. If beam light has reflected from the right micro-object and it returns to the left micro-object, for this case the length of common path of the light forth and back will be equal to the length of micro-flow of central micro-object. And it also happens as a natural property of the body. At the end of the presentation you will see visually what has been said and will also be able to analyze a mathematical proof of this property. Therefore, I argue that all attempts to find motion relative to the ether are useless if physical bodies are being existed under normal condition. This motion can be detected only by removing the wave nature of matter. In this case, own time and sizes of material body aren't obeyed to Lorentz transformation.

11a

Addition 2. Explanation of the nature of the forces of Newton.

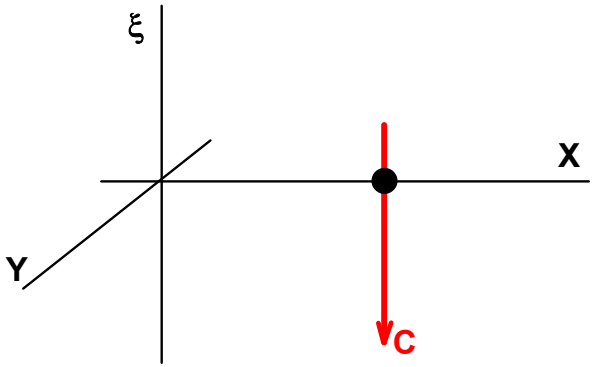


Figure.11a

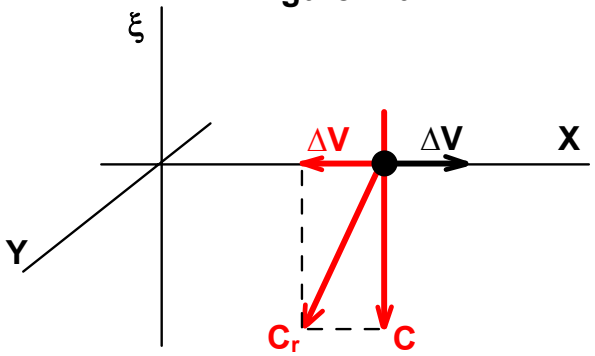


Figure.11b

To reveal the nature of the forces of Newton we first consider hypothetical "ideal" wave focus of micro-mass at rest. See Figure 11a. The term under expression of "ideal" wave focus of the micro-mass implies the following. First, the focus is concentrated in an infinitesimal point and it passes through itself aether of parallel space at the speed of light **C**. Second, the speed of passage of aether through the wave focus is ideally equal to the speed of light and can never be changed or is reversed. The name "wave" is used for the focus because of passage through the focus of aether at a speed that is always equal to the speed of light. It is property of wave. Besides, there is an analogy between the internal structure of the wave focus and the structure of quantum of light. In this part and in the next part, inner vortex structure of the focus will not be considered. If we consider wave focus as a physical focus point this is sufficient for explanation of the nature of the physical laws. See modeling techniques using the model of "black" box.

Let's try to accelerate such "ideal wave focus" up to some arbitrary low speed. In particular, let it will be speeded along the positive direction of half-axis **X**. Assume that we able to accelerate it up to speed $\Delta\mathbf{V}$. See Figure 11b.

Then, because of the oncoming influx of aether from parallel space this "ideal" wave focus must push through itself the aether at a speed equal to

$$C_r = [C^2 + (\Delta V)^2]^{1/2} \qquad \textbf{(a)}$$

This must occur because any wave type, even the "ideal" wave focus must exist in the carrier medium. Wave object of aether is this aether itself. Therefore, there was additional movement of aether, which influences on the wave object too. But we have introduced initially strict conditions for the velocity of the "ideal" wave focus. It requires that wave focus is pushing out aether through itself with speed that is always equal to the speed of light. But then, we have a contradiction, since the speed of the general passage of the aether through the wave focus is faster than light. See equation (**a**). This conclusion follows from the contradiction. The "ideal" wave focus cannot be accelerated. It must always be at rest because "ideal" wave focus has volume of mass that is equal to infinity. But in reality, in our world the material objects have masses with value limited and they can be accelerated under action of force. And in order to accelerate any material object of our world, we must expend energy for work that accelerates this material object. How do these physical phenomena can occur in this model of wave energy focus? Let's consider this question, in detail.

11b

The answer is simple. Model does not require entering of additions in order to disclose the nature of action of these phenomena. We need to adhere to the initial conditions for the wave properties of focus and re-examine the possibility of acceleration it in our world.

To do this, let's go back to the figure **11a** and we trying again to accelerate this focus up to some arbitrary low speed $\Delta\mathbf{V}$. Naturally, acceleration must occur at maintaining by the focus of the wave speed of light for the overall speed of passing aether through itself. To fulfill this condition, you need to make a small addition that takes into account the velocity $\Delta\mathbf{V}$. This addition is following. The sum of total speed, which has two components, must be equal to the speed of light always. These components are: additional passage of aether along the **X** - axis and the motion of the aether along the ξ-axis. To fulfill this condition the additional aether velocity along the **X**-axis must be compensated by braking speed of aether along ξ-axis. After the braking the speed of aether along ξ-axis must be equal to $\mathbf{C_a = [C^2-(\Delta V)^2]^{1/2}}$. For this case, the resulting speed of passage of aether will not change with the speed $\Delta\mathbf{V}$ along the axis **X** and will be equal to $\mathbf{[C^2-(\Delta V)^2+(\Delta V)^2]^{1/2}=C}$. See Figure 11c.

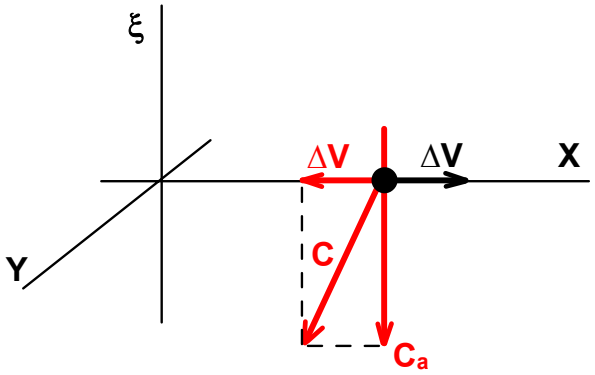


Figure.11c

But braking of aether out of parallel space is possible when there is a superposition of two opposing flows of aether. Old aether flow that is coming with the light speed **C** and a new flow of aether coming from opposite direction at a speed, which is equal to $\mathbf{C - [C^2-(\Delta V)^2]^{1/2}}$.

Resulting speed of flow is equal to

$$\mathbf{C_a = C - \{C - [C^2-(\Delta V)^2]^{1/2}\} = [C^2-(\Delta V)^2]^{1/2}}.$$

Then, if this condition is satisfied for each moment of time at accelerating of wave focus, the resulting speed will always be equal to

$$\mathbf{\{(C - [C - (C^2-\Delta V^2)^{1/2}])^2 + \Delta V^2\}^{1/2} = C}.$$

But the internal parallel space exists under pressure. Because of this, to create a counter-flow of aether there is required an execution of a work. But no one of wave focuses has energy for such work. Nevertheless, acceleration is possible, if the wave focus inherently is able to execute energy exchange between our world and parallel spaces. This exchange gives existence of forces of Newton in our world.

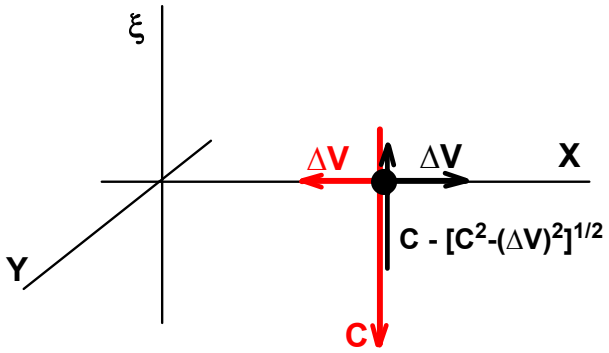


Figure.11d

That's the main reason why in the name of the "wave focus" is applied the prefix "energy."

Consider the physics of this exchange in more detail. Let's suppose that in our world in a vacuum without the gravitational field we are trying to accelerate the material object that is an elementary mass. But elementary mass will not be accelerated. In order to accelerate the mass, it should do a job for braking of own aether flow out of parallel space. Because of it, you apply a force to the elementary mass. This force executes a work that the wave focus like the "transformer" uses to create effort to brake the flow of aether out of parallel space.

11c

Because of this, when mass is accelerated the counteracting force will act at once against force of acceleration. Physics of the transition process and the time that is required for the reaction of the wave energy focus on the acceleration is very small and will not be discussed. This simplification makes it possible to get an explanation of the nature of action only Newton's laws without unnecessary complications. After acceleration of the wave energy focus of elementary mass, direction of aether passing through the focus gets the turn of flow. The total flow speed through the focus is stabilized by the focus itself and it will be equal to the speed of light. Action force from our world is not required longer. Movement of elementary mass by inertia will be supported with the pressure of aether, and the speed of the elementary mass is constant due to stabilization of its speed by the wave energy focus. After wave energy focus has braked passage of aether under pressure it will have unused energy of the aether. If the elementary mass slows down its motion, the velocity $\Delta\mathbf{V}$ decreases. In this case, the wave energy focus of mass to keep the overall passage speed of aether through itself that must be equal to the speed of light, slightly open your channel for the passage of aether of parallel space out of internal part to the external part of parallel space. And aether out of parallel space with a force will be to push elementary mass forward without letting it to be slowed down in our world, creating a counter-force to a braking force from elemental mass. That is why the moving mass possesses inertia momentum of motion and mass may have the destruction energy, which is depending on the speed and value of mass. It's all energy aether out of parallel space. But, as the aether never passes through the neutral mass into of our world, we get invisible actions out of parallel space in the form of inertia forces of bodies that obey Newton's laws. Such is the nature of the forces of Newton. Knowing some of the physical parameters of the elementary mass, such as dimensions of the elementary mass, the work spent on the acceleration of mass, etc., we can make an assessment of the aether pressure out of parallel space.

In the analyzed model of wave focus there were considered two of it variants: "ideal" wave focus and energy, wave focus. In a first variant, in our world the shift of wave focus is impossible due to its ideal properties. In the second variant, wave focus may move but with a limited speed not exceeding the speed of light. This property has an energy wave focus due to its ability to stabilize the flow of aether flowing through it. When the focus is accelerating or is braking, the exchange of energy between our world and the parallel world goes through the focus. Energy exchange through the focus gives it non-zero mass and inertial properties.

But this model assumes the existence of a third variant of the passage of the aether out of parallel space that is passing through micro-object of our world. Such a micro-object must not have stabilization of aether stream like a wave.

It must be some spatial tube. This is not the focus of the wave. He does not have wave properties. Micro-object must pass through itself aether with velocity **U**, which will be determined by the size of the channel of micro-object and a viscosity of aether. See Figure 11e. Perhaps it is approximately equal to the speed of light but the speed of passage aether through the micro-object must be not depending on the motion of a micro-object in our world.

What are the characteristic of physical properties that the micro-object must get?

First, its properties should not depend on movement and should not be subject to the Lorentz transformations. In particular, its local time depends little on the movement in our world. In ideal, hypothetical case, for this micro-object a speed of time is not changing and is subject to slight variations.

11d

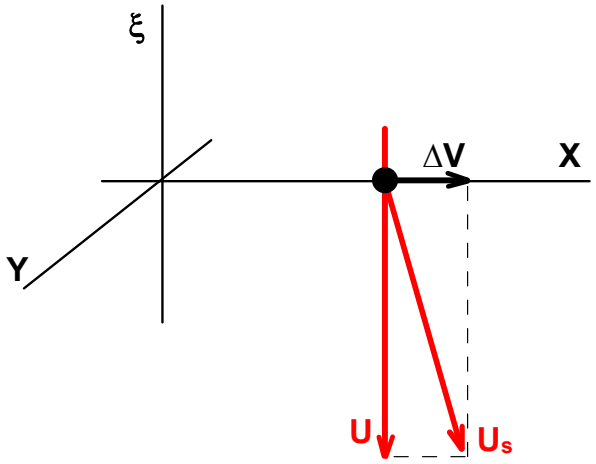


Figure.11e

Secondly, such a micro-object has no physical properties for the exchange of energy between our world and the parallel world, so its mass should be zero. As a consequence, the micro-object must not have interaction with other material objects. But, in spite of value of the mass is equal to zero, micro-object can be at rest and not move at the speed of light.

Third, as this was explained, any of micro-objects with mass can accelerate up to a speed of light only due to existence of the wave focus (or waves of focuses) inside its structure. The last model for a micro-object has no wave properties. For this reason, in theory, a micro-object can travel faster than the speed of light. Movement at such a speed is possible if movement takes place without the resistance of aether or other factors. For example, under normal conditions, we cannot accelerate the micro-object with help of force of decay or another force, if this force has a propagation velocity less than or equal to the speed of light, etc.

Neutrino most closely fits the micro-object that is described with this model. But the neutrino has a small amount of mass. But the presence of a specific mass suggests that neutrino incorporates wave focus, which can limit the maximum speed up to speed of light. But, nevertheless, this assertion is disputed and there is of interest for various neutrino accelerations in extreme conditions. For example, we can speed up neutrino that moves at almost the speed of light with help lateral acceleration.

In the case, when the lateral acceleration of neutrino will have sufficiently high energy there must be an energy threshold. Beyond it, neutrino will move faster than light or neutrino will be destroyed due to the fragility of the internal wave focus.

In addition, this model provides fundamental corrections of some long-established concepts in classical physics. For example, it concerns how the energy of masses is distributed at inelastic collision of two masses at small velocities. Existing the classic analysis of this collision isn't comprehensive. He argues that the missing part of the kinetic energy is converted into heat, but it's not quite accurate explanation. Part of the energy goes into parallel space. See [4].

Or there is particularly interesting physical conclusion for relativistic force to accelerate the mass at relativistic speeds. It shows theoretically that inside of parallel space there exists possibility to create conditions for the acceleration of the mass with smaller force. May be it seem incredible but a theoretical way in this direction exist. See [4]

With regard to the ability of electric charges generate an electromagnetic field, which is counteracting to acceleration, the nature of this phenomenon is similar to the second property of the energy, wave focus that was described. It is all, the "Addition 2" is over.

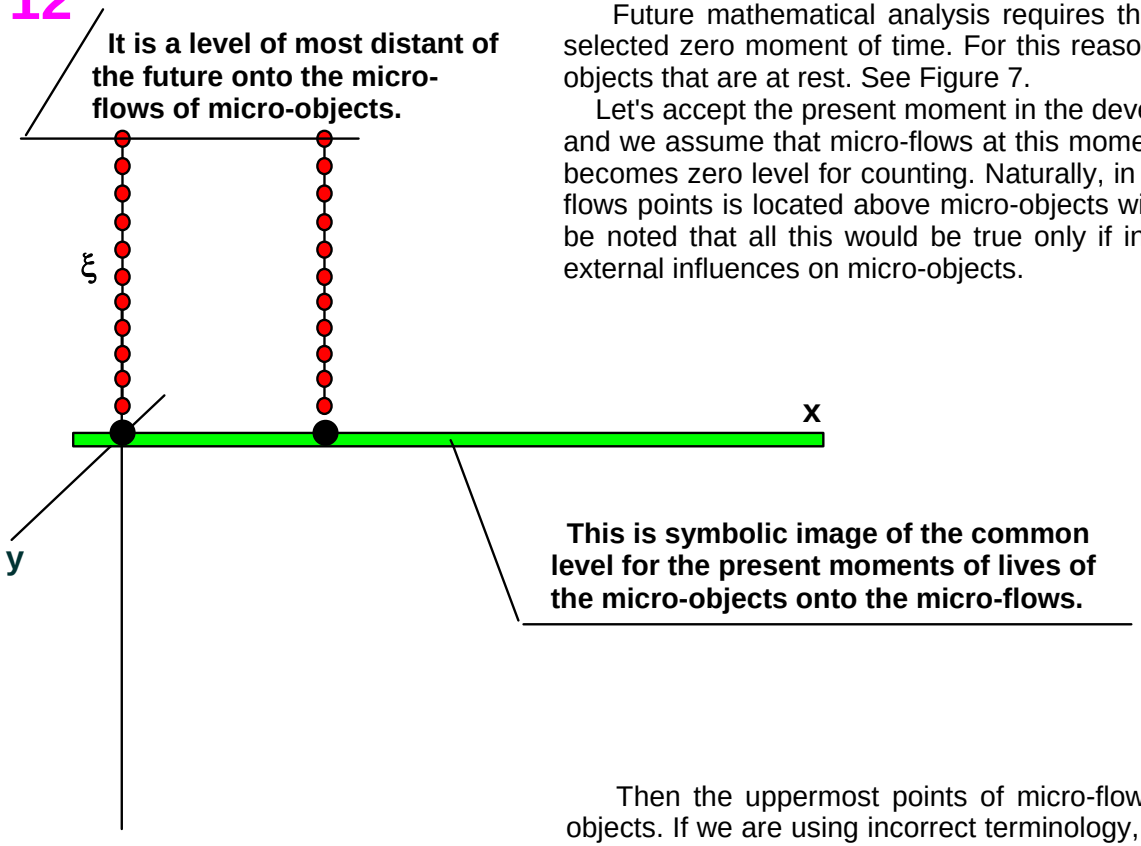


Figure.7

Future mathematical analysis requires the definition of time polarity for micro-objects relative to a selected zero moment of time. For this reason, we again return to the analysis of micro-flows of micro-objects that are at rest. See Figure 7.

Let's accept the present moment in the development of micro-objects in time as a zero moment of time and we assume that micro-flows at this moment have stopped their movement. Green line on the **X**-axis becomes zero level for counting. Naturally, in the case of downward movement of micro-flows, all micro-flows points is located above micro-objects will determine the future state of micro-objects. But it should be noted that all this would be true only if in the above example, we do not take into account any of external influences on micro-objects.

Then the uppermost points of micro-flows will determine the most remote future states of micro-objects. If we are using incorrect terminology, it can be said this is "a future" for the micro-objects on the micro-flows. If we use the same terminology for micro-flows, they can be called by flows of time passing through all the long-lived micro-objects of our world. Since all matter in our world is made up of microscopic objects, it is also truth relative to us; we can say that we live in this world in time because of time flows, which are passing through us at the speed of light.

In Figure 8, we see parts of micro-flows that have defined the micro-objects in the past time. They are below the green level and have already gone through micro-objects. Therefore, in Fig. 8 red balls located at a short distance relative to the green line are coinciding with the recent past. Red balls are on a farther distance from the green line coincide with the more past time of micro-objects.

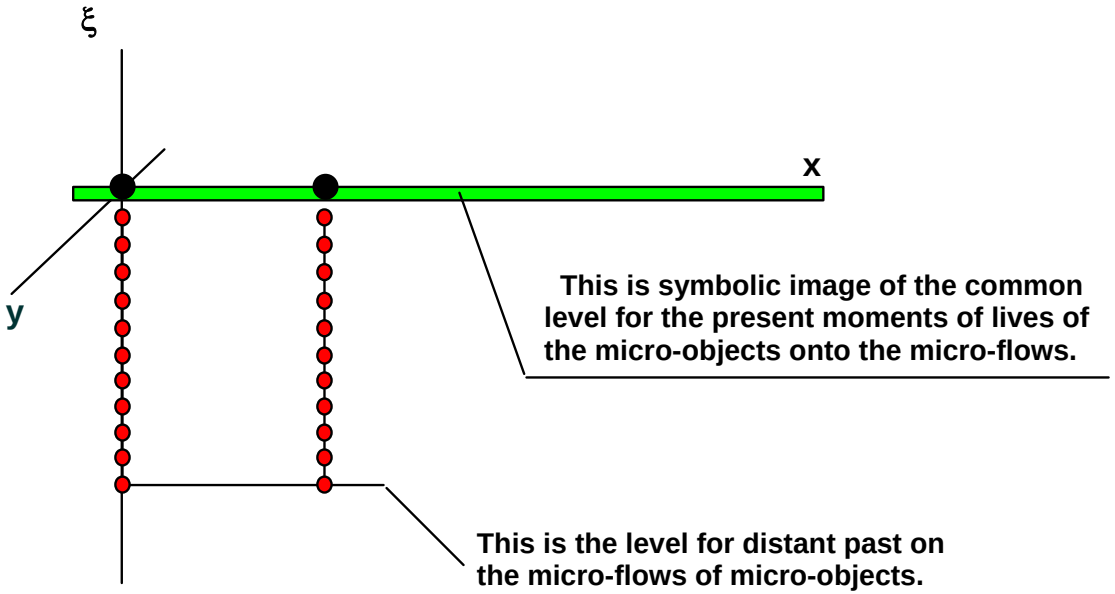


Figure.8

Consequently, the motion of micro-flows to down, as it shown in Figure 9, gives development micro-objects in the direction of the future time. This motion gives a positive time value since in this case the micro-objects have a positive absorption of energy out of the micro-flows.

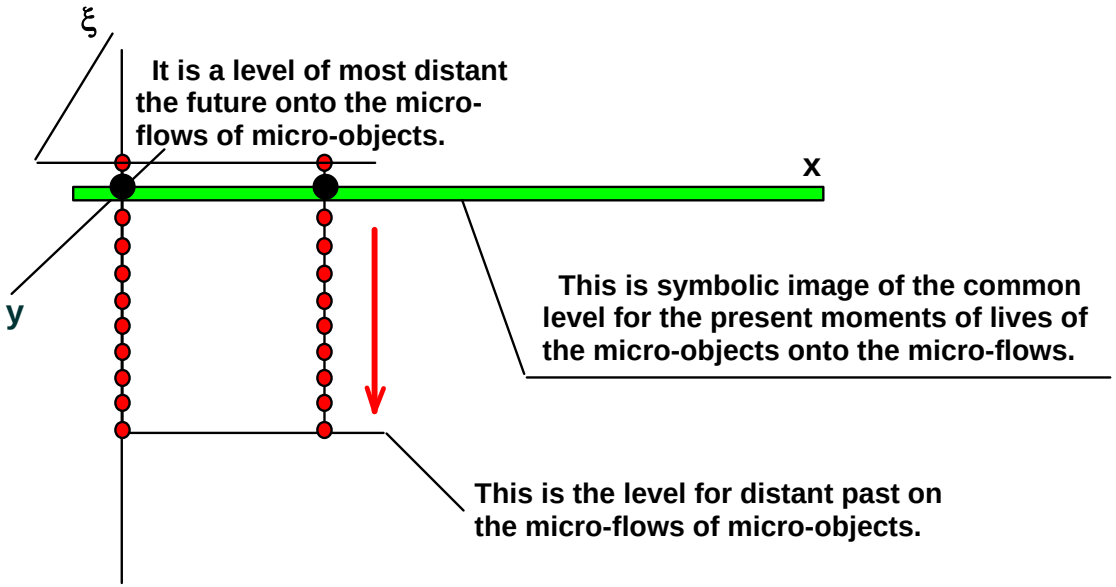


Figure.9

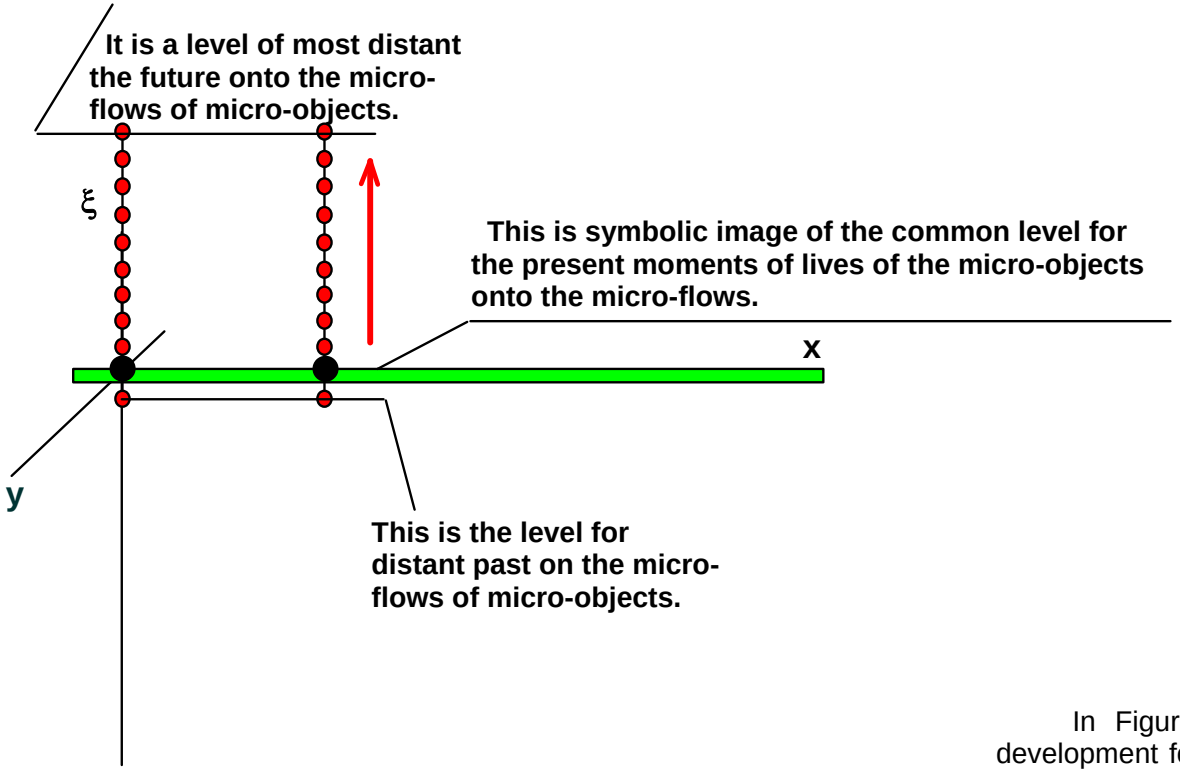


Figure.10

In Figure 10, the upward movement of micro-flows gives development for micro-objects in the direction to the past time. This movement gives a negative amount of time, because micro-objects have negative absorption of energy that is given from micro-flows.

Here we come to the beginning of the presentation of the main part of the study. We shall analyze a time of life for the same micro-objects speeded in our world up to speed **V<C**. The motion of the micro-objects takes place in positive direction of the axis x. Figure 11 clearly shows how time each of two micro-objects, which are equal to each other at the beginning, becomes individualized for each of micro-objects. Let's explain in a few words the physics of this phenomenon. After speeding up, every of micro-flows has incline relative to axis **x**. It takes place because of motions of micro-objects along axis **x**. In order to keep the speed (**c**) of ether, passing through micro-object, the speed ether along axis ξ has to decrease. This speed has to equal to $(c^2 - V^2)^{1/2}$. In this case, the total speed of ether does not change, and it is equal to $c = \{[(c^2 - V^2)^{1/2}]^2 - V^2\}^{1/2}$.

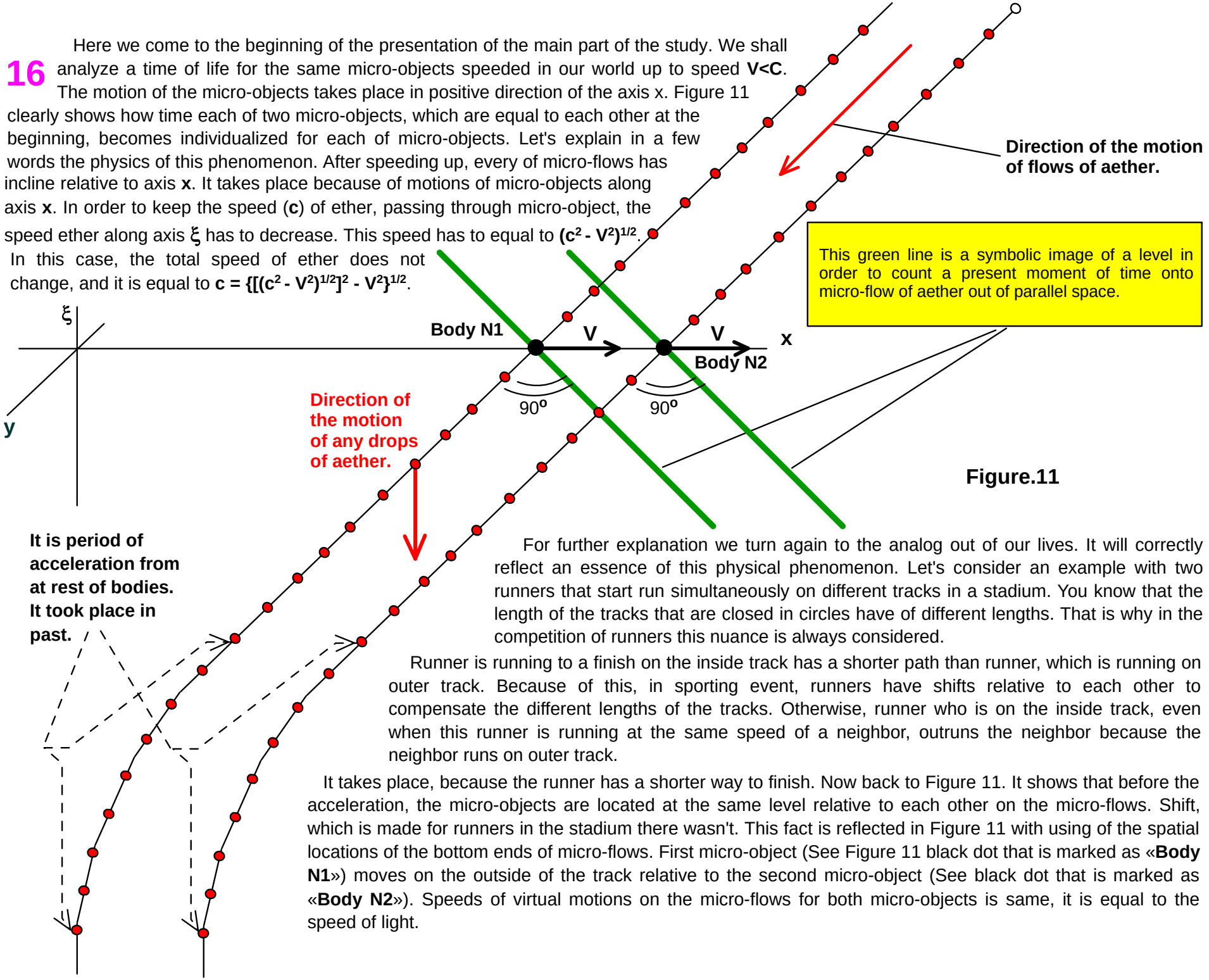


Figure.11

For further explanation we turn again to the analog out of our lives. It will correctly reflect an essence of this physical phenomenon. Let's consider an example with two runners that start run simultaneously on different tracks in a stadium. You know that the length of the tracks that are closed in circles have of different lengths. That is why in the competition of runners this nuance is always considered.

Runner is running to a finish on the inside track has a shorter path than runner, which is running on outer track. Because of this, in sporting event, runners have shifts relative to each other to compensate the different lengths of the tracks. Otherwise, runner who is on the inside track, even when this runner is running at the same speed of a neighbor, outruns the neighbor because the neighbor runs on outer track.

It takes place, because the runner has a shorter way to finish. Now back to Figure 11. It shows that before the acceleration, the micro-objects are located at the same level relative to each other on the micro-flows. Shift, which is made for runners in the stadium there wasn't. This fact is reflected in Figure 11 with using of the spatial locations of the bottom ends of micro-flows. First micro-object (See Figure 11 black dot that is marked as «**Body N1**») moves on the outside of the track relative to the second micro-object (See black dot that is marked as «**Body N2**»). Speeds of virtual motions on the micro-flows for both micro-objects is same, it is equal to the speed of light.

The micro-object «**Body N2**» moves on the inside track, because of this motion it outruns the micro-object «**Body N1**». This occurs despite of the fact that the lengths of micro-flows, ejected by each of micro-objects, are equal to each other. Therefore, with respect to each other, each of micro-objects exists in different times. That's it. And as it will be proved further, this shift of time in mathematical form corresponds exactly to Lorentz transformation.

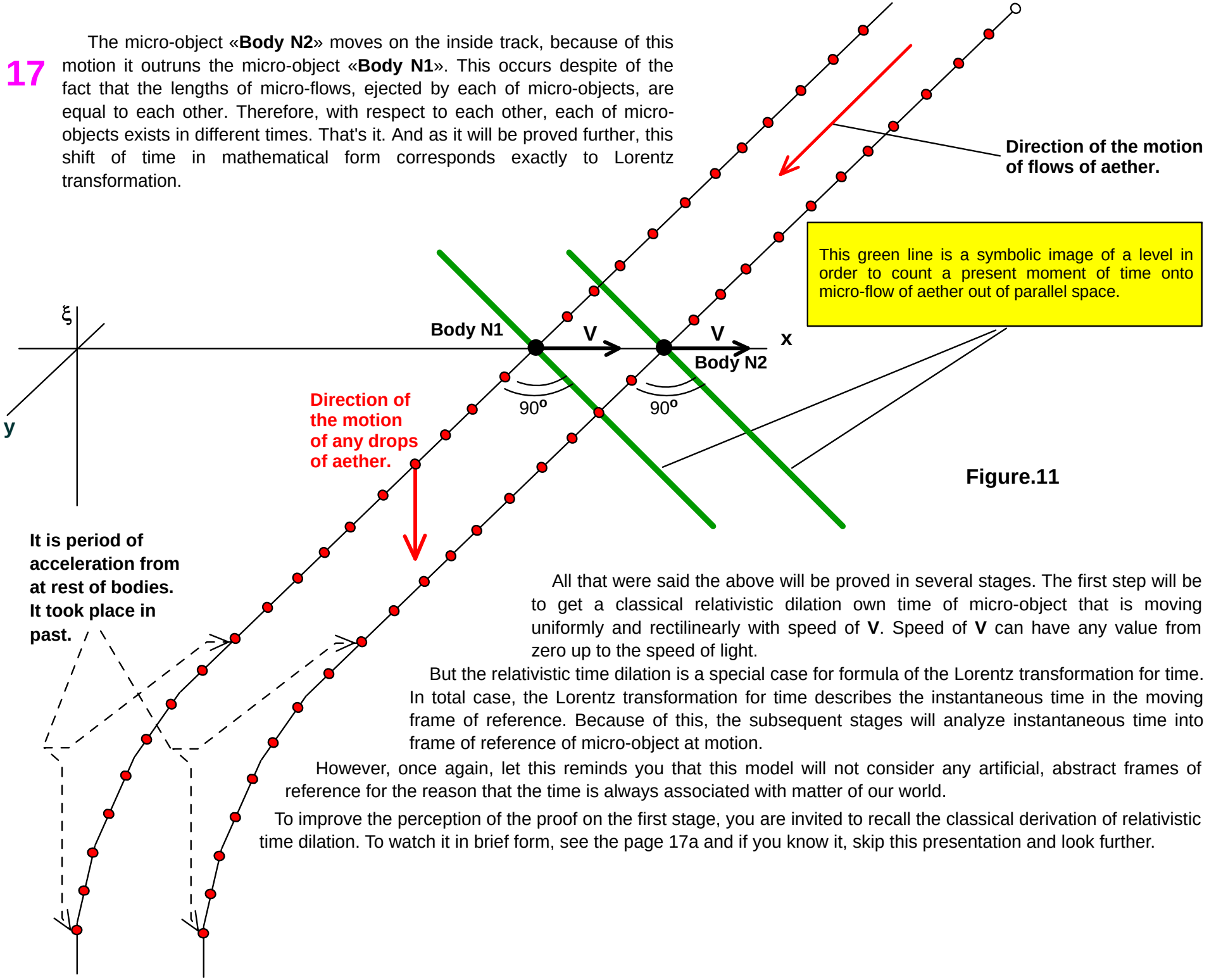


Figure.11

All that were said the above will be proved in several stages. The first step will be to get a classical relativistic dilation own time of micro-object that is moving uniformly and rectilinearly with speed of **V**. Speed of **V** can have any value from zero up to the speed of light.

But the relativistic time dilation is a special case for formula of the Lorentz transformation for time. In total case, the Lorentz transformation for time describes the instantaneous time in the moving frame of reference. Because of this, the subsequent stages will analyze instantaneous time into frame of reference of micro-object at motion.

However, once again, let this reminds you that this model will not consider any artificial, abstract frames of reference for the reason that the time is always associated with matter of our world.

To improve the perception of the proof on the first stage, you are invited to recall the classical derivation of relativistic time dilation. To watch it in brief form, see the page 17a and if you know it, skip this presentation and look further.

It's derivation of relativistic time dilation out of Lorentz transformations.

To calculate the delay time according to the Lorentz transformation for time, let's turn to the moving frame of reference. Let it moves uniformly without rotation in the positive direction of **X**-axis of frame of reference at rest. Suppose that its velocity is equal to the velocity, which can take values from zero up to the speed of light. Time and coordinates of space of moving frame of reference are connected to frame of reference at rest according to the Lorentz transformation:

$$x' = \frac{x - vt}{\sqrt{1 - (v/c)^2}}; \qquad t' = \frac{t - (v/c^2)x}{\sqrt{1 - (v/c)^2}}; \qquad y' = y; \quad z' = z$$

Due to the fact that in the considered variant the Lorentz transformations depend only on **X** and time **t**, the coordinates **Y,Z** in the sequel will not be considered.

Let's analyze in the moving frame of reference period T', which started at time t_1' and ending time is t_2'. Obviously, it is equal to $T' = t_2' - t_1'$. Period T' will be measured for point at rest in the moving frame of reference. Suppose it is in arbitrary place on the positive half of X'-axis. Then, if we consider the time t_1', then it corresponds to the position of the point with the coordinate x_1'. For the time t_2', strictly speaking, the spatial position must correspond to the coordinate x_2'. But because we are considering a point at rest in the moving coordinate system, then $x_1' = x_2'$. In the frame of reference at rest, the period $T = t_2 - t_1$. The magnitude of the link between periods T' and T is unknown. Point at rest inside of the moving frame of reference has motion in frame of reference at rest with speed **v.** This is speed of moving frame of reference. Therefore, at moment of time t_1 the point that is at rest in the moving frame of reference in the frame of reference at rest has the coordinate position x_1. And at time t_2 it has position x_2. Now we find the period T'. To do this let's use the Lorentz transformation for time. It is equal to

$$T' = t_2' - t_1' = \frac{t_2 - (v/c^2)x_2}{\sqrt{1 - (v/c)^2}} - \frac{t_1 - (v/c^2)x_1}{\sqrt{1 - (v/c)^2}} = \frac{(t_2 - t_1) - (v/c^2)(x_2 - x_1)}{\sqrt{1 - (v/c)^2}} \quad (1)$$

We calculate the difference $x_2 - x_1$. It may be defined out of the equality: $x_1' = x_2'$. If for this equality we use the Lorentz transformation, then we obtain

$$\frac{x_1 - vt_1}{\sqrt{1 - (v/c)^2}} = \frac{x_2 - vt_2}{\sqrt{1 - (v/c)^2}}$$

After grouping of homogeneous members we finally find

$$x_2 - x_1 = v(t_2 - t_1)$$

Substituting the difference $x_2 - x_1$ in equation **(1)** we get

$$T' = t_2' - t_1' = \frac{(t_2 - t_1) - (v/c^2)(x_2 - x_1)}{\sqrt{1 - (v/c)^2}} = \frac{(t_2 - t_1) - (v/c^2)v(t_2 - t_1)}{\sqrt{1 - (v/c)^2}} =$$

$$= \frac{(t_2 - t_1) - (v^2/c^2)(t_2 - t_1)}{\sqrt{1 - (v/c)^2}} = \frac{(t_2 - t_1)[1 - (v/c)^2]}{\sqrt{1 - (v/c)^2}} = (t_2 - t_1)\sqrt{1 - (v/c)^2}$$

Taking into account that $T = t_2 - t_1$ is the period in frame of reference at rest, we find the necessary result, which gives the relativistic time of dilation in the moving frame of reference:

$$T' = T\sqrt{1 - (v/c)^2}$$

This proof was made for an arbitrary synchronization of time of frames of reference and their relative position with respect to each other along the axis **X**. In order to simplify of physics of processes in the proposed model, the initial moments of time will be taken zero, i.e. $t_1 = t_1' = 0$ and the values of x_1',x_1 would also take zero.

The physics of relativistic time dilation of elementary mass (micro-object).

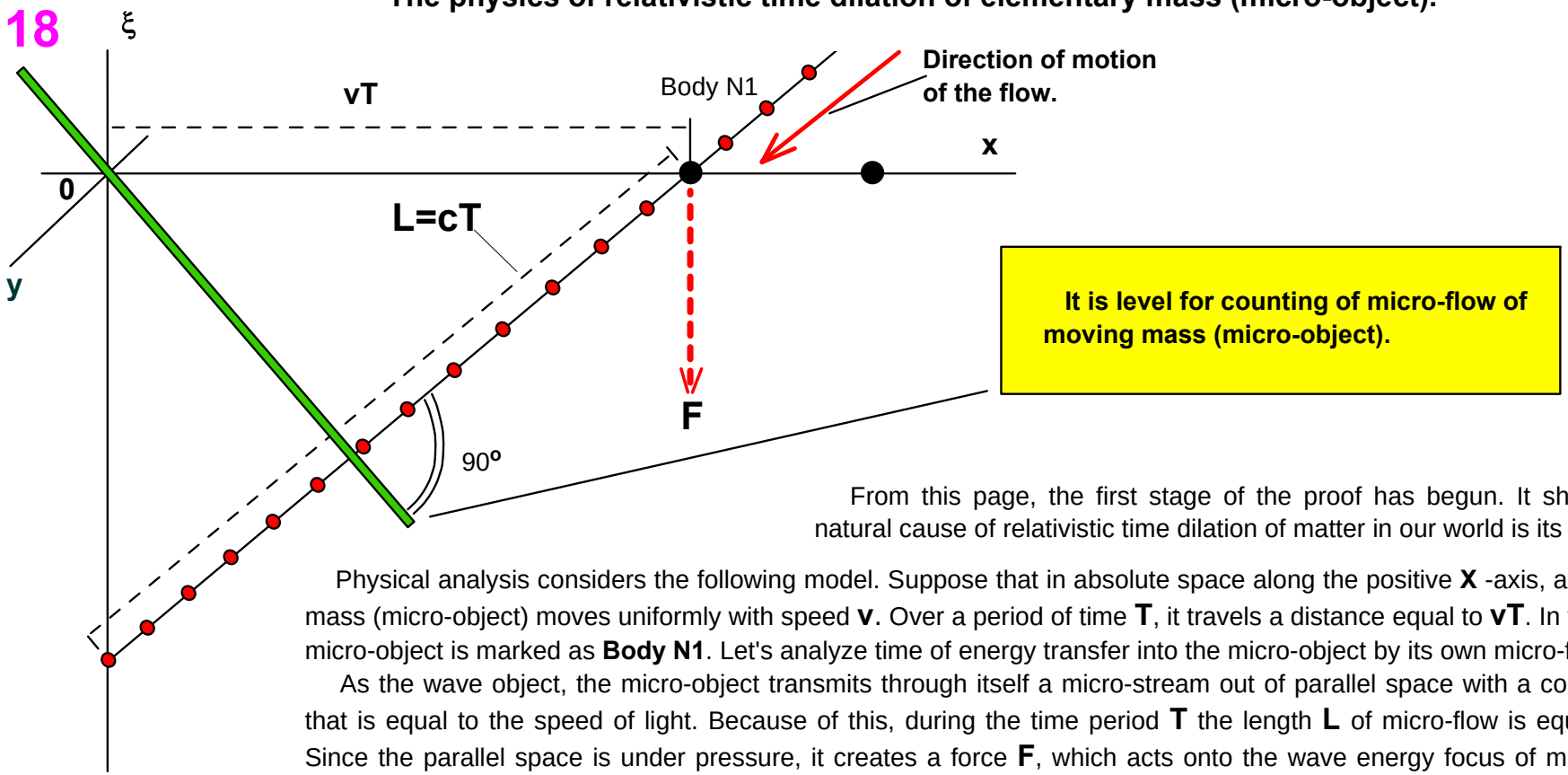


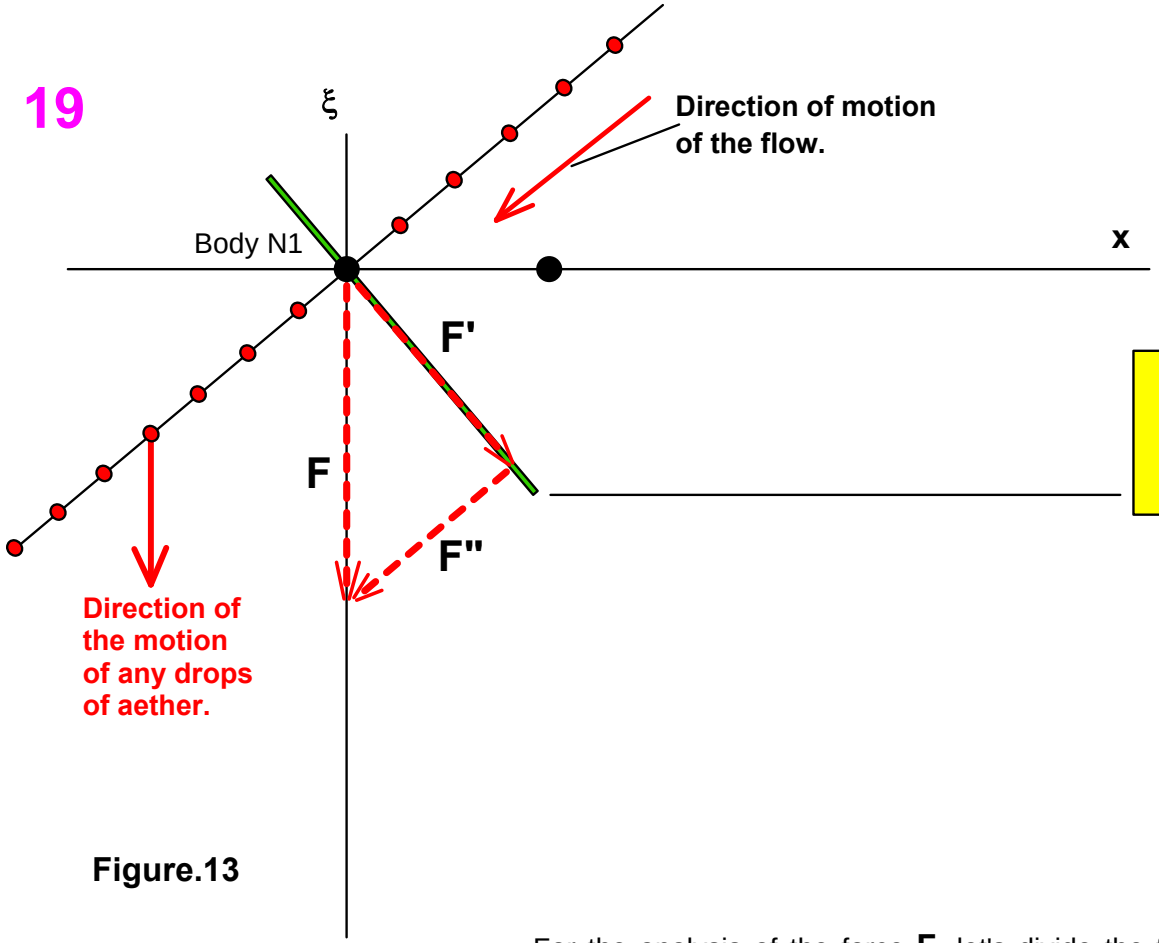
Figure.12

From this page, the first stage of the proof has begun. It shows that the natural cause of relativistic time dilation of matter in our world is its wave nature.

Physical analysis considers the following model. Suppose that in absolute space along the positive **X** -axis, an elementary mass (micro-object) moves uniformly with speed **v**. Over a period of time **T**, it travels a distance equal to **vT**. In figure 12, the micro-object is marked as **Body N1**. Let's analyze time of energy transfer into the micro-object by its own micro-flow.

As the wave object, the micro-object transmits through itself a micro-stream out of parallel space with a constant speed that is equal to the speed of light. Because of this, during the time period **T** the length **L** of micro-flow is equal to **L=cT.** Since the parallel space is under pressure, it creates a force **F**, which acts onto the wave energy focus of micro-object. It occurs because of action of micro-flow. Direction of this force is orthogonal to the space of our world, and the force has exactly same value with which force acted on elementary mass (micro-object) at rest. See analysis that was made on page 7. And since our space is shown in Figure 12 with help of the plane **X,Y**, then this force is perpendicular to the plane **X,Y**. On Figure 12, see flashing red vector that is pointing down. From figure 12 it is also clear that the process occurs only in the plane **ξ,X**, because of this reason, the **Y**-axis is not necessary and we can remove it in further analysis. We will analyze the time of energy transfer out of micro-flow into micro-object from a fixed moment of time. In particular, we begin to consider the time from moment when micro-object was located in the center of the frame of reference. The level for counting of the micro-flow, in this case, must pass through the center of the frame of reference and be a perpendicular to the micro-flow. Figure 12 shows it with help of the green segment.

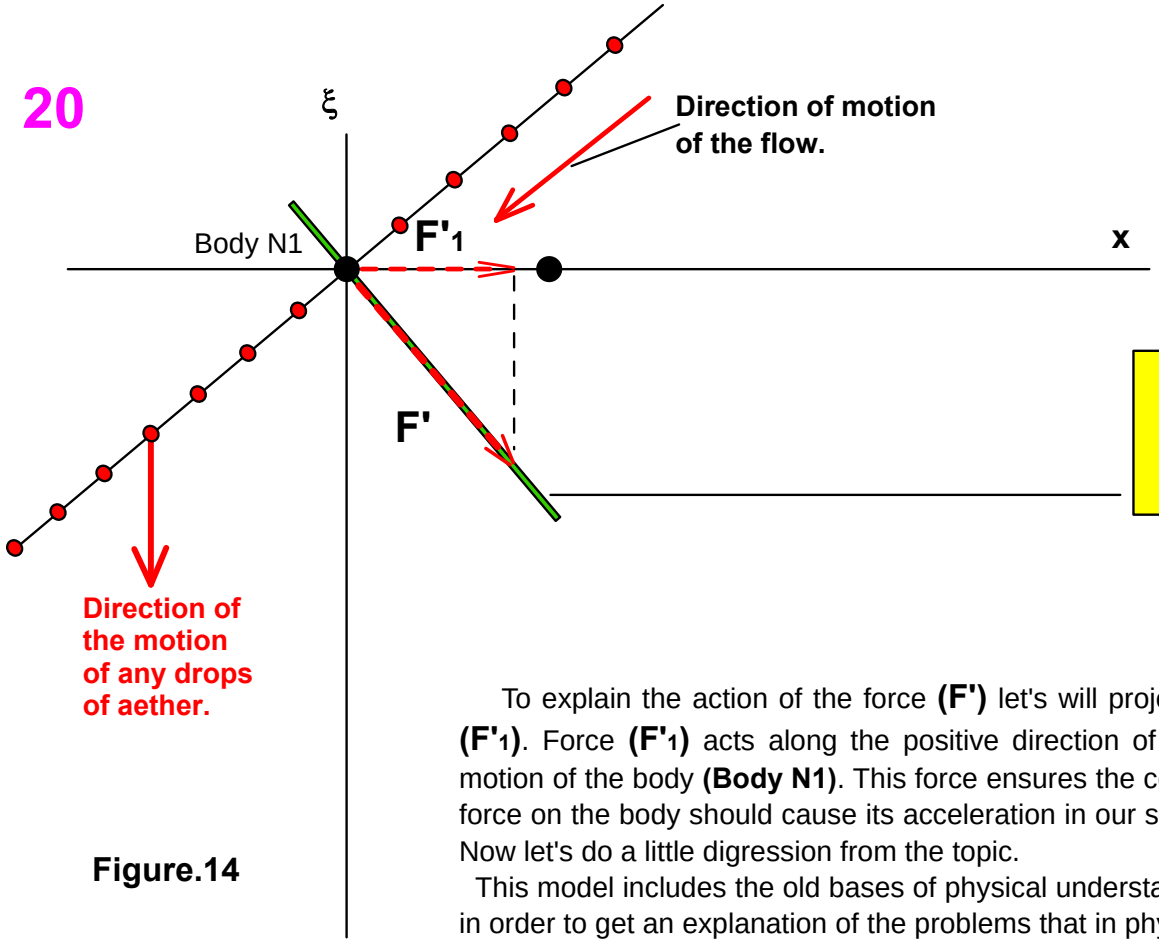
Let's analyze an action that is created by force **F**. This action is divided into two parts. The first action turns into movement of micro-object in our space. The second action is a transmission of energy to the micro-object.



It is level for counting of micro-flow of moving mass (micro-object).

Figure.13

For the analysis of the force **F**, let's divide the force into two components. See Figure 13. Let the first component of the force is acting along the reference level. It is marked by the symbol **(F')**. The second component of the force **F** is acting along the micro-flow. In Figure 13, it is marked with **(F")**. At the beginning let's consider the action of the force **(F')**.



It is level for counting of micro-flow of moving mass (micro-object).

Figure.14

To explain the action of the force **(F')** let's will project this force on the **X**-axis. On Figure 14, it is marked with **(F'1)**. Force **(F'1)** acts along the positive direction of the **X**-axis and its direction coincides with the direction of motion of the body **(Body N1)**. This force ensures the constant movement of the body. But the constant action of the force on the body should cause its acceleration in our space. Why the body is not accelerating, we will discuss later. Now let's do a little digression from the topic.

This model includes the old bases of physical understanding of the world and complements them with new add-ons in order to get an explanation of the problems that in physics the old model could not explain. In particular, before the advent of the theory of relativity, in physics the model of absolute space for our physical world was widely used. But this model was associated with many contradictions. For example, one of the biggest challenges has been the problem associated with resistance aether. So, in the nineteenth century, scientists had realized that if they recognize existence of the absolute aether for our space, then it would make impossible inertial motion of physical bodies. This problem they could not overcome under existing model aether. In this model there could not be inertial motion due to the fact that aether of our space should have resistance. It must stop inertial motion of any of physical bodies in a vacuum.

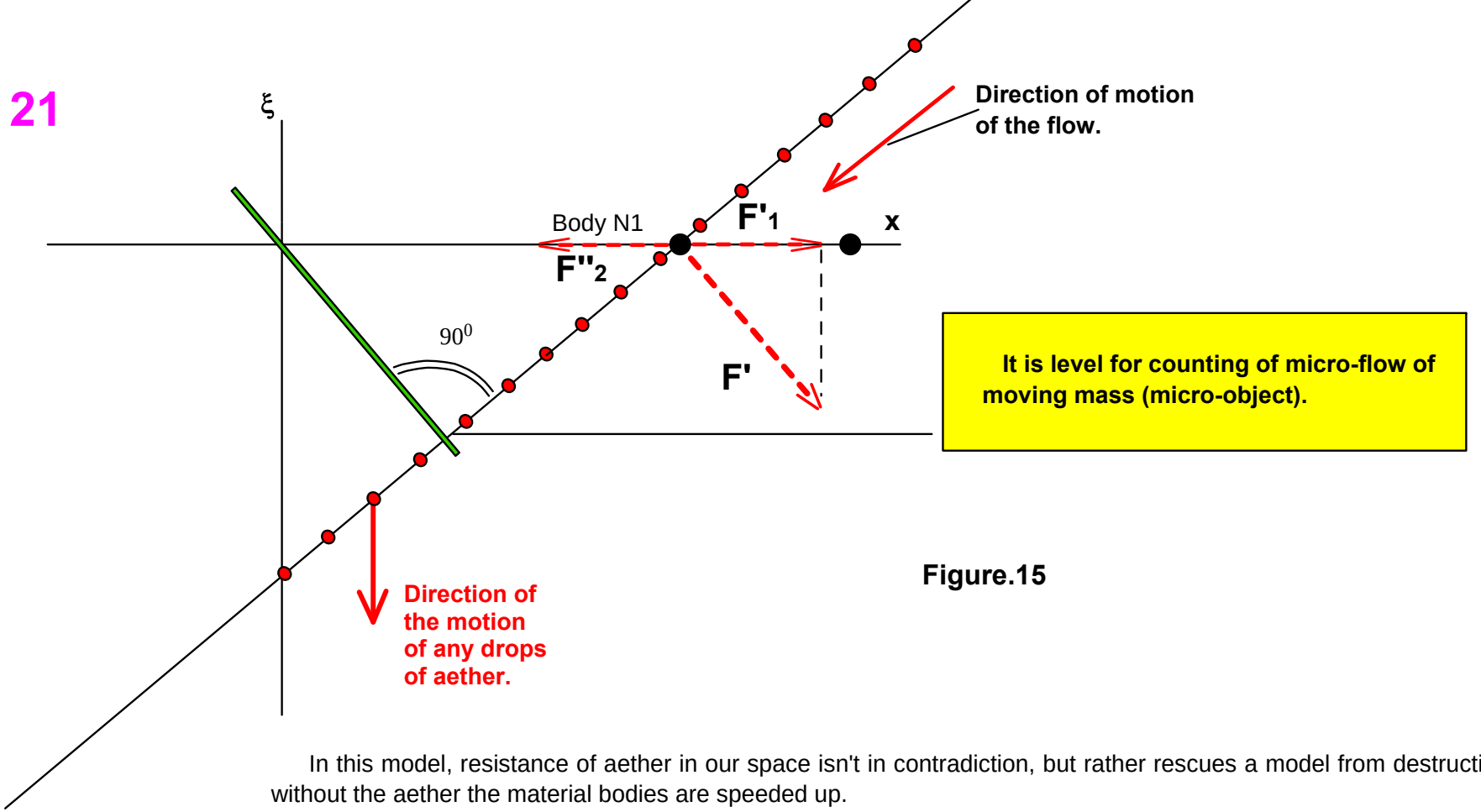


Figure.15

In this model, resistance of aether in our space isn't in contradiction, but rather rescues a model from destruction because without the aether the material bodies are speeded up.

Now, refer to Figure 15. It shows that the force (**F'₁**) is compensated by **reaction force from wave focus** of micro-object and by the force of resistance aether of our space. The sum these forces is the force (**F"₂**). The balance of forces shown in Figure 15 doesn't give acceleration. It gives inertial motion of material bodies of our world.

This kind of movement exists thanks to the energy out of the parallel space. It allows to move material objects of our world at inertia. Naturally that at motion, only remaining part of the energy micro-stream out of parallel space can support existence for focus of the micro-object. Because of this, the velocity of flow of life of a micro-object is slowing down, as its wave energy focus is required more time to obtain the same amount of energy (quantum of energy) out of parallel space. The wave focus needs this quantum of energy in order to be able to move from one state to another in time.

Look carefully to figure 15. It shows that the aether out of parallel space has moved downwards. Movement of micro-flow through micro-object can be divided into two components, which together provide the initial motion. The first component of the micro-flow motion will move micro-object in our world. In our simplified version of the presentation, this is occurred along the **X**-axis. The second component will transmit energy into micro-object. To improve the readability further explanation, the Figure 15 is rotated so that the green level will be a horizontal.

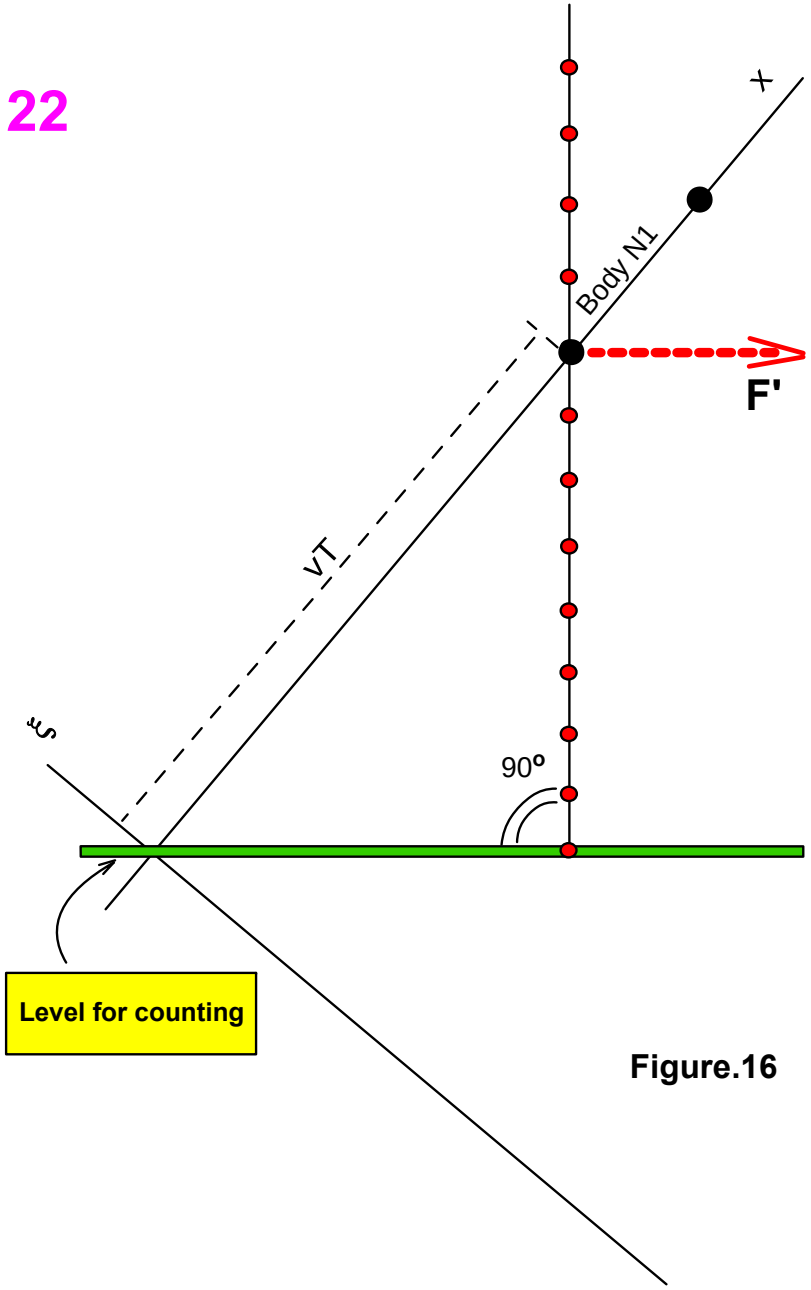


Figure.16

In Figure 16 you see motion of the first component of micro-flow. Micro-object (**Body N1**) moves along the **X**-axis under action of the force of micro-flow. Note that the first component of the micro-flow travels along the reference level and is not falling over the other side of level down. The energy of this component is used to the physical movement of micro-object in our world.

As a rough comparison, here you can make an analogy with the motion of a sailing ship on the water. Imagine that Figure 16 is a plan view of the movement of a sailing vessel. Vessel corresponds with the micro-object «**Body N1**». Force vector is shown with help of red vector. Wind blows from the left to the right. Then figure 16 will reflect the movement of sailing vessel under the influence of crosswind. A detailed analysis of the physics for this movement in this part of the work will not be performed. The aim of this work is different. It is analysis of energy that is transmitted to a micro-object for development in time. Now we come back again to the division of micro-flow force out of parallel space.

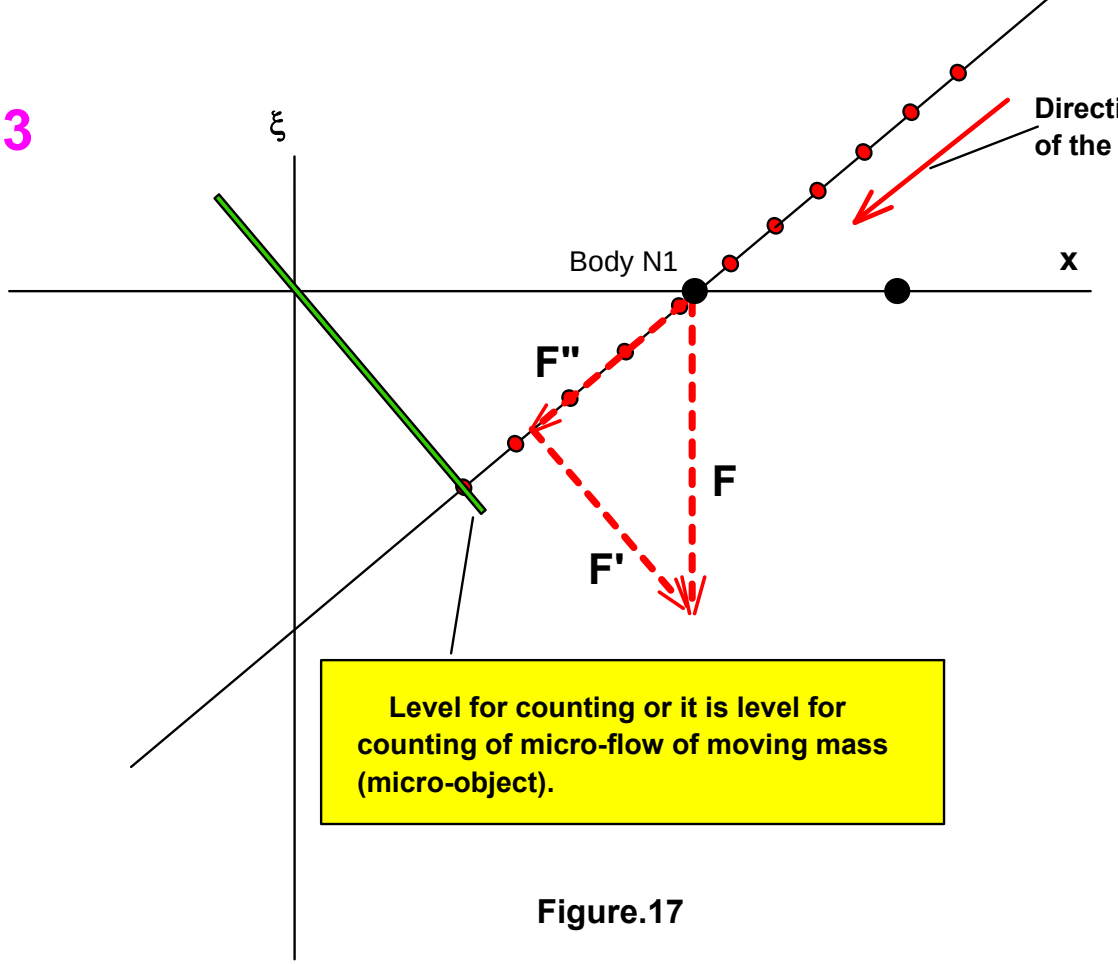


Figure.17

We have to analyze the effect of force **(F")**. See Figure 17. The direction of this force coincides with the direction of movement the micro-flow through micro-object. To view the process of the action of the force, the next drawing will be rotated counterclockwise in order to have horizontal level for counting.

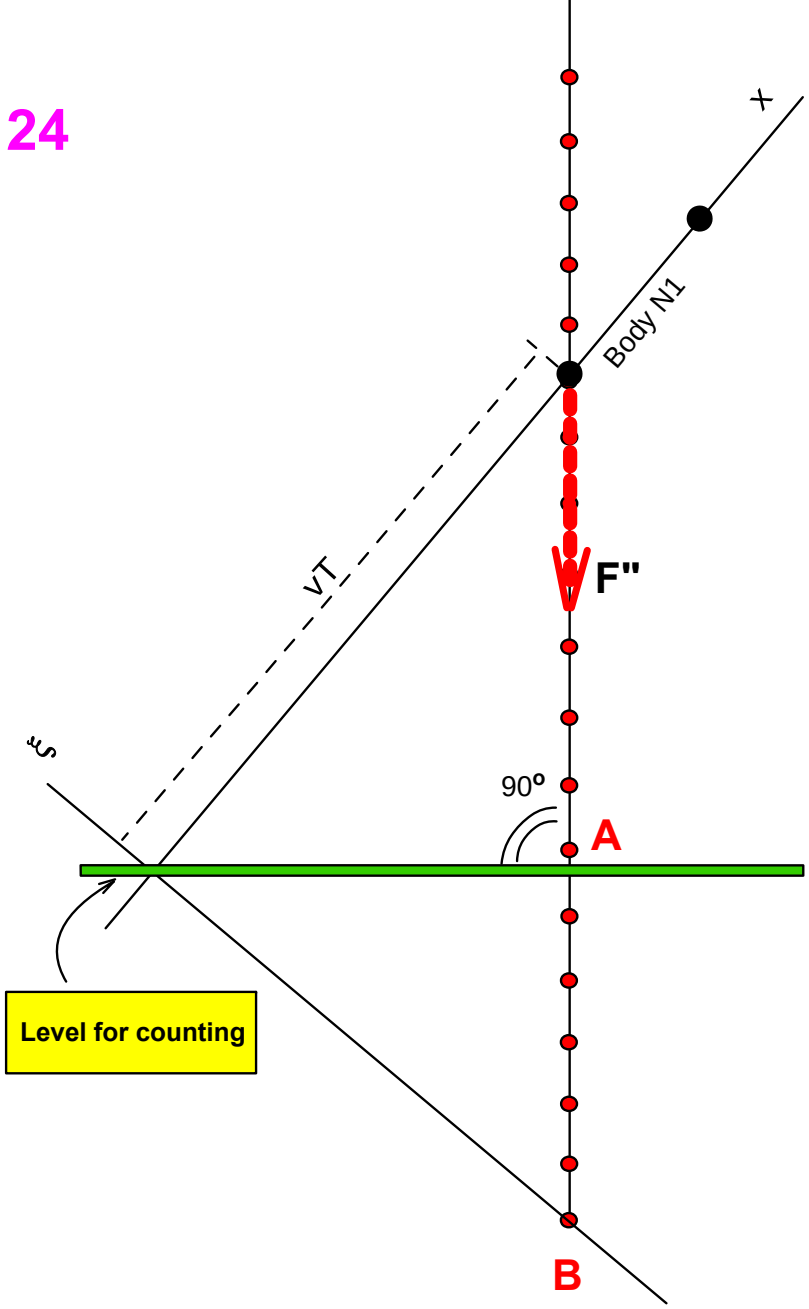


Figure.18

Figure 18 shows that micro-object (**Body N1**) is at rest but micro-flow moves downwards due to the force **(F")** and transmits its energy to the micro-object. This process is similar to the energy transfer from the micro-flow to micro-object that is at rest. See page 7. Difference exists only for lengths of the micro-flows here and there. In Figure 18, the length is shorter and it is equal to **AB**. This means that micro-object receives minimal development time because the micro-flow has a shorter length. And moreover, the force **(F")** is only part of the force of parallel space. These two factors don't give micro-object quickly get the full quantum of energy that is required to move it into the same state of time, which micro-object at rest has already had. Because of this, the micro-object at motion has delayed development of own time. Further we consider factor that reduces transmission of energy out of micro-flow to micro-object at motion. It occurs due to the fact that the force **(F")** is part of the force out of parallel space. It can calculate with help of different mathematical approaches, which will give the same result. In this work it is introduced through changes in metrics of energy activity of micro-flow. The proof will be done by analysis of action of force out of parallel space.

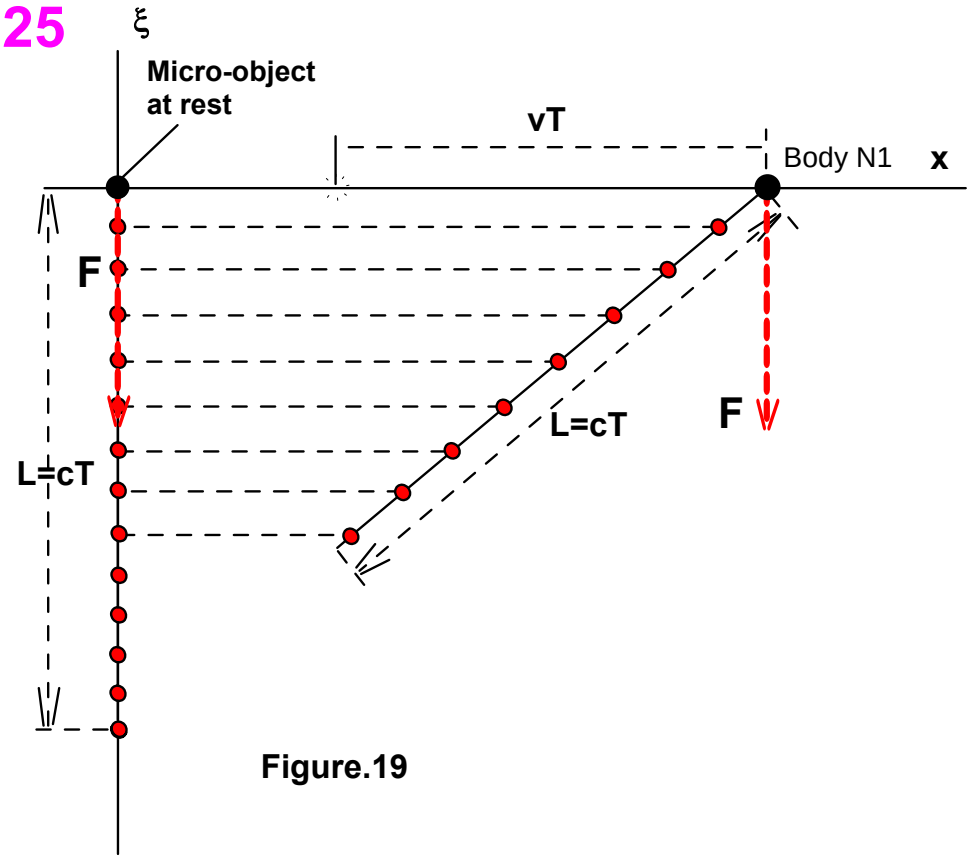


Figure.19

To understand the process, see Figure 19. There are two micro-objects. One of these is at rest. It is located left. Second micro-object (**Body N1**) is moving with velocity **v<c**, and it begins to move from an arbitrary point selected on the **x**-axis. For the period **T** each of micro-objects passes through itself micro-flow with length that is equal to **L=cT**. For micro-object at rest, force action out of parallel space coincides with the direction of motion of the micro-flow. In this case, the effect of the force is a maximum, and activity of energy of metric of the micro-flow is a minimally shortest and coincides with the spatial metric.

For micro-object at motion (**Body N1**), direction of movement of the micro-flow doesn't coincide with the direction of the force **F** out of parallel space. Therefore, the activity of energy of micro-flow has decreased. See Figure 19. In figure 19 dotted lines mark equal levels of transmissions energy from micro-flows to any of the micro-objects. These levels indicate that they mark more elongated segments on the micro-flow of micro-object, which has a motion. It takes place if we compare the vertical micro-flow of micro-object at rest with micro-flow of micro-object at motion. Therefore, when micro-object at rest passes through itself micro-flow with length **L=cT**, then this micro-object has thirteen of energy levels. At the same time, the micro-object at motion has only eight levels which are located on the same length of the micro-flow. Because of this the length of micro-flow of the micro-object at motion becomes shorter in the new metric of energetic activity. In general, the length of the micro-flow in the new metric of energetic activity becomes equal to

$$L' = L * [1 - (V/c)^2]^{1/2}$$. (**c** - is speed of light and **L** is equal to **L=cT**).

To see the mathematical proof, look at the page 25a.

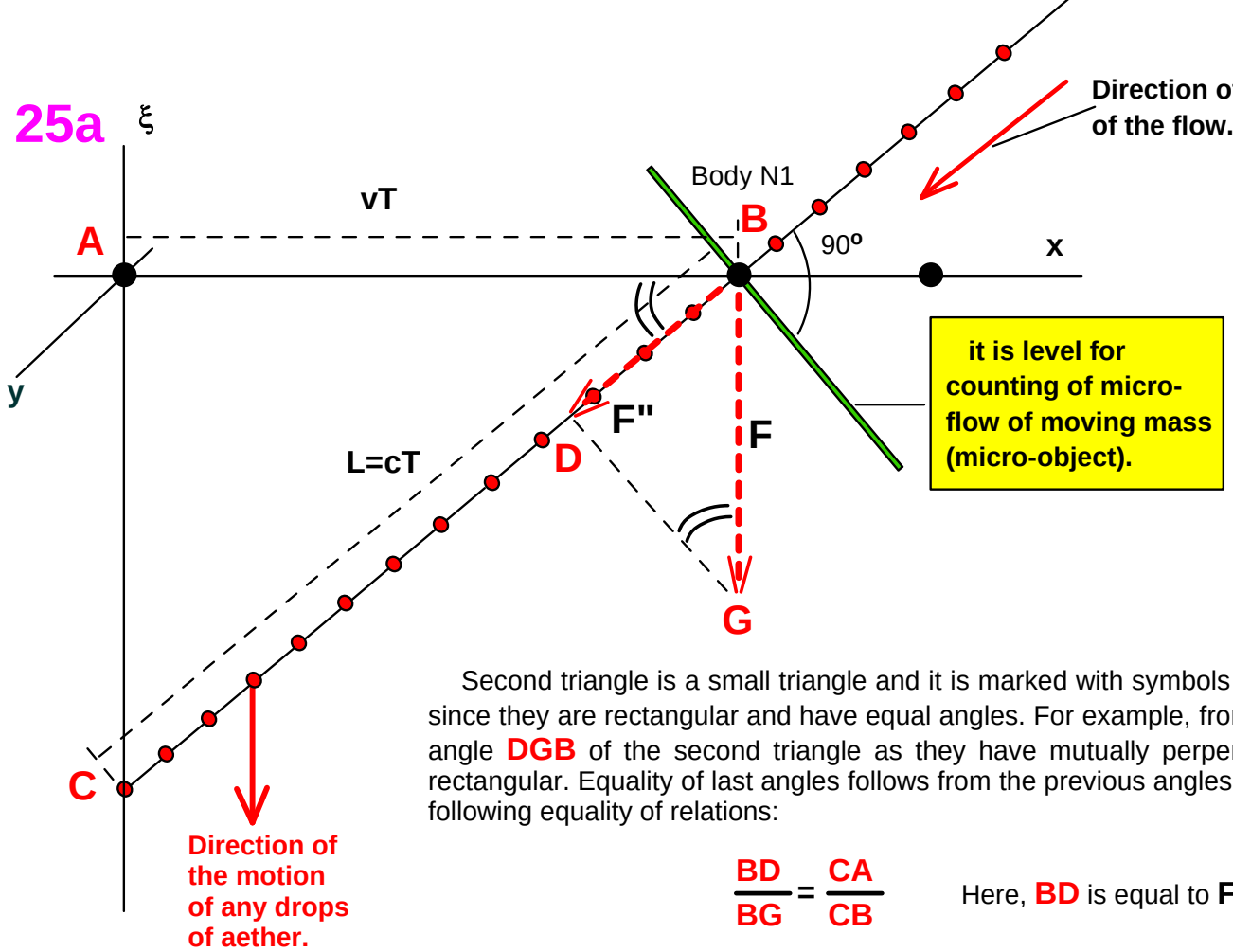


Figure.20

Getting the formula $L' = L * [1- (V/c)^2]^{1/2}$ is the goal of this proof.

Here, **c** is speed of light and **L=ct**. Value (**L'**) is the length of the micro-flow (**L**) in the new metric of activity of energy. Since the energy depends on the force **F"** of the micro-flow, let's find its value. This force can be determined from the two triangles. See Figure 20. First triangle is the big triangle, it is marked with symbols **ABC**.

Second triangle is a small triangle and it is marked with symbols **DBG**. These triangles are similar to each other, since they are rectangular and have equal angles. For example, from the first triangle the angle **ABC** is equal to the angle **DGB** of the second triangle as they have mutually perpendicular sides. Next angles of the triangles are rectangular. Equality of last angles follows from the previous angles. From similarity of triangles, we can consider the following equality of relations:

$$\frac{BD}{BG} = \frac{CA}{CB}$$

Here, **BD** is equal to **F"**, **BG** is equal to **F.**

The length **CB** is equal to **L=cT**. See the Figure **20**. The length **CA** can be found from the triangle **ABC**. It is equal to $CA = [(CB)^2 - (AB)^2]^{1/2} = cT[1 - (V/c)^2]^{1/2}$. If we use all these values, then it is found

$$\frac{BD}{F} = \frac{cT*[1 - (V/c)^2]^{1/2}}{cT} \quad \text{or} \quad BD = F\ [1 - (V/c)^2]^{1/2} = F".$$

The last expression defines the value of the force **F"**.

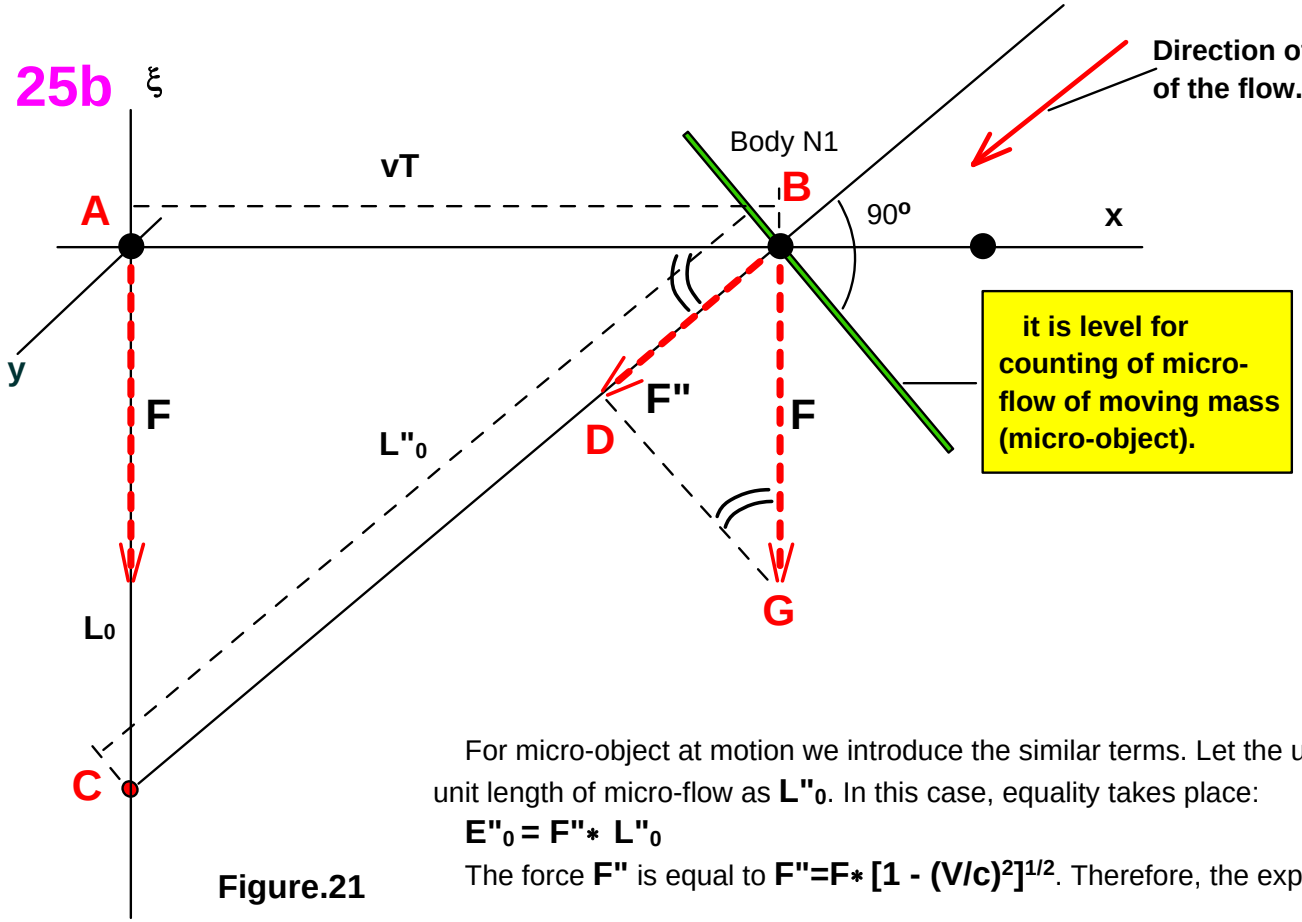


Figure.21

Knowing the force **(F")**, we can determine the energy that is transferred into micro-object out of micro-flow of any length. Using this, let's find the relations between lengths of micro-flows, which are capable to transmit units of energy into micro-objects at rest and at motion.

Let's denote by symbol E_0 a unit of energy transmitted out of micro-flow of micro-object that is at rest. This energy is transmitted micro-flow a fixed length. Take it as a micro-flow unit length and denote as L_0. Then we have the equality:

$$E_0 = F * L_0.$$

For micro-object at motion we introduce the similar terms. Let the unit of energy is denoted as $E"_0$. Let's denote a unit length of micro-flow as $L"_0$. In this case, equality takes place:

$$E"_0 = F" * L"_0$$

The force **F"** is equal to $F"=F * [1 - (V/c)^2]^{1/2}$. Therefore, the expression for the unit of energy will be equal to

$$E"_0 = F * [1 - (V/c)^2]^{1/2} * L"_0$$

Equating the two units of energy to each other $E_0 = E"_0$ let's define the relationships between the units of length micro-flows.

$E_0 = F * L_0 = E"_0 = F * [1 - (V/c)^2]^{1/2} * L"_0$ or it can be written $F * L_0 = F * [1 - (V/c)^2]^{1/2} * L"_0$. From this equation we finally obtain the necessary relation for units of micro-flows:

$$L"_0 = \frac{L_0}{[1 - (V/c)^2]^{1/2}}$$

Relationships between units of the micro-flows we can clearly see in Figure 21.

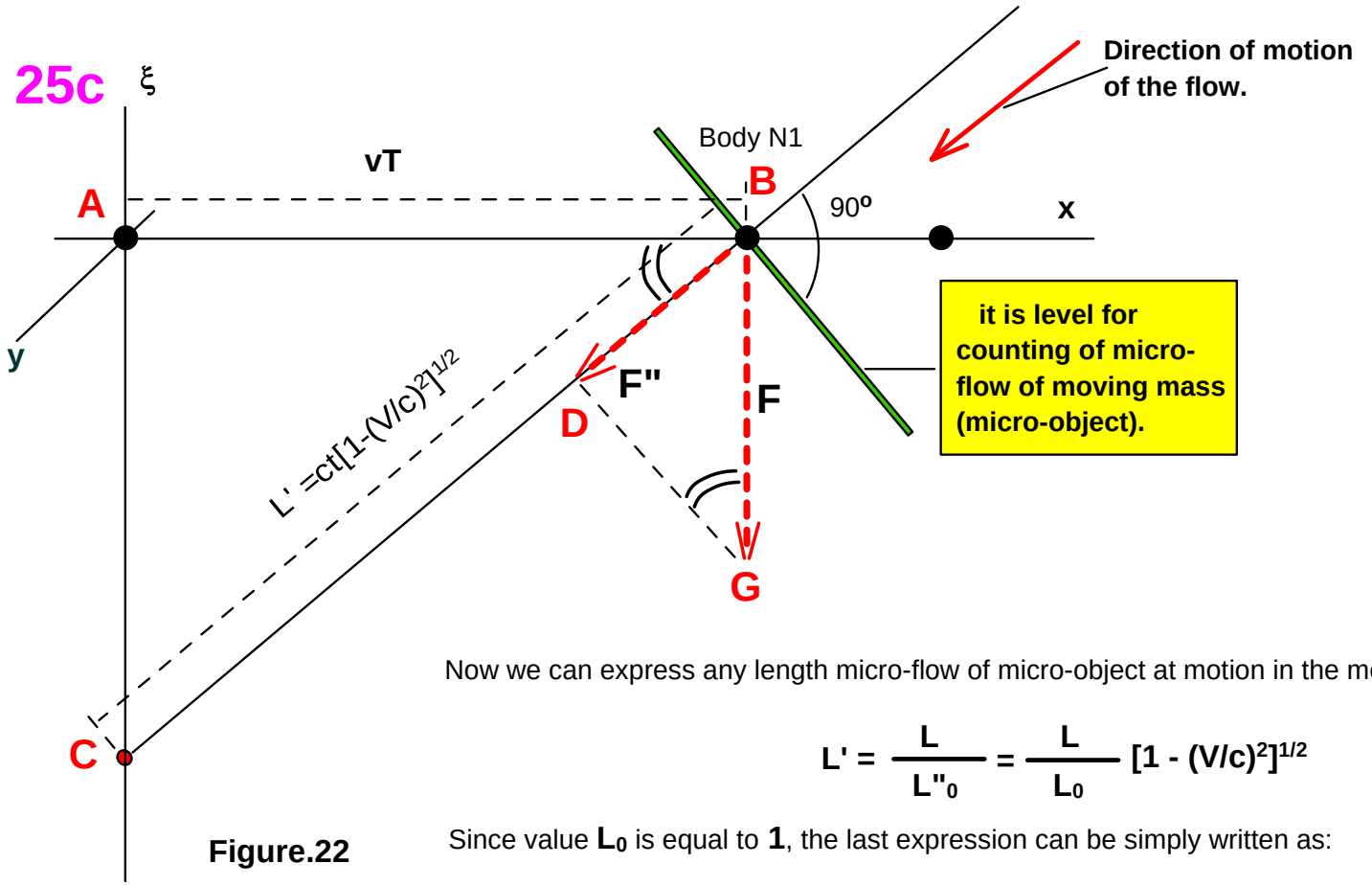


Figure.22

Now we can express any length micro-flow of micro-object at motion in the metric of energetic activity. It is equal to

$$L' = \frac{L}{L''_0} = \frac{L}{L_0}\,[1 - (V/c)^2]^{1/2}$$

Since value L_0 is equal to **1**, the last expression can be simply written as:

$$L' = L * [1-(V/c)^2]^{1/2}.$$

The last expression is to be proved. It can be used to translate any length **L** in the new metric **L'** without repetition of the similar mathematical calculations. The figure 22 shows the length of micro-flow that is equal to **L = ct** becomes shorter in the new metric under action of the relativistic root. The proof is over.

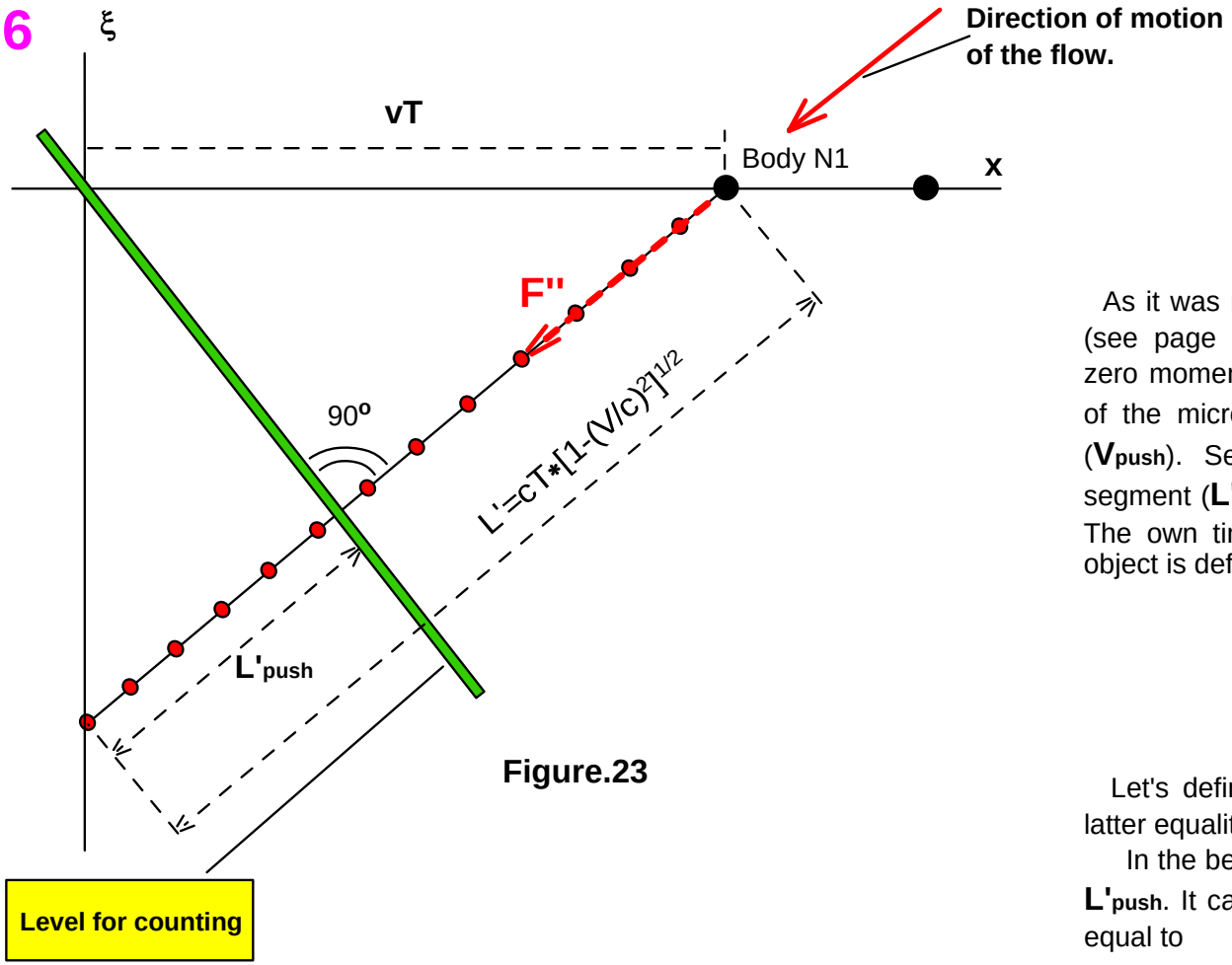


Figure.23

As it was noted in the previous analysis (see page 24), the period of time from zero moment is determined by the length of the micro-flow (L'_{push}) and speed of (V_{push}). See Figure 23. There is the segment (L'_{push}). It is marked by flashes. The own time of development of micro-object is defined as

$$T' = \frac{L'_{push}}{V_{push}}$$

Let's define the unknown values in the latter equality.

In the beginning we define the length of L'_{push}. It can be proved that this length is equal to

$$L'_{push} = [L - (V/c)*VT] *[1- (V/c)^2]^{1/2}.$$

To view the proof, please look at the page 26a.

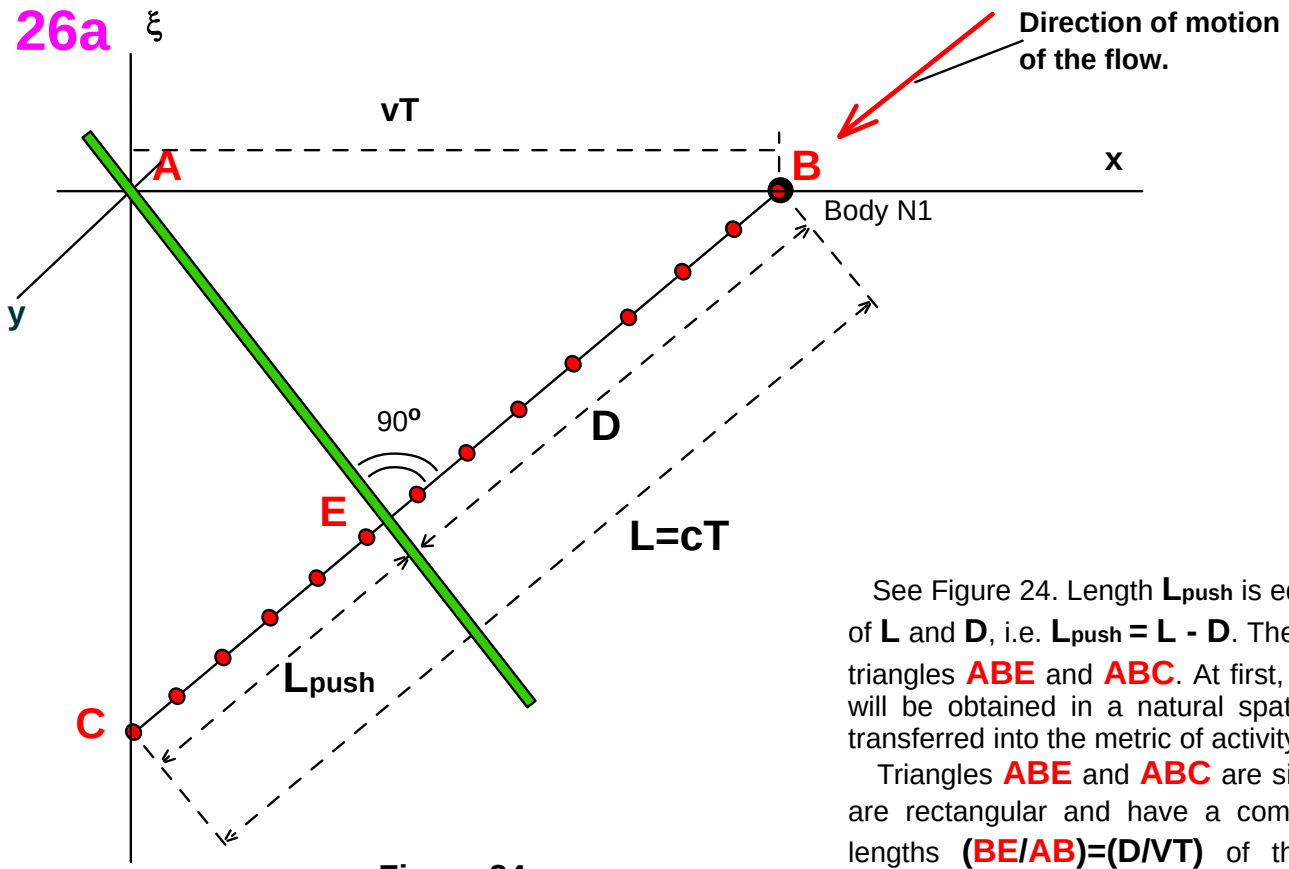


Figure.24

See Figure 24. Length L_{push} is equal to the difference between the lengths of **L** and **D**, i.e. $L_{push} = L - D$. The length **D** can be determined from similar triangles **ABE** and **ABC**. At first, all the lengths needed for the final result will be obtained in a natural spatial metrics. And after, the end result is transferred into the metric of activity of energy of the micro-flow.

Triangles **ABE** and **ABC** are similar to each other, since these triangles are rectangular and have a common angle. Therefore, the ratio of two lengths **(BE/AB)=(D/VT)** of the first triangle is equal to the ratio **(AB/BC)=(VT/L)** of the second triangle.

Hence it is **(D/VT)=(VT/L)** or **D=(VT/L)VT.** The length is **L=ct.** Substituting this value, we obtain **D=(VT/cT)VT=(V/c)VT.** If in equality $L_{push} = L - D$, we substitute the value **D** and after, we translate equality into metric of activity of energy, then we derive finally the value L_{push}:

$$L'_{push} = [L - (V/c) * Vt] * [1 - (V/c)^2]^{1/2}.$$

The last result must be proved.

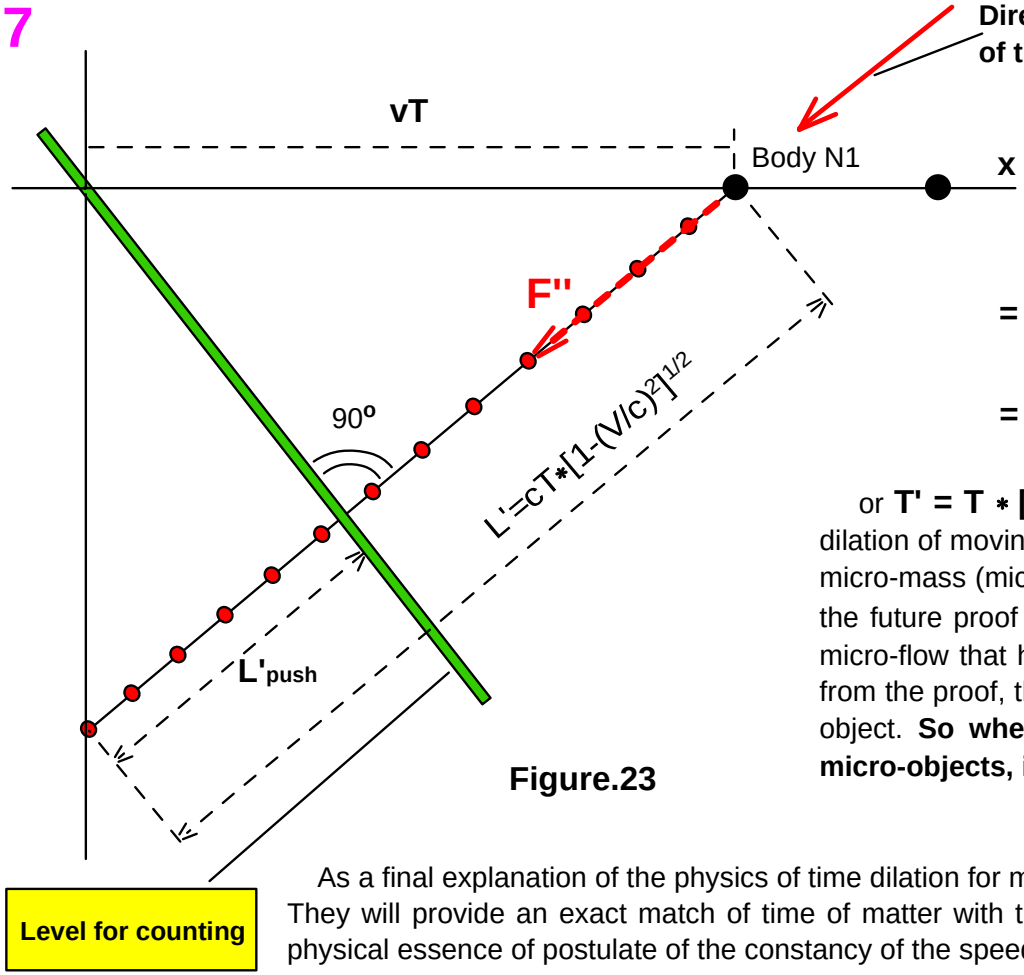


Figure.23

Speed (V_{push}) is equal to $V_{push} = c - V^2/c = c[1 - (V/c)^2]$. To view the proof, please look at the page 27a.

Now, we can define $T' = (L'_{push}/ V_{push}) =$

$$= \frac{(L- (v/c)*vT)*[1-(V/c)^2]^{1/2}}{c[1 - (V/c)^2]} = \frac{(L/c - (v^2/c^2)T)* [1-(V/c)^2]^{1/2}}{1 - (V/c)^2} =$$

$$= \frac{(T - (v^2/c^2)T)* [1-(V/c)^2]^{1/2}}{1 - (V/c)^2} = T*[1-(V/c)^2]^{1/2}$$

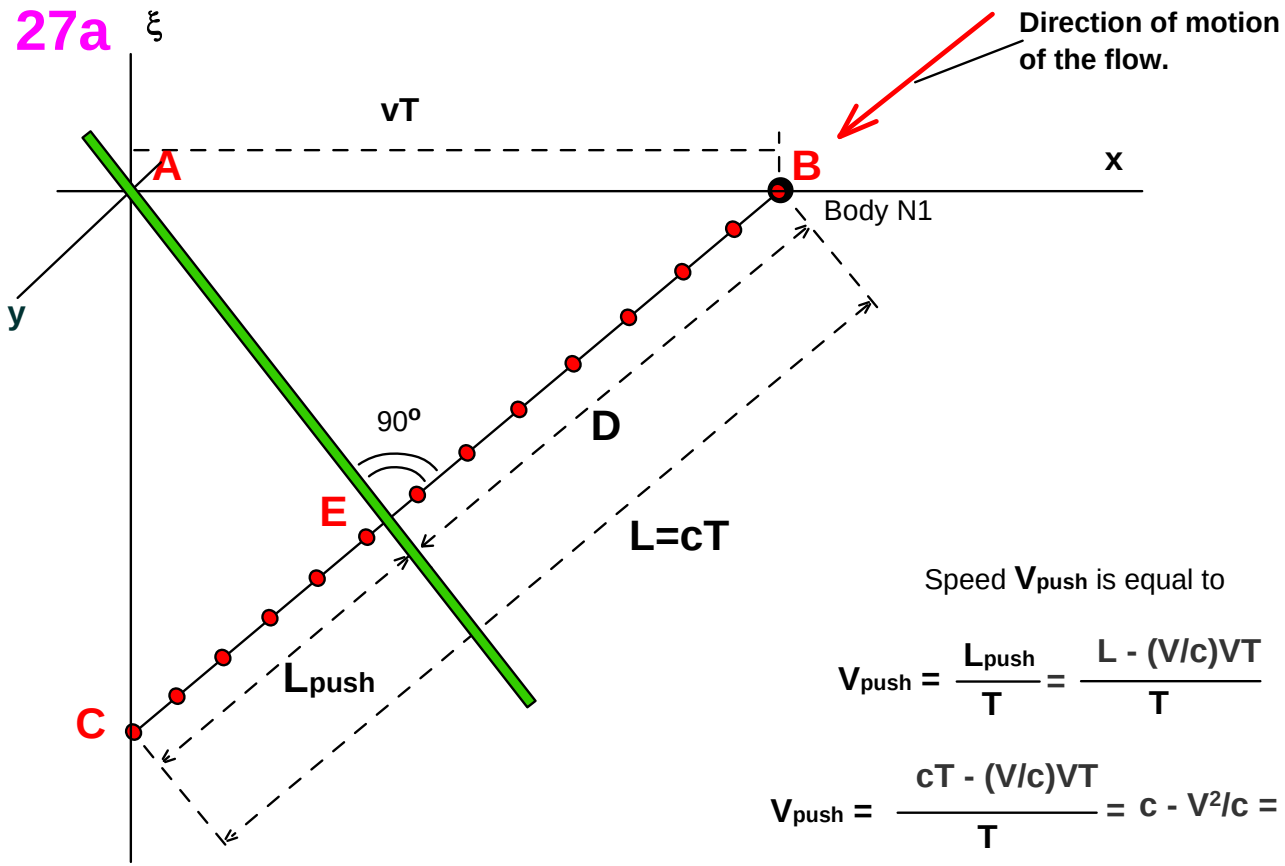
or $T' = T * [1-(V/c)^2]^{1/2}$. The last expression is known as the relativistic time dilation of moving frame of reference. And it coincides with own time of elementary micro-mass (micro-object) at motion. Here, we must highlight one feature because the future proof will use it. In Figure 23, the velocity (V_{push})) is equal to speed micro-flow that has flowing down through the level of counting. As it was obvious from the proof, this velocity determines the speed of passage of time of this micro-object. **So when in future proofs we will analyze the shifts of time other micro-objects, it is necessary to use that speed.**

As a final explanation of the physics of time dilation for material micro-objects in this model, I emphasize three main factors. They will provide an exact match of time of matter with the known Lorentz transformation for time. Besides they open the physical essence of postulate of the constancy of the speed of light in an inertial frame of reference that is moving in a straight line at a constant speed without rotation.

The first factor is a factor weakening of action of the force parallel space on material micro-objects. The force weakens its action in according with the law of the relativistic root.

The second factor is the redistribution of energy of this force between the motion and the development of micro-object in time.

The third factor is the ability of micro-object to keep in the same value the ability to absorb energy out of parallel space at motion or at rest. This ability is a consequence of the wave properties of the focus. It has inverse of motion. The speed of this motion is always equal to the light speed. This occurs regardless of the fact that the wave energy focus is at rest or it is at motion in our space.



Speed V_{push} is equal to

$$V_{push} = \frac{L_{push}}{T} = \frac{L - (V/c)VT}{T}$$

$$V_{push} = \frac{cT - (V/c)VT}{T} = c - V^2/c = c[1 - (V/c)^2]$$

The proof is over.

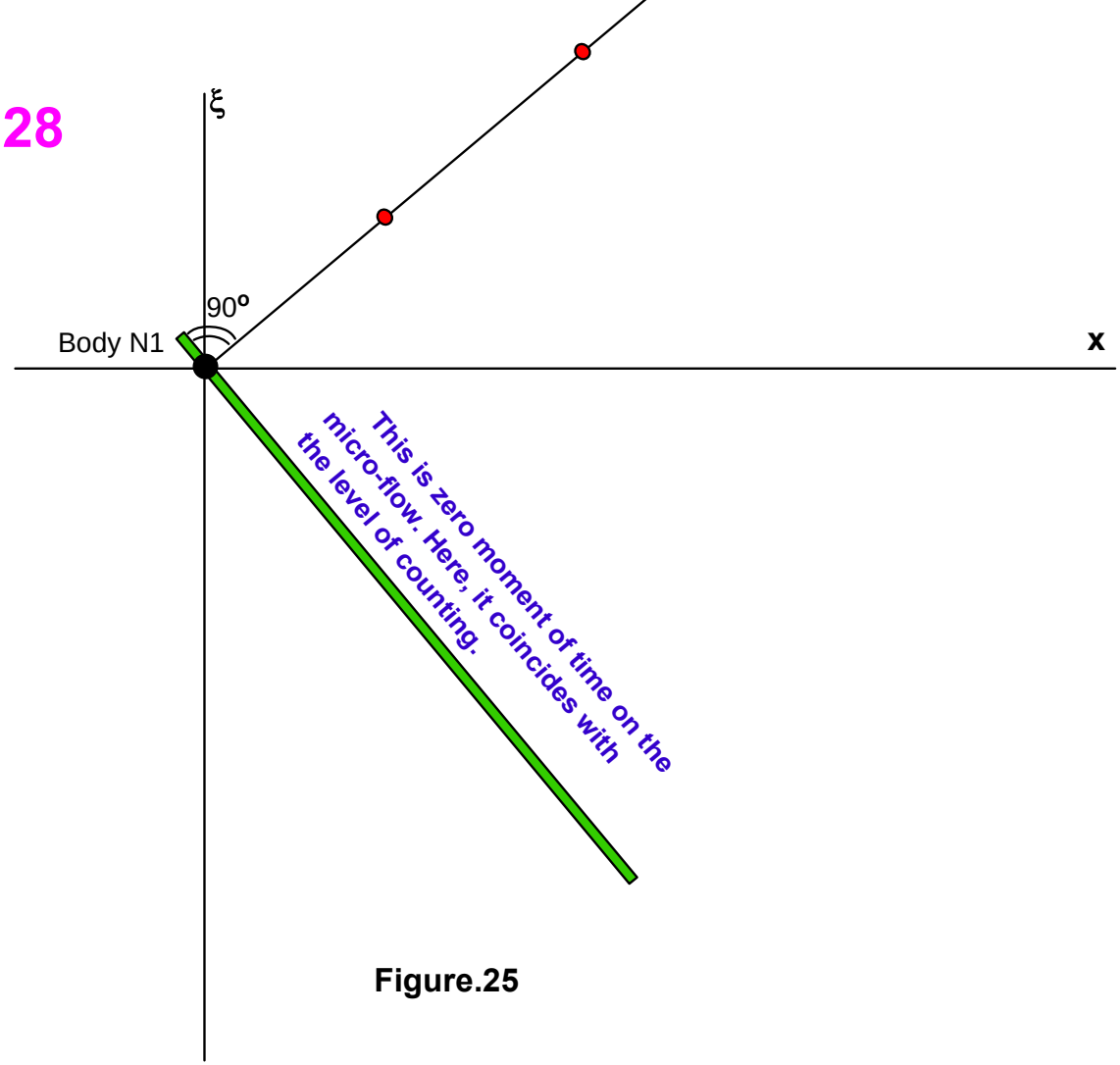


Figure.25

Here in Figure 25, a visual interpretation shows a demonstration for changing of the metric of time of micro-object that is moving.

For analysis, let's take a moment of time, when micro object is placed in the center of the frame of reference. This moment of time, we equate to zero. From the fixed moment and so on, we consider the lengths of time transitions that exist on the micro-flow relative to counting level (green line). On the micro-flow, there are red small balls. For this example, let's suppose when the length of the micro-flow that is passed through micro-object is equal to the distance between the red small balls, the micro-object has received a unit of energy. If we compare length of micro-flow that has passed through the counting level (green line) and the distance between the red small balls on the micro-flow, then it becomes clear how the change of metrics of micro-flow takes place.

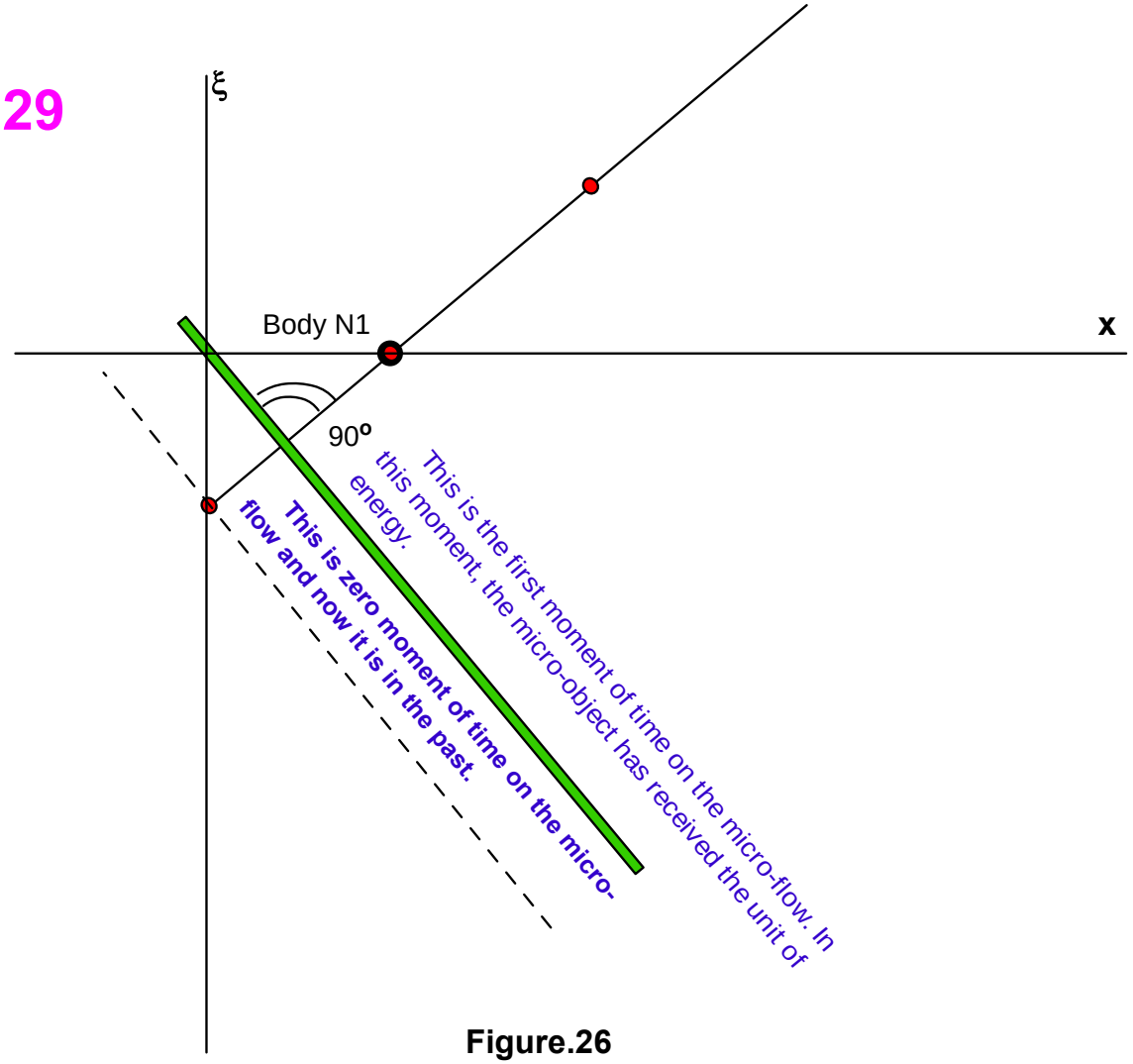


Figure.26

Figure 26 shows the first moment in time when micro-object received the first unit of energy. Micro-flow has passed through micro-object, its length is equal to the spacing between the two red small balls. Part of the energy is spent into motion, and the remaining part goes into the development of time. Because of it, below the level of counting there is only a short length of the micro-flow.

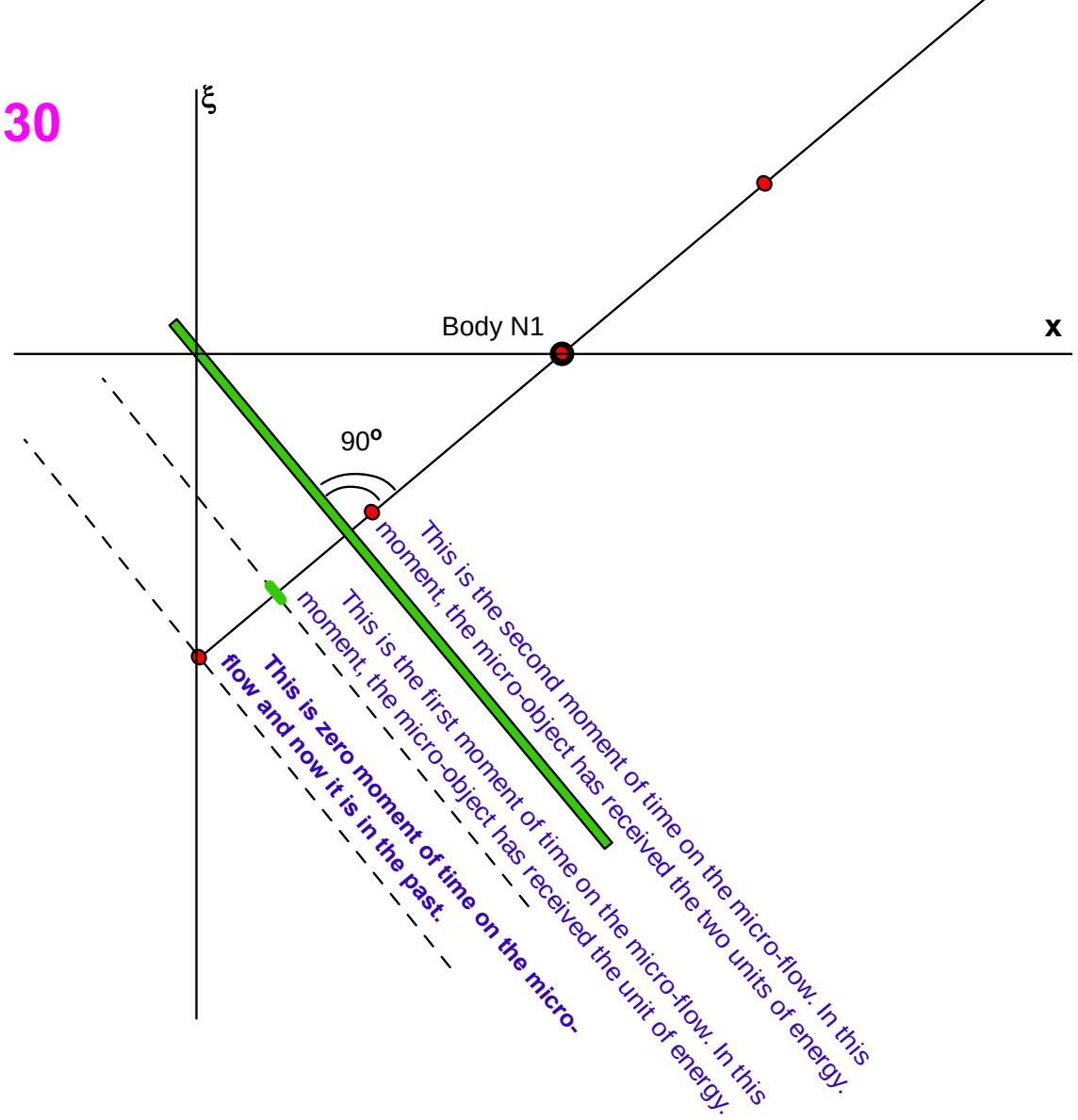


Figure.27

In Figure 27, we can already see the time period includes the two moments in time when micro-object has received two units of energy from the parallel space. In Figure 27, this is reflected by two red small balls on a micro-flow are located below micro-object.

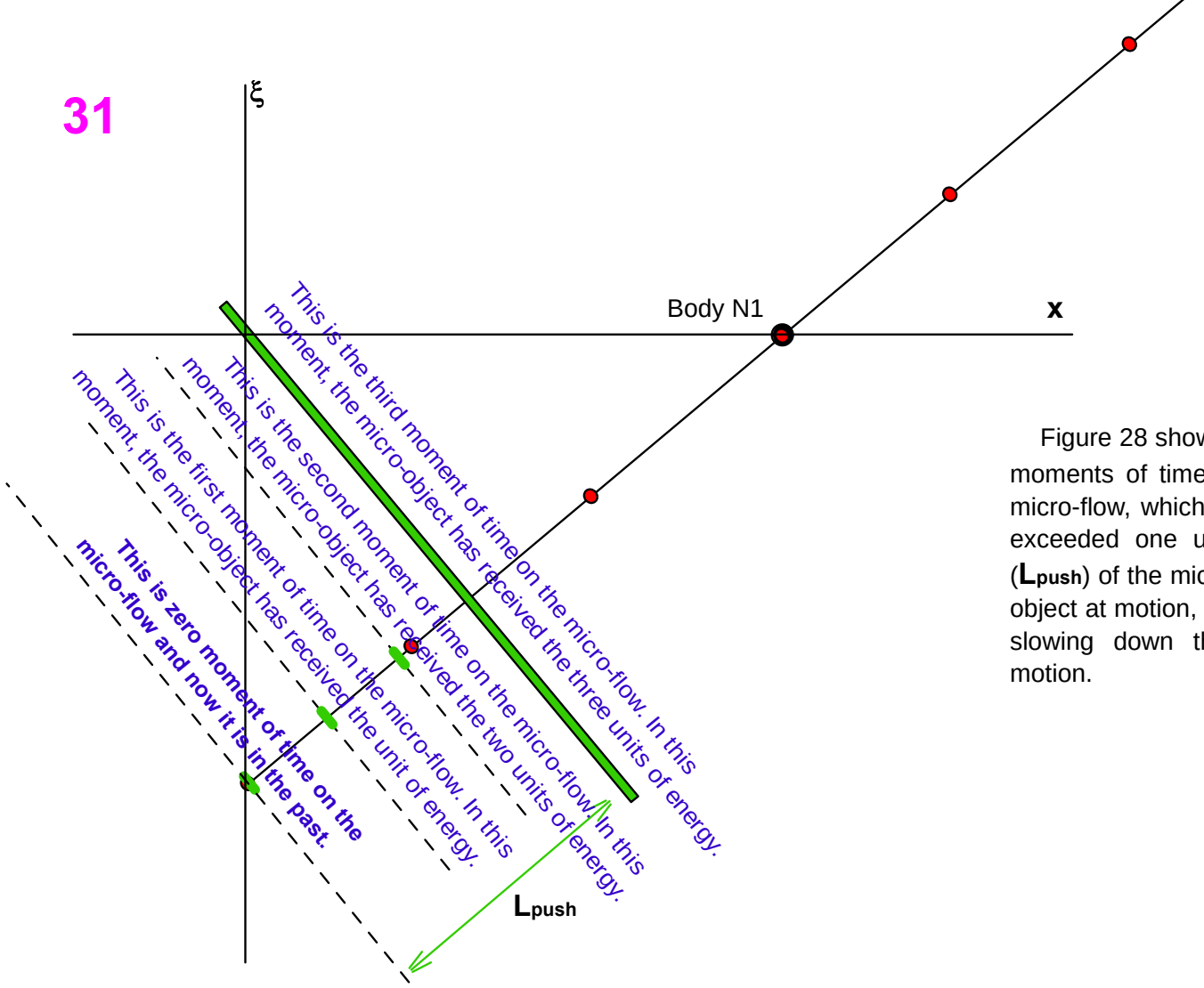


Figure.28

Figure 28 shows the time period, which has included three moments of time. Only now the total length (L_{push}) of the micro-flow, which has passed through the level (green line), exceeded one unit of the total energy. Since the length (L_{push}) of the micro-flow is associated with the time of micro-object at motion, then Figure 28 clearly shows the process of slowing down the development time of micro-object at motion.

Lorentz transformations for the time, as a consequence of the wave properties of physical matter in our world.

Before starting the proof, let's analyze some of the properties of the Lorentz transformation in direct mathematical analysis. Let's analyze the Lorentz transformation as mathematical formula.

$$t' = \frac{t - (v/c^2)x}{[1-(v/c)^2]^{1/2}}$$

This analysis will help us more accurately to understand the physical processes that will be considered in this model. Lorentz transformation gives the relationship between the instantaneous values of time of the two frames of reference at motion and at rest. Instantaneous time in the moving reference system depends on two variables **t** and **x**. To understand the impact of these variables onto time **t'** we can lock a variable, such as **t**. Then, changing the second variable **x**, we'll see how time (**t'**) is changed along the **x**-axis. Initially, in the frame of reference at rest we take the value of time is equal to zero, that is **t=0**. Then the Lorentz transformation becomes

$$t' = \frac{-(v/c^2)x}{[1-(v/c)^2]^{1/2}} \qquad \textbf{(a)}$$

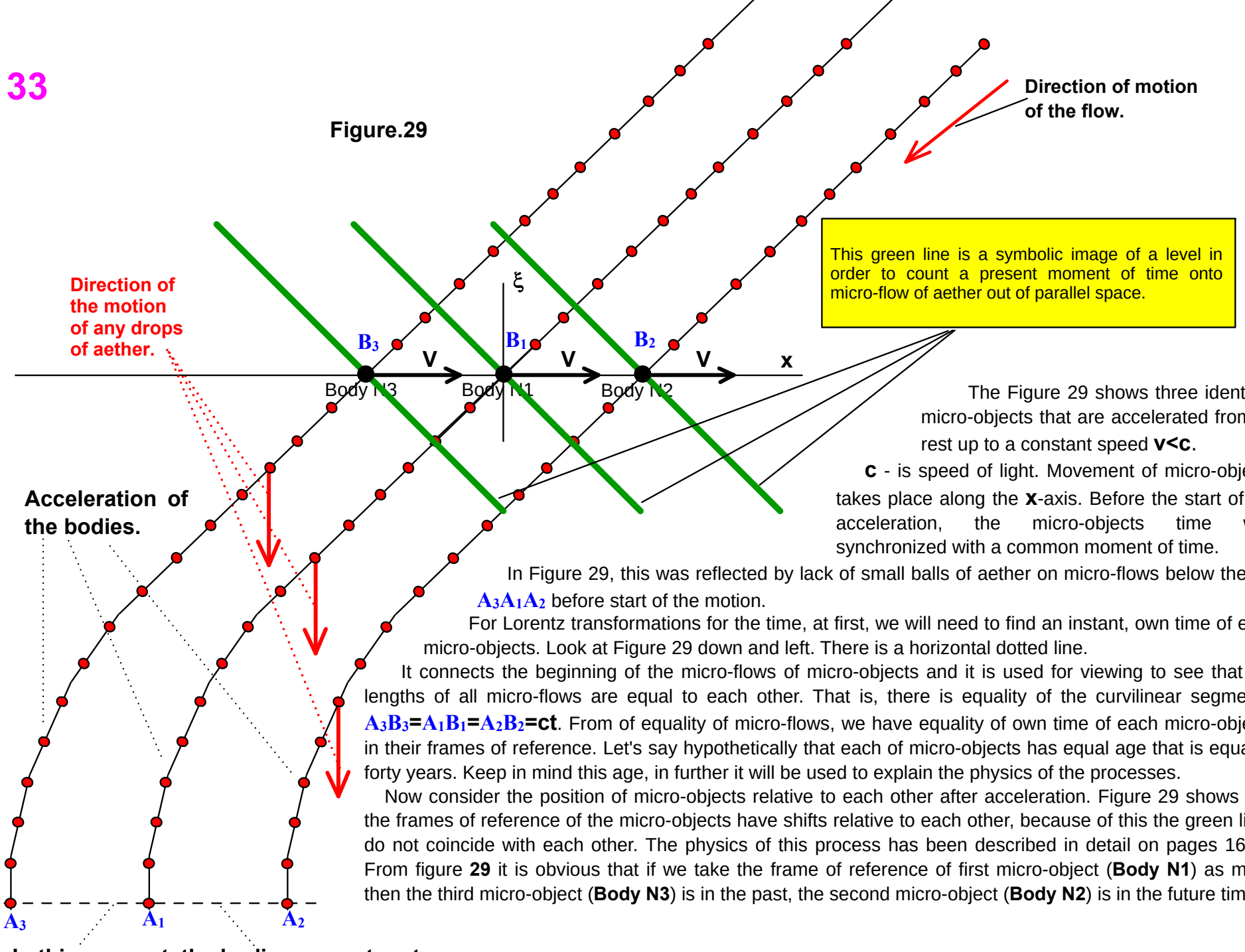
We assume that the velocity **v<c** is a positive constant that is not equal to zero. Then, the formula shows that for any positive values of **x**, the variable **t'** (it is time in the moving frame of reference) has always a negative value. Talking about it in physical terms we can say the following. At a fixed moment of time **t=0**, if a body has coordinate position that is equal to **x**, then in the moving frame of reference this body would be in the past time relative to frame of reference at rest. And this negative shift into the past time increases linearly with increasing values of **x**. Only the value **x=0** gives the time **t'** that is equal to zero **t'=0**. See formula. Now we take **x** with negative value.

To do this, in the last formula we replace positive value of **x** by negative value **-x**. Then Lorentz transformation takes the form:

$$t' = \frac{-(v/c^2)(-x)}{[1-(v/c)^2]^{1/2}} = \frac{(v/c^2)x}{[1-(v/c)^2]^{1/2}} \qquad \textbf{(b)}$$

This formula shows that for negative values of **x** the time **t'** gets a positive shift into the future time, and linearly increases with increasing of negative value **x**. These shifts, which were considered for value of time at positive and negative values of **x**, we will get for following physical processes. They will take place after acceleration of three elementary micro-objects, which are taken as the energy wave focuses.

Figure.29



The Figure 29 shows three identical micro-objects that are accelerated from at rest up to a constant speed **v<c**.

c - is speed of light. Movement of micro-objects takes place along the **x**-axis. Before the start of the acceleration, the micro-objects time was synchronized with a common moment of time.

In Figure 29, this was reflected by lack of small balls of aether on micro-flows below the line $A_3A_1A_2$ before start of the motion.

For Lorentz transformations for the time, at first, we will need to find an instant, own time of each micro-objects. Look at Figure 29 down and left. There is a horizontal dotted line.

It connects the beginning of the micro-flows of micro-objects and it is used for viewing to see that the lengths of all micro-flows are equal to each other. That is, there is equality of the curvilinear segments: $A_3B_3=A_1B_1=A_2B_2=ct$. From of equality of micro-flows, we have equality of own time of each micro-objects in their frames of reference. Let's say hypothetically that each of micro-objects has equal age that is equal to forty years. Keep in mind this age, in further it will be used to explain the physics of the processes.

Now consider the position of micro-objects relative to each other after acceleration. Figure 29 shows that the frames of reference of the micro-objects have shifts relative to each other, because of this the green lines do not coincide with each other. The physics of this process has been described in detail on pages 16,17. From figure **29** it is obvious that if we take the frame of reference of first micro-object (**Body N1**) as main, then the third micro-object (**Body N3**) is in the past, the second micro-object (**Body N2**) is in the future time.

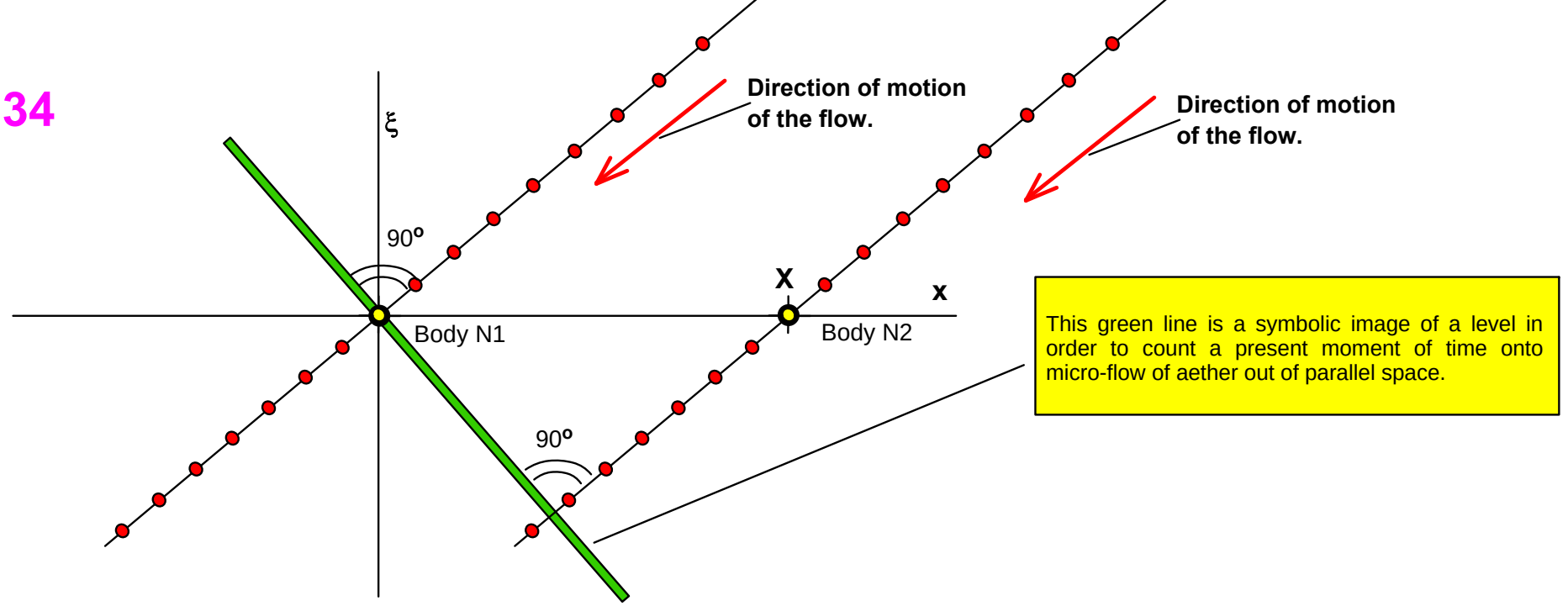


Figure.30

Let's find instant time of second micro-object (**Body N2**) in the frame of reference of the first micro-object (**Body N1**). To do this, let's stop time of the two micro-objects. Because of this reason, in Figure 30 micro-flows don't pass through the micro-objects. In the beginning, we define the instantaneous time of the second micro-object (**Body N2**) in the frame of reference of the first micro-object (**Body N1**), when its time is equal to zero (**t=0**). For the first micro-object (**Body N1**), it is a conditional, instantaneous time. In fact, the real, instant time can have any value. In Figure 30, the zero time is marked with help of "yellow" small ball on the micro-flow of micro-object (**Body N1**). Now after entering time of the first micro-object (**Body N1**), we define time of the second micro-object (**Body N2**) in its own frame of reference. It is always equal to the instantaneous time of the first micro-object (**Body N1**). This was already noted in the analysis on page 33. Therefore, if a moment of time of the first micro-object (**Body N1**), we took equal to zero, then the time of second micro-object (**Body N2**) has to be zero, too. This gives equalities of ages of micro-objects in their own frames of reference for instant time. Because of this reason on Figure 30, segments micro flows for both micro-objects coincide with each other, and "yellow" conditional balls of aether coincide with the centers of the micro-objects.

Now let's learn of instant time of the second micro-object (**Body N2**) in the frame of reference of instant time of the first micro-object (**Body N1**). To do this, we will simulate the movement of first micro-object (**Body N1**) with its micro-flow together along level green. This enables us to measure the length of the micro-flow of second micro-object (**Body N2**).

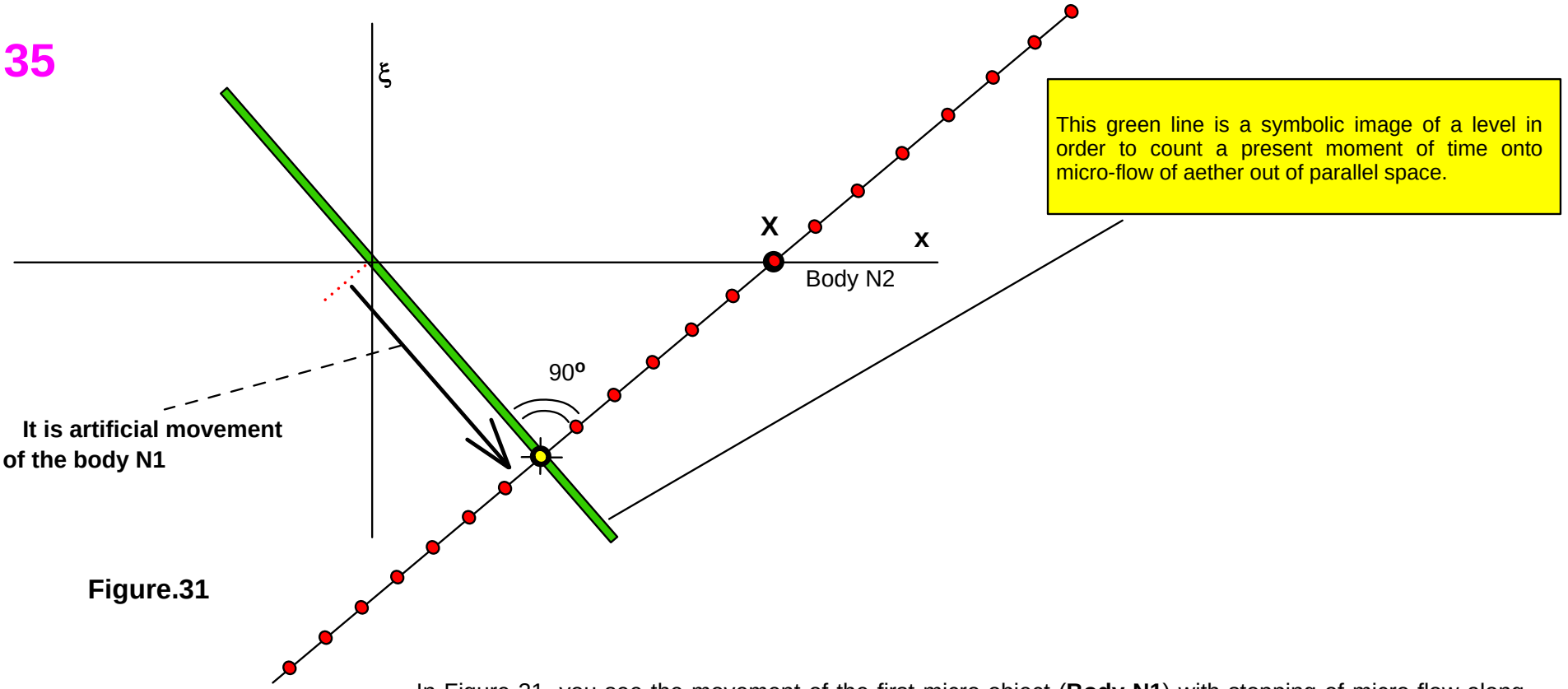


Figure.31

In Figure 31, you see the movement of the first micro-object (**Body N1**) with stopping of micro-flow along the level green. With help of this action, we use the micro-flow of first micro-object (**Body N1**) as a ruler.

When the micro-flow has coincided with the second micro-object (**Body N2**), we must restore the old position of micro-flow relative to the second micro-object (**Body N2**), as it was shown in Figure 30.

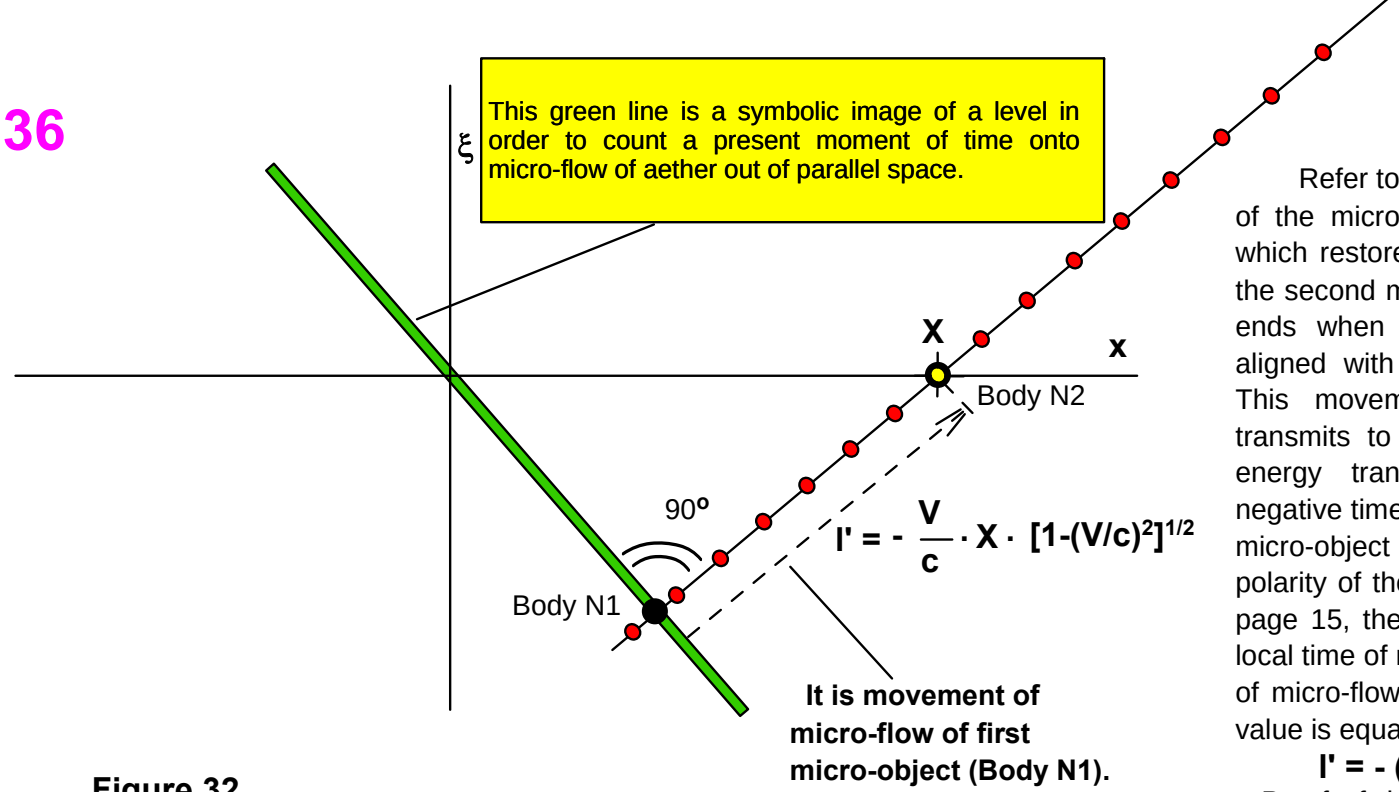


Figure.32

Refer to Figure 32. Here, we see the movement of the micro-flow of first micro-object (**Body N1**), which restores the old position of the micro-flow of the second micro-object (**Body N2**). This movement ends when the "yellow" small ball of aether is aligned with the second micro-object (**Body N2**). This movement has a negative direction and transmits to micro-object a negative energy. This energy transfer is developing micro-object in negative time. This gives the past time relative to the micro-object (**Body N1**). In order to understand the polarity of the time, you can once again look at the page 15, there is explained the polarity of time for local time of micro-object. If we mark a negative shift of micro-flow with help of symbol **(l)**, then the shift value is equal to

$$l' = -(v/c)x\,[1-(V/c)^2]^{1/2}$$

Proof of this shift coincides with the definition of length **D** in Figure 24. See page 26b. This conclusion will not be repeated.

If we know the length of the shift (**l'**) and speed $V_{push} = c[1 - (V/c)^2]$, then we can find time in the past of second micro-object (**Body N2**). It is equal to

$$t' = \frac{l'}{V_{push}} = -\frac{v/c^2}{[1-(V/c)^2]^{1/2}} X$$

The last expression coincides with the Lorentz transformation for the case when time is equal to **t=0**. See formula **(a)**, page 33.

Now, we will analyze the physics of the result. For this, let's analyze the following question. Why is there an obvious contradiction? The essence of this contradiction is the following. The second micro-object (**Body N2**) exists in the future of time relative to the first micro-object (**Body N1**), however the second micro-object (**Body N2**) has a negative energy in order to have shift into the past time. This shift occurs due to the wave properties of matter. And as any wave in a homogeneous medium, the long-lived matter has a constant speed. It is equal to the speed of light. **This motion with constant velocity gives the same age for two identical micro-objects in different times.** And this is possible only when in the future, the micro-object has an own shift into the past time. Let me explain this in more detail.

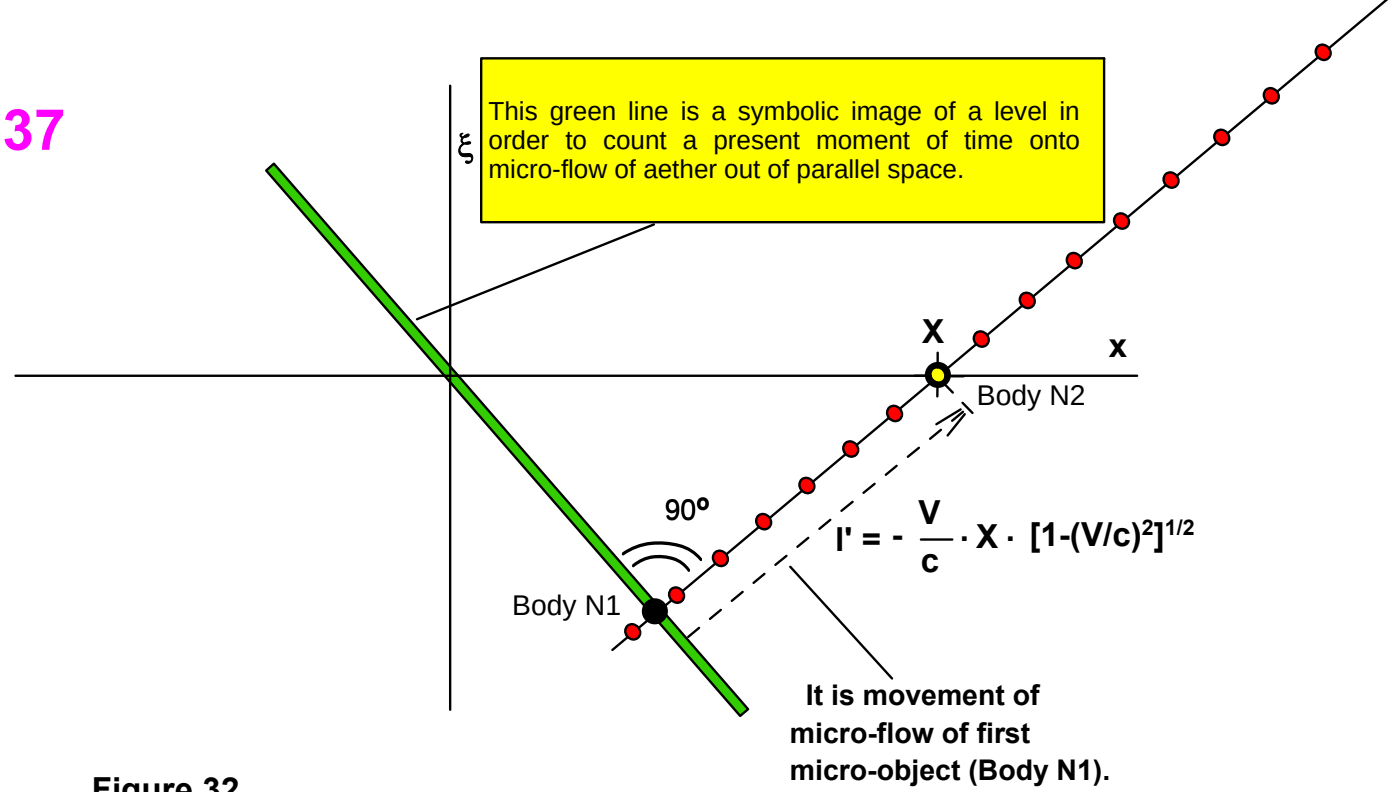


Figure.32

On page 34, there were introduced hypothetical ages of micro-objects. Also, there are assumed that they have ages, each of which is equal to forty years. In addition, before starting this analysis there was the condition that all three micro-objects are the same. They are only in a different times that are relative to each other, one is in the past, second is in the present and the third is in the future. So we can explain the physics of this process with help of age of one man, existing at different times, as an analogy. Let a person's age at the moment is equal to forty years. Let's consider the person in the future, twenty years later. How is age of this person? Obviously, in the future, age would be equal to sixty years. Now suppose that a person's age after twenty years has not changed and age is remained the same. It is equal to forty years. In this model, we have a similar case. Micro-object is located in the future time in the frame of reference of the first micro-object, and its age is not changed due to the wave properties of the micro-object. Is there a factor that provides the unchanging age? Yes, there is. This factor is a local, negative flow of time. Such negative flow of time rejuvenates the person for twenty years. This gives the following. When a person moves into the future and grows old, such a negative flow of time rejuvenates person. As a result, in the future, a person's age does not change. I hope that after this explanation, you have clear understanding physics action of negative micro-flow that passes through the second micro-object in the frame of reference of the first micro-object.

In the next explanation we shall use time **t** that isn't equal to zero. The time will be considered for second micro-object (**Body N2**). For this, we consider the motion of the second micro-object (**Body N2**) from point **x** up to point $\mathbf{x_t}$ in the positive direction of the **x**-axis. This motion will be considered for the time from **t=0** up to time **t**.

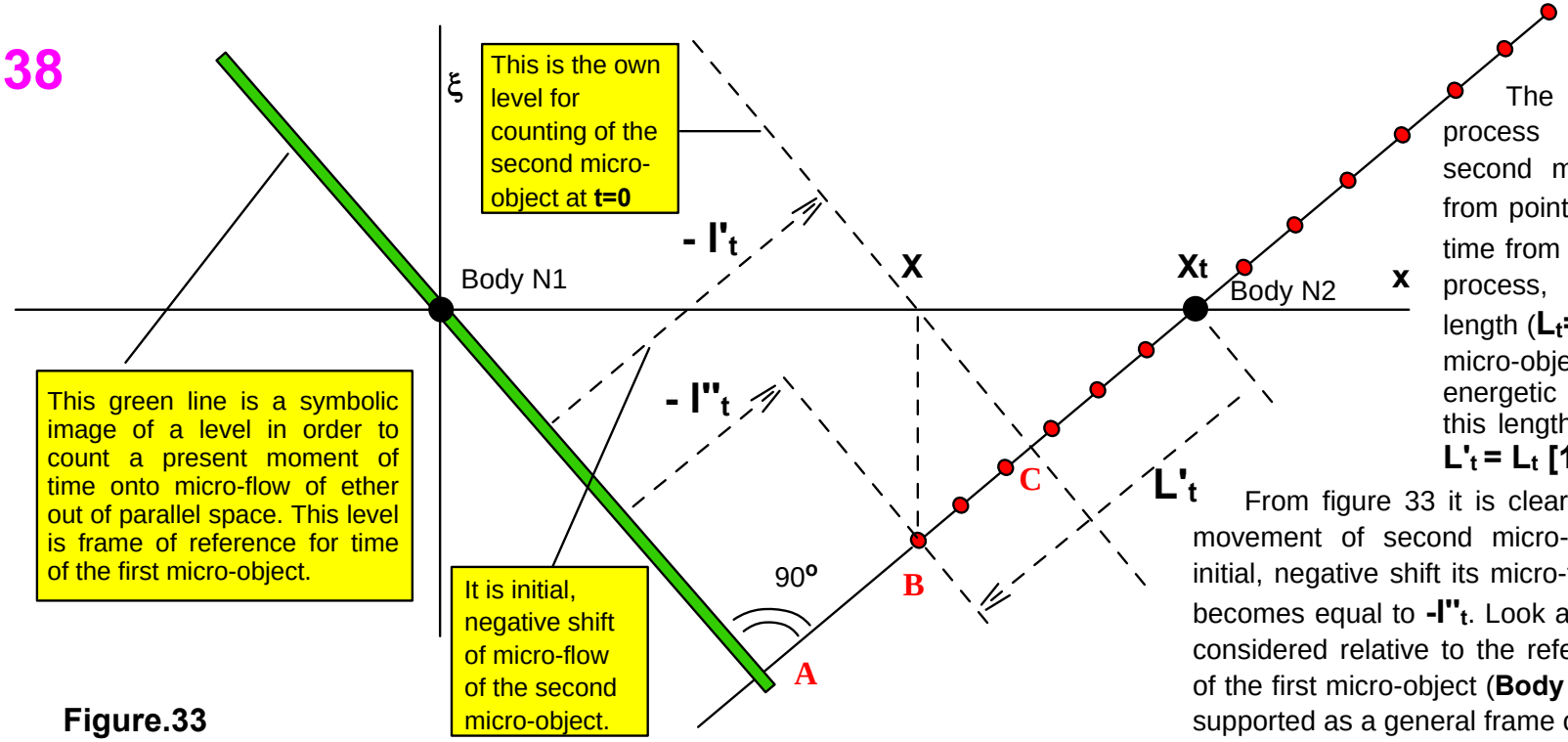


Figure.33

The Figure 33 shows the process of movement of the second micro-object (**Body N2**) from point **x** up to point x_t during time from **t=0** up to **t**. During this process, the micro-flow with length (L_t=ct) passes through the micro-object. In the metric of energetic activity of micro-flow, this length is equal to the length: $L'_t = L_t\,[1-(V/c)^2]^{1/2}$.

From figure 33 it is clear that by the end of the movement of second micro-object (**Body N2**), the initial, negative shift its micro-flow is decreased and it becomes equal to $-l''_t$. Look at this negative shift. It is considered relative to the reference level (green line) of the first micro-object (**Body N1**). This system will be supported as a general frame of reference for all proof.

Let's define this shift. From figure 33 it is also clear that the shift length is equal to $-l''_t = AC-BC$ or $l''_t = BC - AC$. The last equality takes into account polarity of movements of the micro-flow.

Length value (**AC**) is already known. The polarities of micro-flows are already included in the difference between the segments. See Figure 32. In the metric of energetic activity of micro-flow, it is equal to

$$AC = l' = \frac{V}{c}\cdot X\cdot [1-(V/c)^2]^{1/2}$$

Method for determining of the length (**BC**) is made in the proof of Chapter 2, page 26. Therefore the length (**BC**) in the metric of energy activity is equal to

$$BC = L'_{push} = [L_t - (V/c)*(x_t - x)]*[1-(V/c)^2]^{1/2}$$

Let's find the value l''_t. To do this, we substitute known values (**BC**) and (**AC**) that is $l''_t = BC-AC$.

$$l''_t = [L_t - (V/c)*(x_t - x)]*[1-(V/c)^2]^{1/2} - (V/c)*x*[1-(V/c)^2]^{1/2} = [L_t - (V/c)*x_t]*[1-(V/c)^2]^{1/2}$$

If we use the speed (V_{push}) that is equal to $V_{push} = c - V^2/c = c[1-(V/c)^2]$, then we obtain the final result:

$$t' = \frac{l''_t}{V_{push}} = \frac{(L_t)/c - (v/c^2)x_t}{[1-(v/c)^2]^{1/2}} = \frac{t - (v/c^2)x_t}{[1-(v/c)^2]^{1/2}}$$ or according to the conventional form. It is equal to $t' = \frac{t - (v/c^2)x}{[1-(v/c)^2]^{1/2}}$

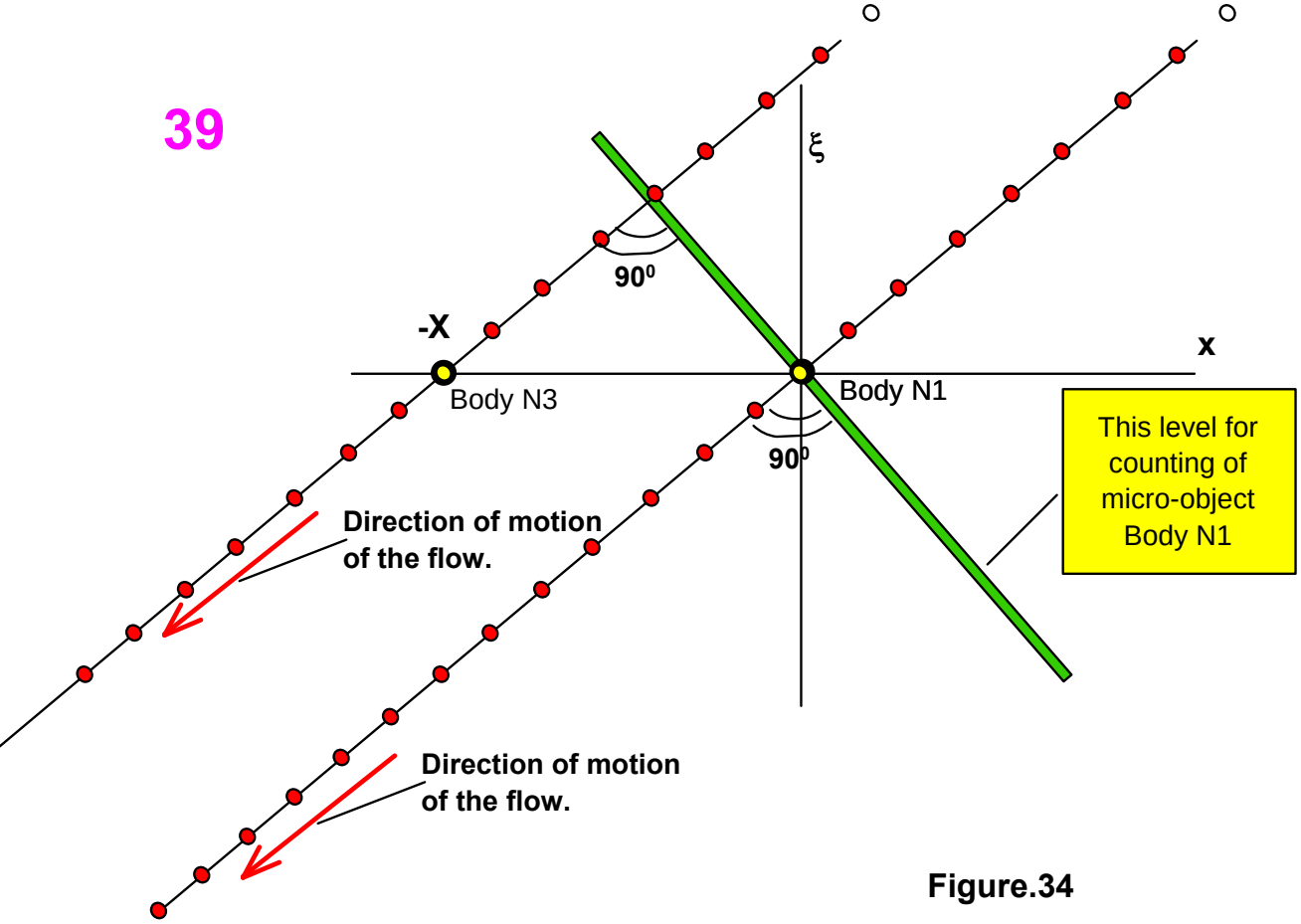


Figure.34

On this page we continue the analysis of time of micro-objects at motions. We have to examine the time of third micro-object (**Body N3**) in the frame of reference of the first micro-object (**Body N1**). To do this, we will stop time of the two micro-objects, as it was on page 35. Because of this reason, in Figure 34 micro-flows also don't pass through the micro-objects. In the beginning, we define the instantaneous time of the third micro-object (**Body N3**) in the frame of reference of the first micro-object (**Body N1**), when its time is equal to zero (**t=0**). This must be done to obtain a Lorentz transform of (b), page 32. In Figure 34, the zero time is marked with help of "yellow" small ball on the micro-flow of micro-object (**Body N1**). Now after entering time of the first micro-object (**Body N1**), we define time of the third micro-object (**Body N3**) in its own frame of reference. It is always equal to the instantaneous time of the first micro-object (**Body N1**). This was already noted in the analysis on page 33. Therefore, if a moment of time of the first micro-object (**Body N1**) we took as equal to zero, then the time of third micro-object (**Body N3**) has to be zero, too. This gives equalities of ages of micro-objects in their own frames of reference for instant time. Because of this reason on Figure 34, the "yellow" small balls on aether coincide with the centers of the micro-objects.

Now let's learn of instant time of the third micro-object (**Body N3**) in the frame of reference of instant time of the first micro-object (**Body N1**). To do this, we will simulate the movement of first micro-object (**Body N1**) with its micro-flow together along level green. This enables us to measure the length of the micro-flow of third micro-object (**Body N3**).

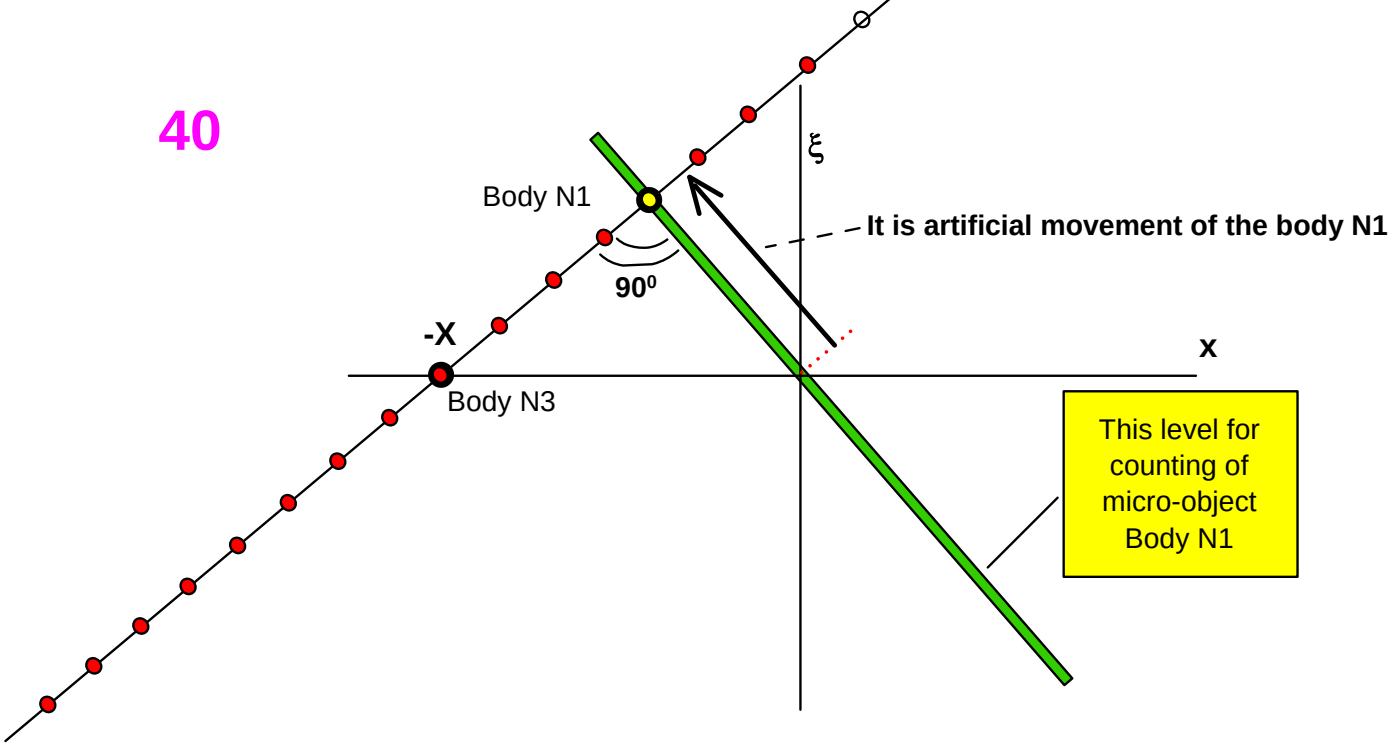


Figure.35

In Figure 35, you see the movement of the first micro-object (**Body N1**) with stopping of micro-flow along the level green. With help of this action, we use the micro-flow of first micro-object (**Body N1**) as a ruler.

When this micro-flow has coincided with the third micro-object (**Body N3**), we must restore the old position of micro-flow relative to the third micro-object (**Body N3**), as it was shown in Figure 34.

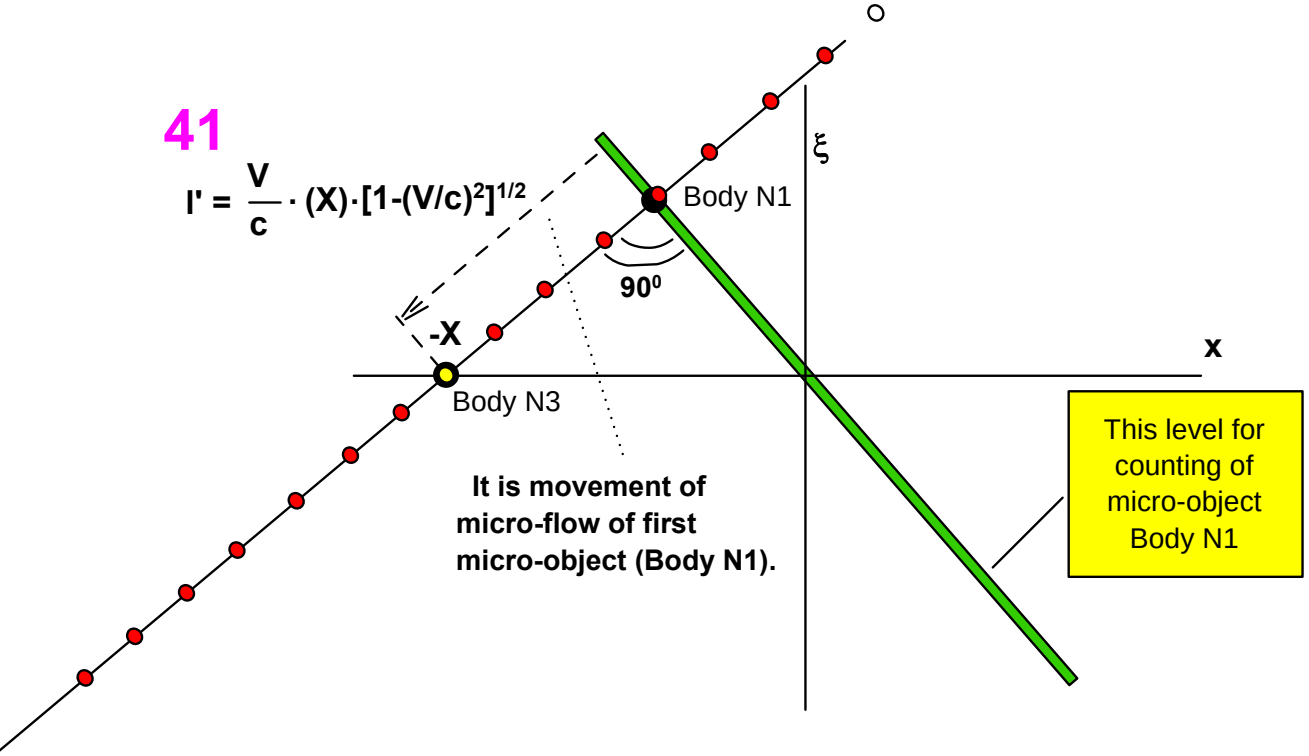


Figure.36

See on Figure 36. Here, we see the movement of the micro-flow of first micro-object (**Body N1**), which restores the old position of the micro-flow of the third micro-object (**Body N3**). This movement ends when the "yellow" small ball of aether is aligned with the third micro-object (**Body N3**). This movement has a positive direction and transmits to micro-object a positive energy. This energy transfer is developing micro-object in positive time. This gives the future time relative to the micro-object (**Body N1**). In order to understand the polarity of the time, you can once again look at the page 14, there is explained the polarity of time for local time of micro-object.

If we mark a positive shift of micro-flow with help of symbol **(l')**, then the shift value is equal to

$$\mathbf{l' = (v/c)x\ [1-(V/c)^2]^{1/2}}$$

Proof of this shift coincides with the definition of length **D** in Figure 24. See page 26b. This conclusion will not be repeated.

If we know the length of the shift (**l'**) and speed $\mathbf{V_{push} = c[1 - (V/c)^2]}$ of the micro-flow, then we can find time in the future of third micro-object (**Body N3**). It is equal to

$$\mathbf{t' = \frac{l'}{V_{push}} = \frac{v/c^2}{[1-(V/c)^2]^{1/2}}\ x}$$

The last equality coincides with the Lorentz transformation for time for all points of the negative **x**-axis, when the time is equal to **t=0**. This is required to get in this conclusion.

$$l' = \frac{V}{c} \cdot (X) \cdot [1-(V/c)^2]^{1/2}$$

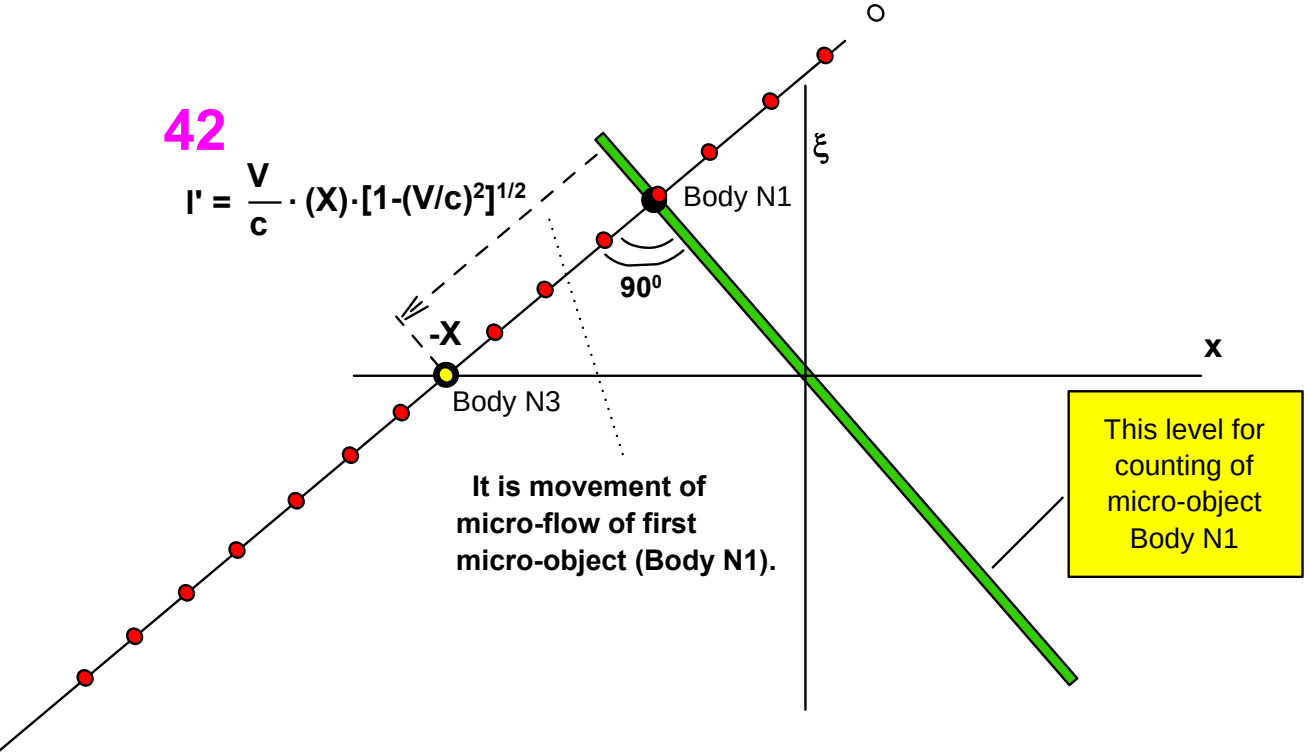


Figure.36

Let's consider the physics of the process of this result, as it was done on page 37 with help of a hypothetical person. Only here we consider the age of the same hypothetical person in the past. I recall that at the present time the age of person was equal to forty years. Let's consider the person in the past, ten years ago. Now we ask the following question. For example, how is age of this person, ten years ago in the past? It is indisputable in normal life, he would be equal to thirty years. Now, we assume artificially that ten years ago, the age of the person wasn't equal to thirty. Let person has age that is equal to age at the present time, that is, let age is equal to forty years. What kind of physical processes could provide this age in the past time? It can only give a local, positive flow of time. It causes premature aging of our hypothetical person for ten years in the past time. This model for micro-object (**Body N3**) obtains a similar phenomenon. In the frame of reference of the first micro-object, the third micro-object has extra energy, which gives additional development of this micro-object in time.

In the next explanation we shall use time **t** that isn't equal to zero. The time will be considered for third micro-object (**Body N3**). For this, we consider the motion of the third micro-object (**Body N3**) from point **-x** up to point $\mathbf{-x_t}$ of the negative direction of the **x**-axis. This motion will be considered for the time from **t=0** up to time **t**.

$$l' = \frac{V}{c} \cdot X \cdot [1-(V/c)^2]^{1/2}$$

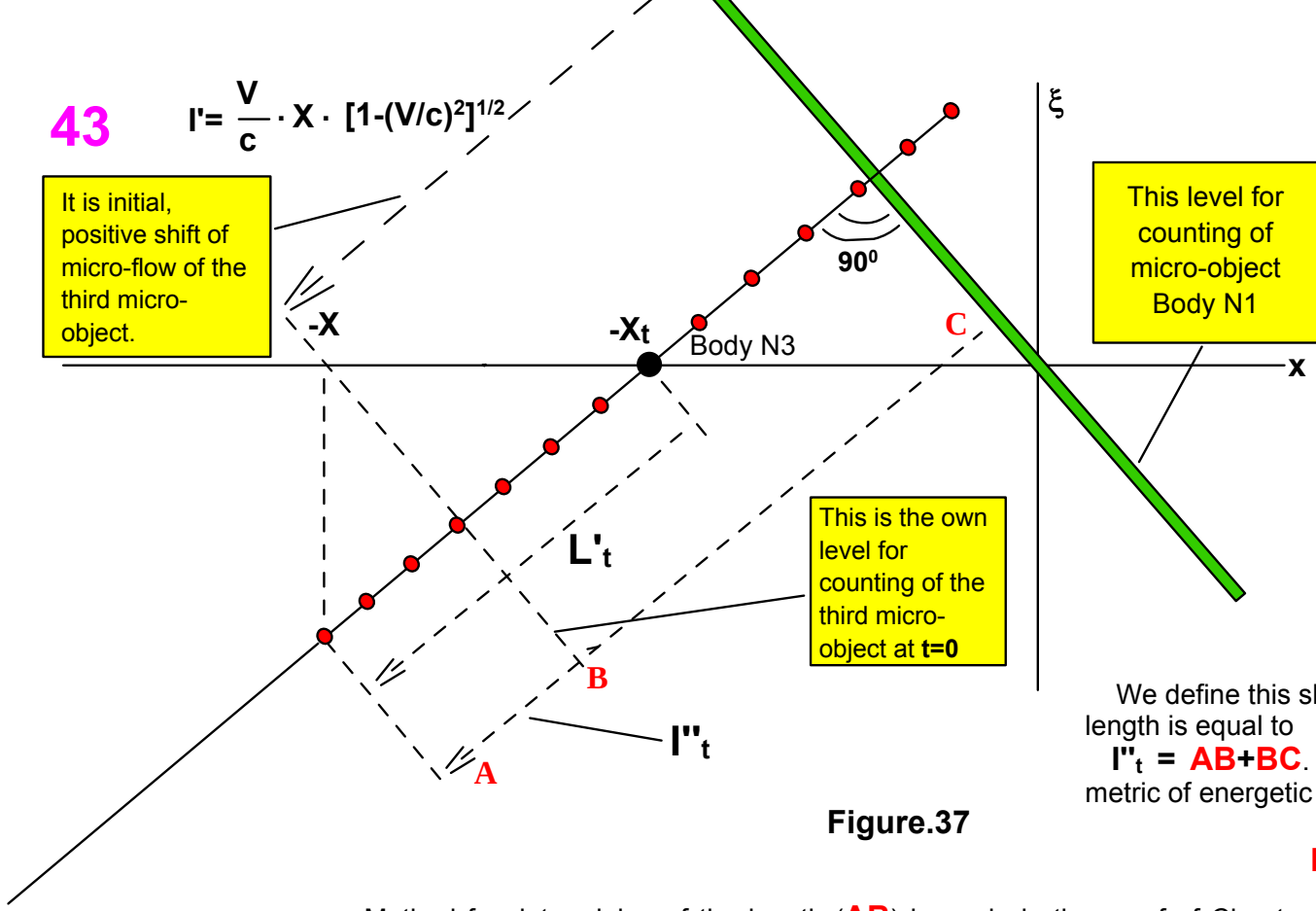


Figure.37

The Figure 37 shows the process of movement of the third micro-object (**Body N3**) from point **-x** up to point $-x_t$ during time from **t=0** up to **t**. During this process, the micro-flow with length (L_t=**ct**) passes through the third micro-object. In the metric of energetic activity of micro-flow, this length is equal to the length:

$$L'_t = L_t\,[1-(V/c)^2]^{1/2}.$$

From figure 37, it is clear that by the end of the movement of third micro-object (**Body N3**), the positive shift of the micro-flow is increased and it becomes equal to l''_t. Look at this positive shift. It is considered relative to the reference level (green line) of the first micro-object (**Body N1**). This system will be supported as a general frame of reference for all proof.

We define this shift. From figure 37 it is also clear that the shift length is equal to

l''_t = **AB**+**BC**. Length value (**BC**) is already known. In the metric of energetic activity of micro-flow, it is equal to

$$BC = l' = \frac{V}{c} \cdot X \cdot [1-(V/c)^2]^{1/2}$$

Method for determining of the length (**AB**) is made in the proof of Chapter 2, page 26. Therefore the length (**AB**) in the metric of energy activity is equal to

$$AB = L'_{push} = [L_t - (V/c)*\{(-x_t) - (-x)\}]*[1-(V/c)^2]^{1/2} = [L_t - (V/c)*(x - x_t)]*[1-(V/c)^2]^{1/2}$$

Let's find the value l''_t. To do this, we substitute known values (**AB**) and (**BC**) into the expression l''_t = **AB**+**BC**

$$l''_t = [L_t - (V/c)*(x - x_t)]*[1-(V/c)^2]^{1/2} + (V/c)*x*[1-(V/c)^2]^{1/2} = [L_t + (V/c)*x_t]*[1-(V/c)^2]^{1/2}$$

If we use the speed (V_{push}) that is equal to $V_{push} = c - V^2/c = c[1-(V/c)^2]$, then we obtain the final result:

$$t' = \frac{l''_t}{V_{push}} = \frac{(L_t)/c + (v/c^2)x_t}{[1-(v/c)^2]^{1/2}} = \frac{t + (v/c^2)x_t}{[1-(v/c)^2]^{1/2}}$$ or according to the conventional form, it is equal to

$$t' = \frac{t + (v/c^2)x}{[1-(v/c)^2]^{1/2}}$$. Last expression we had to get in this model.

Explanation of purpose and form of this model.

The primary goal that I set before myself as the author of this work it was to prove that all matter in our world are waves in specific forms. It had to be done to restore the full symmetry of light waves and matter. A prerequisite for this was the inertial properties of matter. I have always perceived it with the presence of a hidden motion that is not prominent in our world.

Solving this problem is long been executed with help ufologists and other representatives of inaccurate science, but their arguments and circumstantial evidence aren't taken seriously because of unrealistic mysticism, which are present in their arguments. Although mainstream science has been using various models in physics for multidimensional spaces, but at present, mainstream science cannot to come to a final decision. To solve the problem of inertial motion, I had to resort to model parallel spaces. But entering parallel spaces requires an explanation of their presence in hidden form inside our world. Solving of this problem was only obtained with help of model of wave focus that has energy exchange between parallel spaces. This model is used for the long-lived elementary micro-objects of our world. To prove the legitimacy of this model I had to introduce the model that has a physical and geometric modeling of parallel spaces - as a first step of the proof. However, it is not a pure physical model. This is math model. Model does not explain physics of the existence of these hidden spaces, but it is psychologically more susceptible for readers than a purely physical model for parallel spaces. Many of researchers have been using a lot of models for modeling of multidimensional spaces but they create models, which are not purely physical. These models are physical and mathematical, geometrical, etc. But the psychology of people has changed so that these models are perceived as purely physical. Nevertheless, we must understand that these models are not physical they are mathematical abstractions.Therefore, if this model will be interesting for the scientific community, then I will give further development of it as a pure physical model for parallel spaces. Such model explains the inner essence and physical invisibility of parallel worlds for our world.

Now we come to the main conclusion of this part of the work. We will obtain a physical explanation for one of the postulates of special relativity. For this, we consider the propagation of light in inertial frames of wave energy focuses in order to check that the constancy of the speed takes place due to the properties of matter. As usual, we consider the motion of light between the elementary micro-objects that move along the **x**-axis. This analysis shows that all the experiments in which researchers are trying to find the speed of light (electromagnetic signals) relative to the absolute ether useless since such experiments always give the same result. Speed of light is constant. I have already mentioned, but I repeat again that the speed of light can be detected as variable only when the specific conditions will be created for matter. Under these conditions the matter must lose the property of inertia. For neutral mass this property is counteraction to acceleration for the electric charge this property is electromagnetic counteraction to acceleration.

The proof of postulate of the constancy of the speed of light in inertial frame of reference at motion as a natural essence of matter in this model.

Before starting the proof, let's briefly analyze the formulas of Lorentz transformation in order to see the following. Changing of relativistic metric for coordinates and time there are not needed if the light propagates along the one **x**-axis. For this condition, the propagation of light takes the form: **x'=ct'**. It can be expressed more fully.

$$\frac{x-/+vt}{[1-(V/c)^2]^{1/2}} = c\,\frac{t-/+(v/c^2)x}{[1-(V/c)^2]^{1/2}} \quad \text{или} \quad x-/+vt = ct-/+(v/c)x \qquad (c)$$

The last expression shows that in the relativistic equation roots are removed and don't make any changes in equality. Because of this, the following proof can use this fact to simplify the math. At the beginning the propagation of light will take place along the positive direction of the **x**-axis later it will be along the negative direction of the **x**-axis. This part of the work will not consider light propagation in the perpendicular direction of motion of frame of reference. This is a very simple case and to me as author, it is not interesting. But to complete the proof, it will be discussed in the next part of the work, when the relativistic length contraction of physical bodies will be considered inside of inertial frame of reference at motion.

Remark. Since in the following explanation the relativistic metric of Lorentz transformation is equal to unity, then the conditional small "balls" of aether will not be displayed and micro-flows are drawn as red lines of segments.

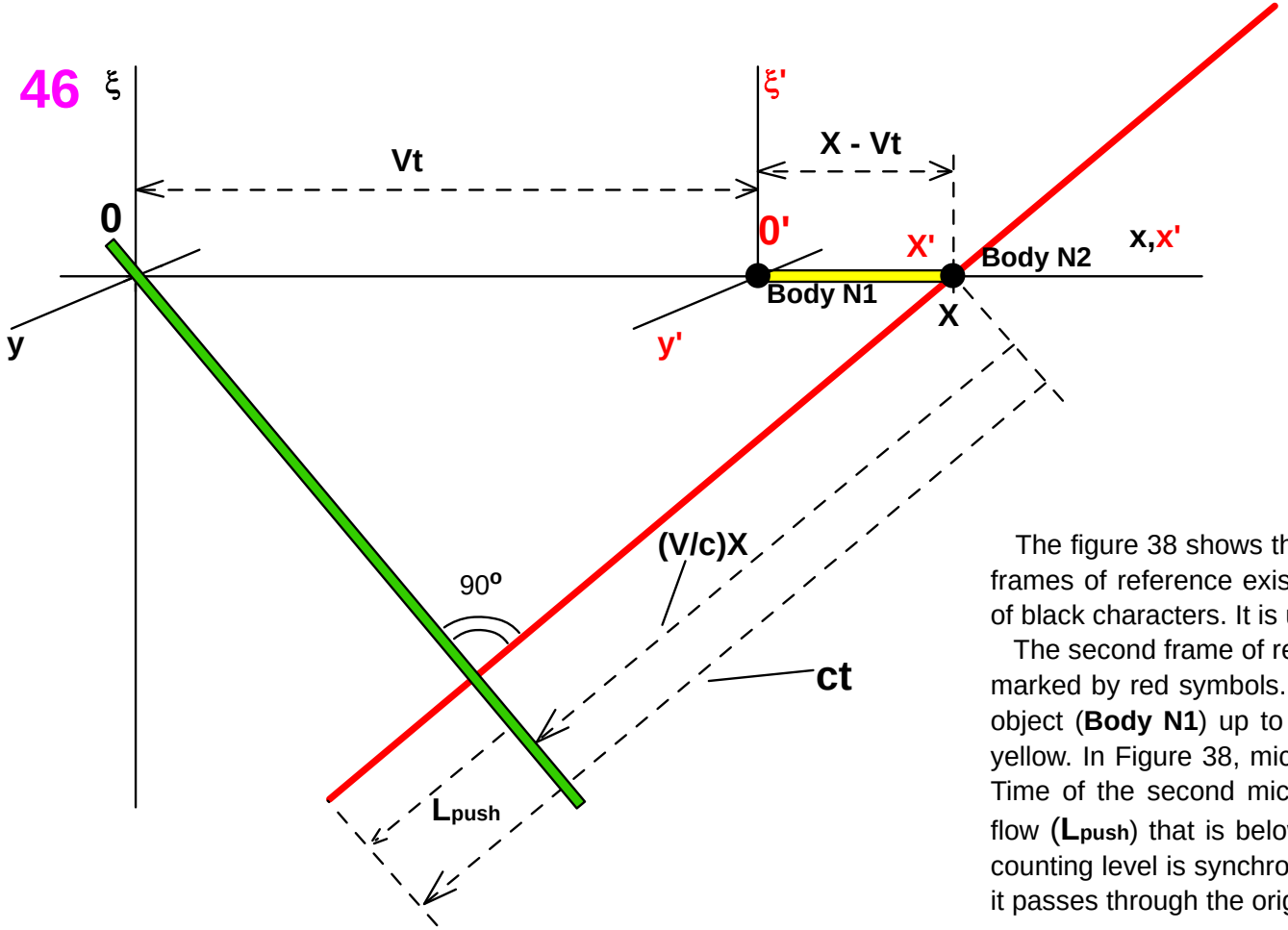


Figure.38

The figure 38 shows the two inertial frames of reference. One of the frames of reference exists at absolute rest and it is labeled with help of black characters. It is used only for visual image.

The second frame of reference is moving in absolute space, and it is marked by red symbols. The propagation of light from the first micro-object (**Body N1**) up to second micro-object (**Body N2**) is shown in yellow. In Figure 38, micro-flow out of parallel space is shown in red. Time of the second micro-object is determined by the length micro-flow (L_{push}) that is below the level for counting. It is green line. The counting level is synchronized with the light emission, because of this, it passes through the origin of the frame of reference.

This mathematical analysis must prove the following. For the second micro-object (**Body N2**) the speed of light doesn't undergo any changes. This statement is equivalent to proof of the equality of two lengths: (L_{push}) and (**O'X'**). Thereby it proves the equality (c), see the page 45. The length (**O'X'**) is equal to length of the path of light in the moving frame of reference. The length (L_{push}) determines time of the micro-object (**Body N2**). This equality of the length of path that light has travelled and of length of micro-flow was explained as property of matter. See page 11.

To view the proof, please look at the page 46a.

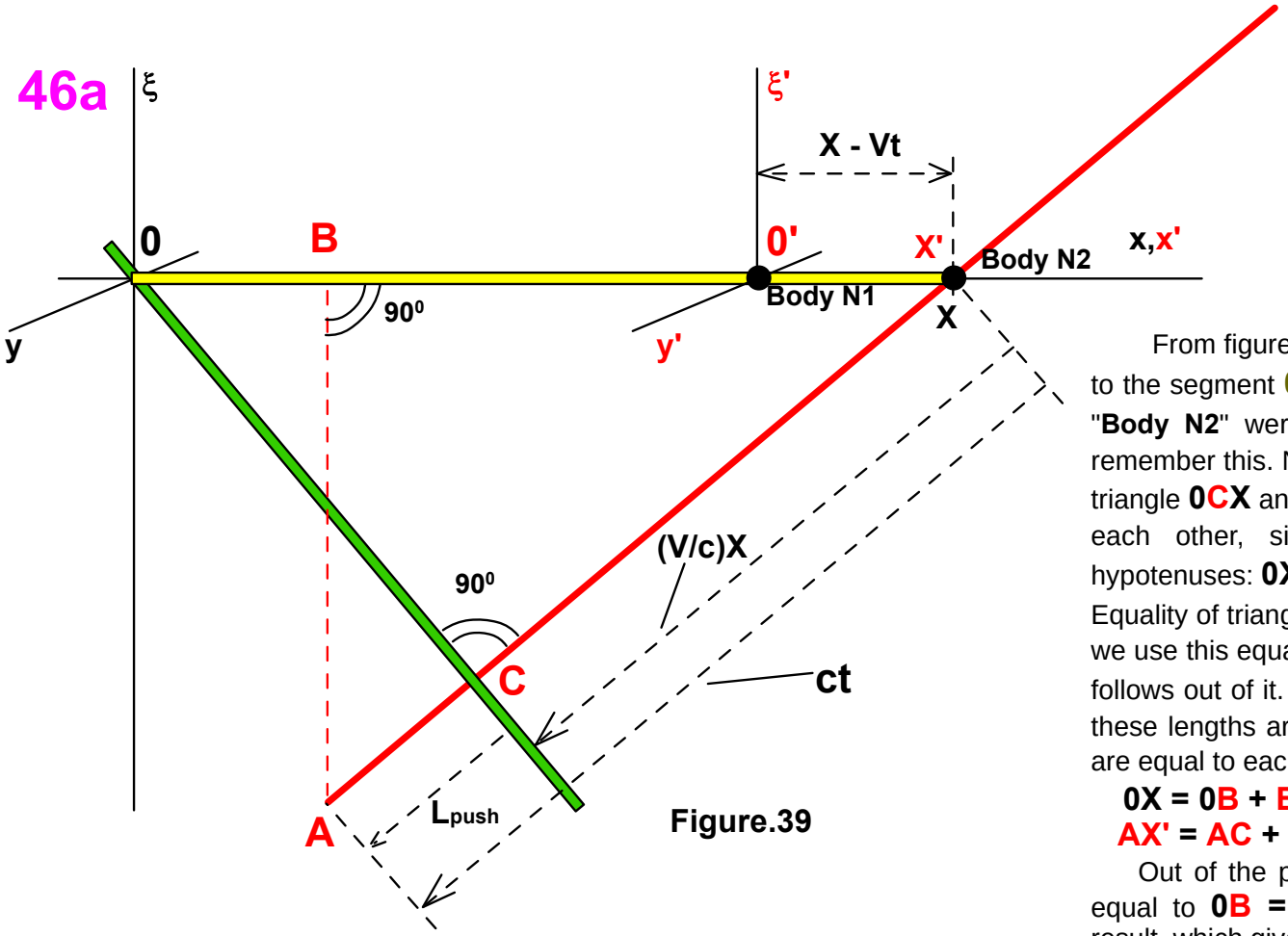


Figure.39

To prove the equality of two lengths (L_{push} = 0'X'), let's supplement Figure 39 with the next element. We lift a perpendicular line from the end of the segment L_{push} up to the **x**-axis.

From figure 39 it is obvious that the segment **0'X'** is equal to the segment **0B** (in moment of time **t=0** the "**Body N1**" and "**Body N2**" were in points "**0**" and "**B**" respectively). Let's remember this. Now, let's consider the two triangles. These are triangle **0CX** and triangle **ABX'**. These triangles are equal to each other, since they have equal angles and equal hypotenuses: **0X=AX'=ct**.

Equality of triangles gives the equality of lengths: **BX = CX'**. If we use this equation, then the equation of the following lengths follows out of it. This equation is **0B = AC**. It occurs because these lengths are component parts of following lengths, which are equal to each other.

0X = 0B + BX = ct

AX' = AC + CX' = ct

Out of the page 47a, we know that the length of (**0B**) is equal to **0B = 0'X'**. Therefore we obtain the desired end result, which gives equal lengths

0'X' = AC.

Segment **AC** is length of the micro-flow that passes through the second micro-object (L_{push}). Thus, we have obtained an exact geometric proof of the formula (c). See the page 45. The formula should be considered for the propagation of light in the direction of movement of micro-objects along one **x**-axis. For this case, as it was noted on the page 45, we can don't take into account of changes metrics spatial coordinates and time in the Lorentz transformation. Then the formula becomes

$$x - vt = ct - (v/c)x = L_{push}\ .$$

This proof showed that for second micro-object the speed of light isn't changed. This is ensured by the equality of path that light has travelled and the length of micro-flow that is giving the development of micro-object in time. And this phenomenon persists for all inertial systems, regardless of inertial motion. Similar proof can be carried out for the case when the light beam is reflected back from the second micro-object and after the light comes back to the first micro-object. And in this case we would have equality of length micro-flow of time and path length travelled by the light too.

The proof is over.

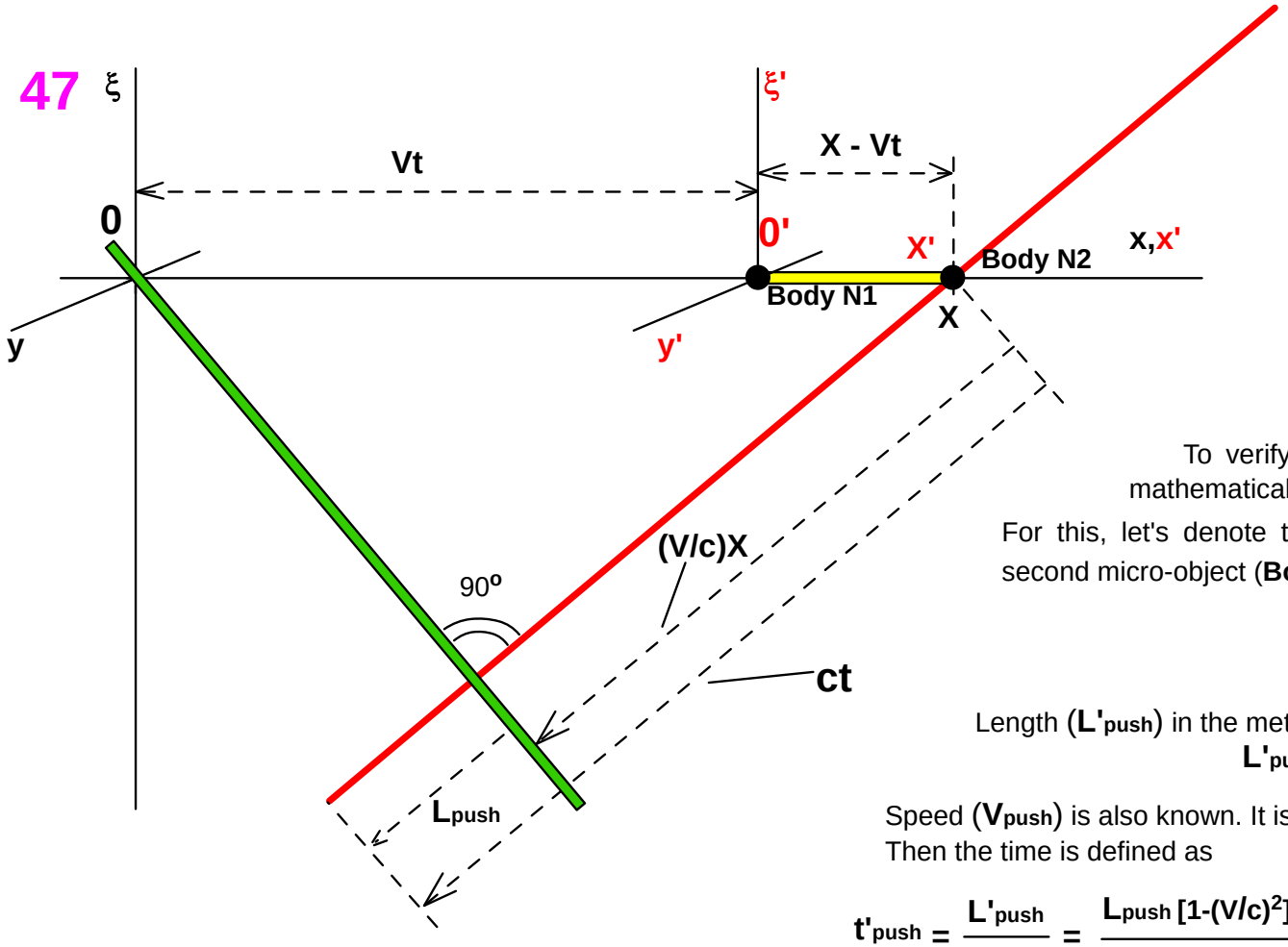


Figure.38

To verify this result, we continue a more complete mathematical proof of this example.

For this, let's denote the time of reception of the light signal by second micro-object (**Body N2**) as t'_{push}. Then the time is equal to

$$t'_{push} = \frac{L'_{push}}{V_{push}}$$

Length (L'_{push}) in the metric of energy activity of micro-flow is equal to

$$L'_{push} = L_{push}\,[1-(V/c)^2]^{1/2}$$

Speed (V_{push}) is also known. It is equal to $V_{push} = c - V^2/c = c[1 - (V/c)^2]$. Then the time is defined as

$$t'_{push} = \frac{L'_{push}}{V_{push}} = \frac{L_{push}\,[1-(V/c)^2]^{1/2}}{c[1 - (V/c)^2]} = \frac{L_{push}}{c[1 - (V/c)^2]^{1/2}} = \frac{t_{push}}{[1 - (V/c)^2]^{1/2}}$$

or

$$t'_{push} = \frac{t_{push}}{[1 - (V/c)^2]^{1/2}}$$

Pay attention to the next moment. In the last expression the time is $(t_{push})=L_{push}/c$. This equation will be used when we will compare the result obtained with the Lorentz transformation for time. Let's consider the Lorentz transformation more detail.

$$t = \frac{t - (V/c^2)x}{[1- (V/c)^2]^{1/2}}$$

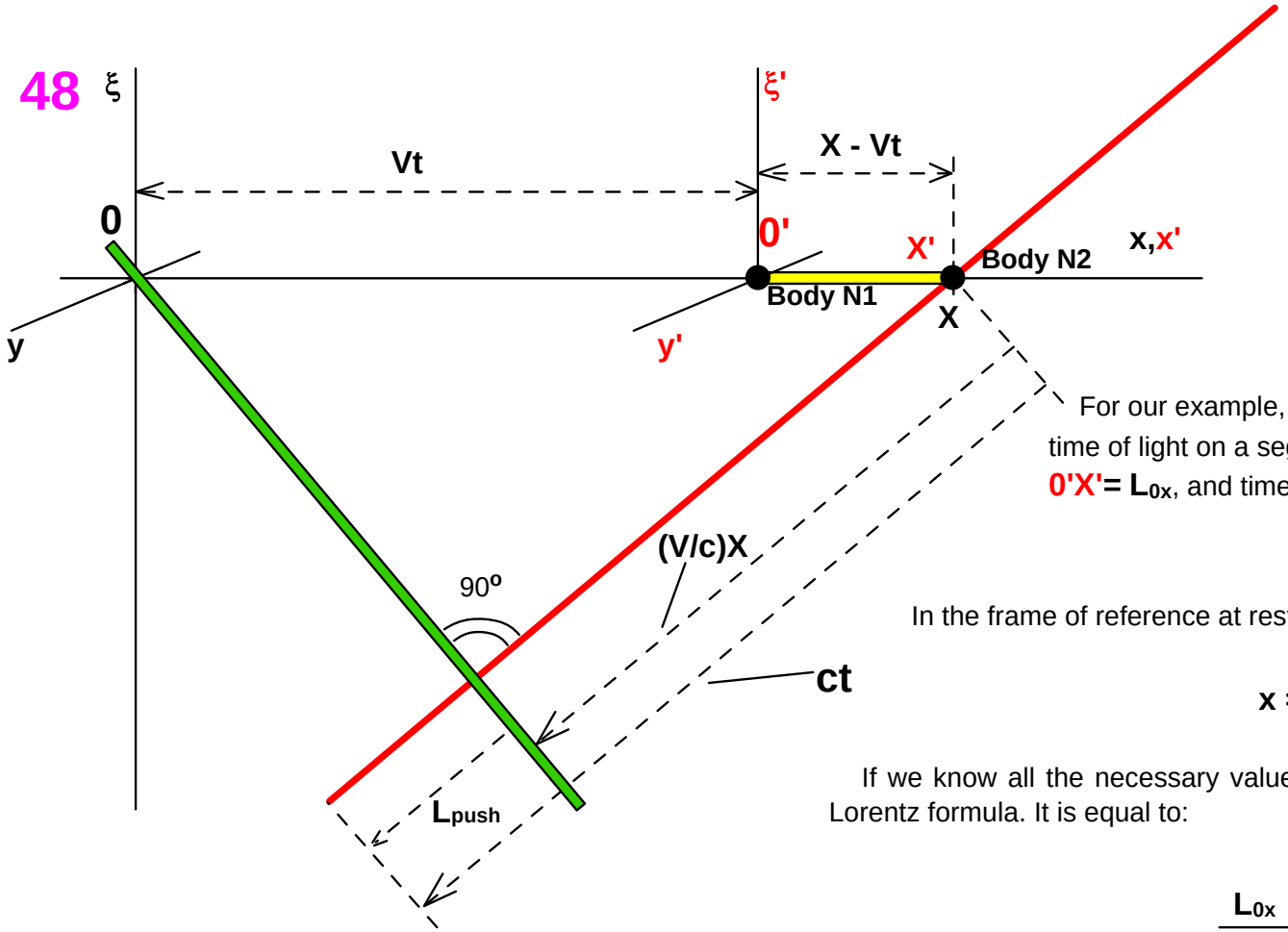


Figure.38

For our example, in the Lorentz formula, the time (**t**) is a motion time of light on a segment **0'X'**. In the future, let value of (**0'X'**) is **0'X'= L_{0x}**, and time of (**t**) is **$t=t_{0x}$**. Then we have

$$t_{0x} = \frac{L_{0x}}{c - V}$$

In the frame of reference at rest, the light travels the distance that is equal to

$$x = ct_{0x} = \frac{cL_{0x}}{c - V}$$

If we know all the necessary values, then we can determine the time out of the Lorentz formula. It is equal to:

$$t' = \frac{t_{0x} - (V/c^2)x}{[1-(V/c)^2]^{1/2}} = \frac{\frac{L_{0x}}{c - V} - \frac{V}{c^2}\frac{cL_{0x}}{c - V}}{[1-(V/c)^2]^{1/2}} = \frac{\frac{L_{0x}(c - V)}{c(c - V)}}{[1-(V/c)^2]^{1/2}} =$$

$$= \frac{\frac{L_{0x}}{c}}{[1-(V/c)^2]^{1/2}} = \frac{t_0}{[1-(V/c)^2]^{1/2}}$$

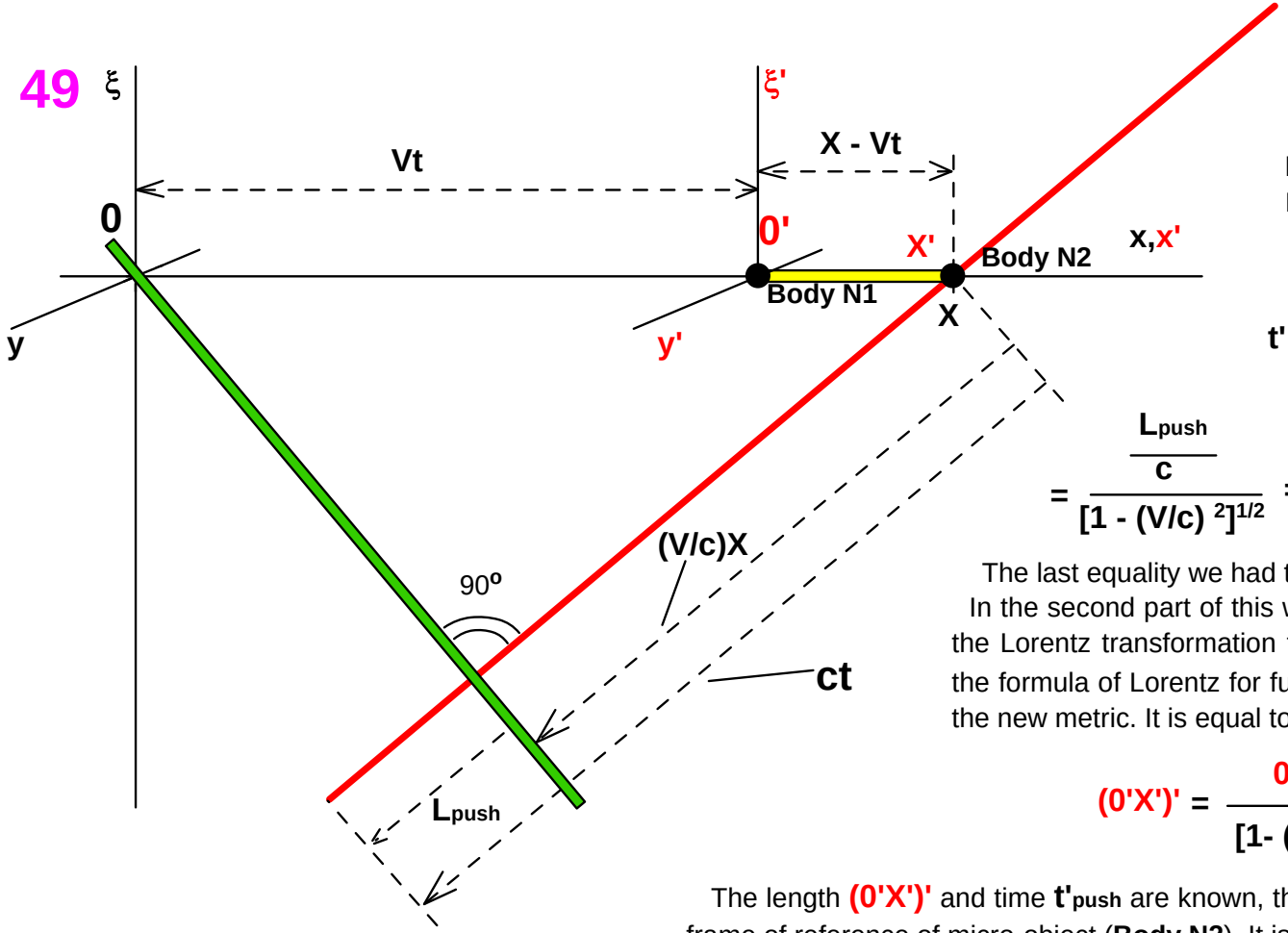


Figure.38

Previously, it was demonstrated that the length (**0'X**) is equal to the length (L_{push}). From this we have the following equality:

$$t' = \frac{\frac{L_{0x}}{c}}{[1-(V/c)^2]^{1/2}} = \frac{t_0}{[1-(V/c)^2]^{1/2}} =$$

$$= \frac{\frac{L_{push}}{c}}{[1-(V/c)^2]^{1/2}} = \frac{t_{push}}{[1-(V/c)^2]^{1/2}} = t'_{push} \quad \text{or} \quad t' = t'_{push}$$

The last equality we had to prove.

In the second part of this work in the framework of this model, we obtain the Lorentz transformation for space coordinates. Therefore, we can use the formula of Lorentz for further proof and transform the length of **0'X'** in the new metric. It is equal to

$$(0'X')' = \frac{0'X'}{[1-(V/c)^2]^{1/2}} = \frac{L_{0x}}{[1-(V/c)^2]^{1/2}}$$

The length **(0'X')'** and time t'_{push} are known, therefore we can find the speed of light **c'** in the frame of reference of micro-object (**Body N2**). It is equal to

$$c' = \frac{(0'X')'}{t'_{push}} = \frac{L_{0x}}{[1-(V/c)^2]^{1/2}} \frac{[1-(V/c)^2]^{1/2}}{t_{push}} = \frac{L_{0x}}{t_{push}}$$

Since time t_{push} is equal to $t_{push} = L_{push}/c$ and $L_{push} = L_{0x}$ then last expression takes the form:

$$c' = \frac{L_{0x}}{L_{0x}} c = c$$

Therefore, in this model, the speed of the light is not changed in frame of reference at motion. This completes the proof.

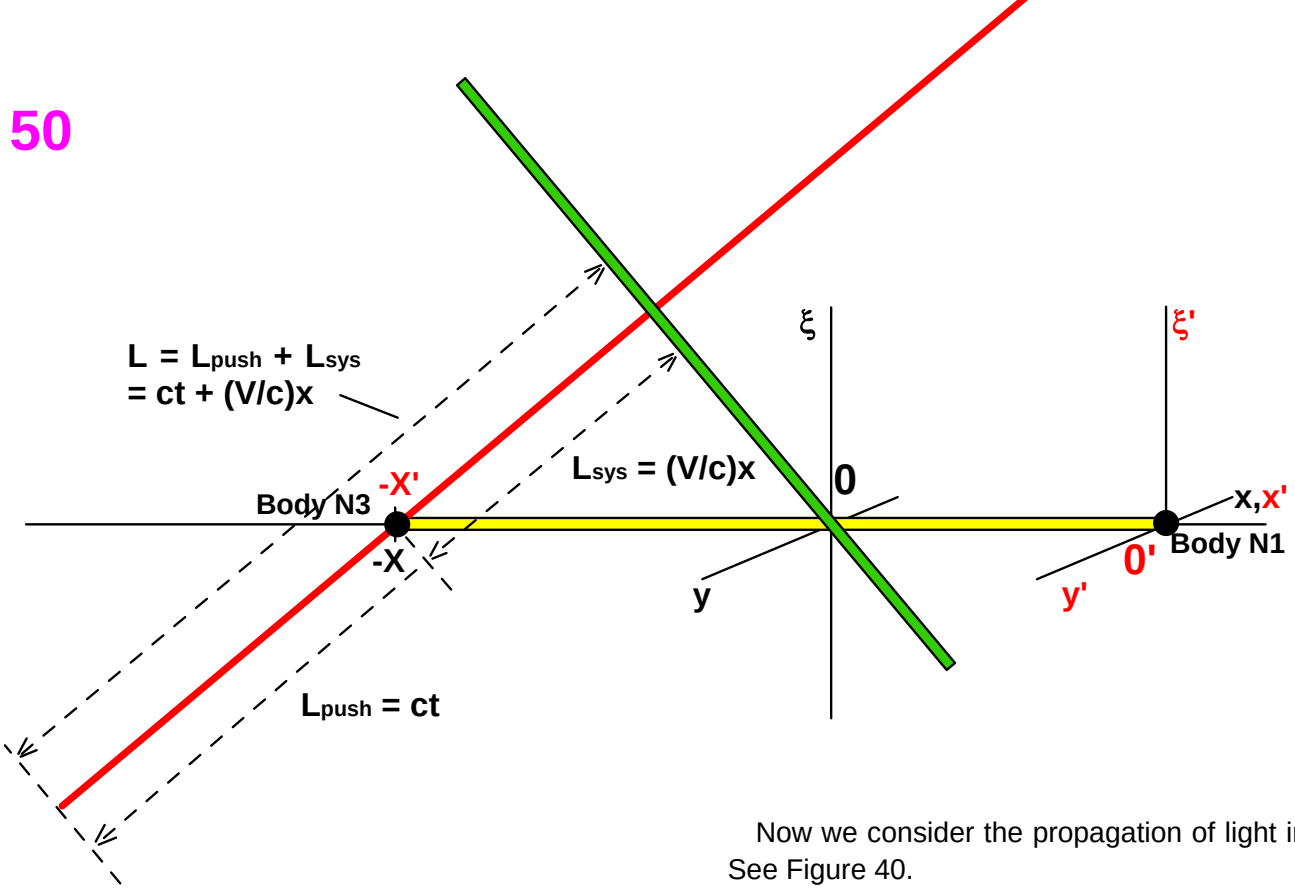


Figure.40

Now we consider the propagation of light in the negative direction of the axes (**-X,-x'**). See Figure 40.

On figure 40 the micro-object (**Body N3**) is located at the left side. We have to prove that the speed of light for this micro-object not changes when light propagates against its movement. The proof turns into proof of equality of the segments **L = L_{push} + L_{sys}** and **O'(-X')**. Here the segment (**L**) of micro-flow determines time of third micro-object (**Body N3**) relative to reference level (it is green line). The segment **O'(-X')** is the path traveled by the light from the first micro-object (**Body N1**) up to the third micro-object (**Body N3**). To view the proof please look at the page 50a.

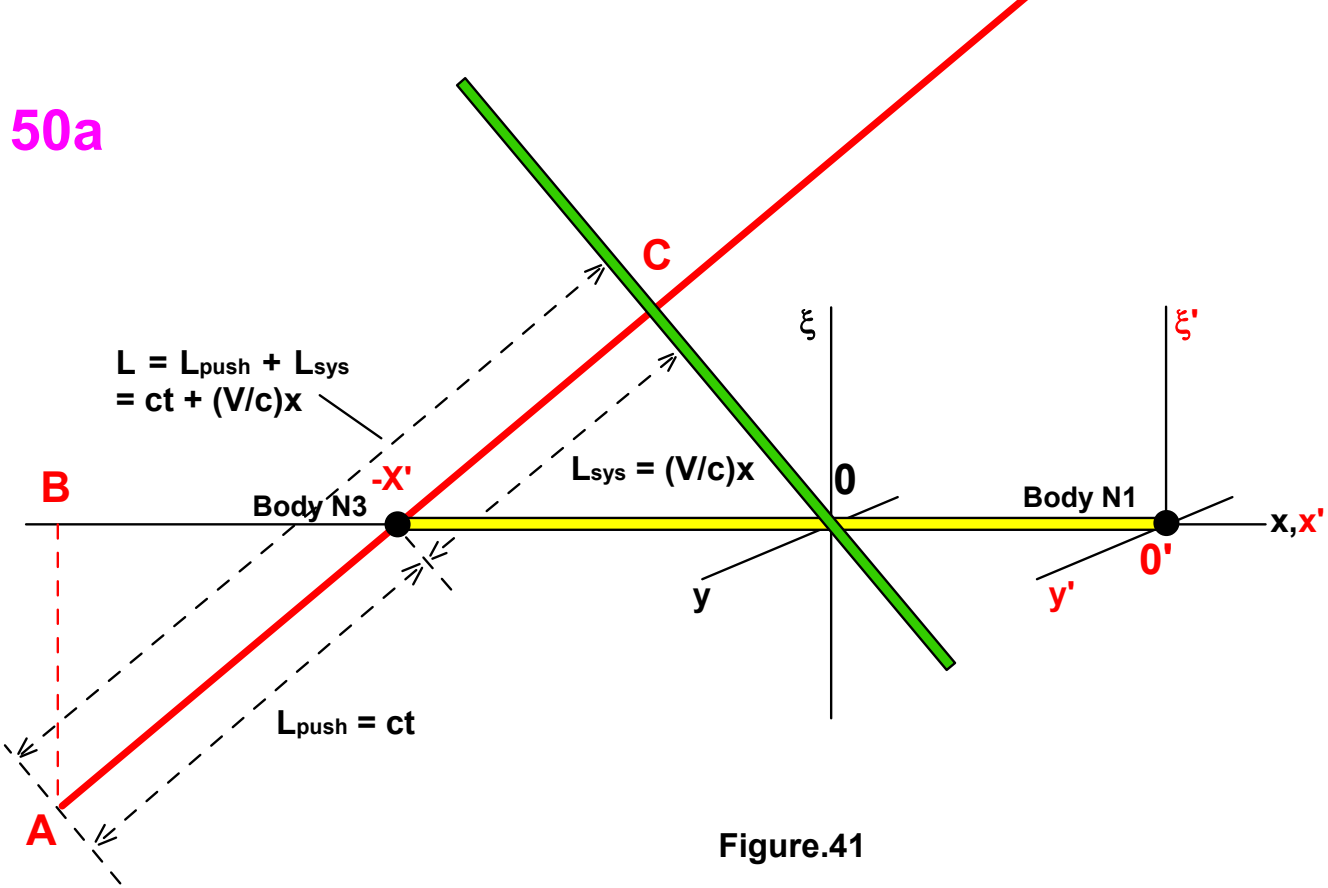


Figure.41

For further proof we draw a perpendicular line from the end of micro-flow onto the **x**-axis. See Figure 41. You recall that in the usual metric the length L_{push} is equal to **ct**. From this it follows that

$$L_{push} = (-X'0) = ct.$$

Equality is true because the length **(-X'0)** is the path travelled by the light in the absolute space for time **t**. In order to recollect this moment, check again Figure 41.

We consider the two triangles on it. First triangle is labeled with help of the symbols **-X'BA**. Second triangle is labeled with help of symbols **-X'C0**. These triangles are equal to each other, as they have equal angles and, in addition, have equal sides (**-X'A** and **-X'0**). From equality of triangles we have equality of lengths: $-X'B = -X'C = L_{sys}$.

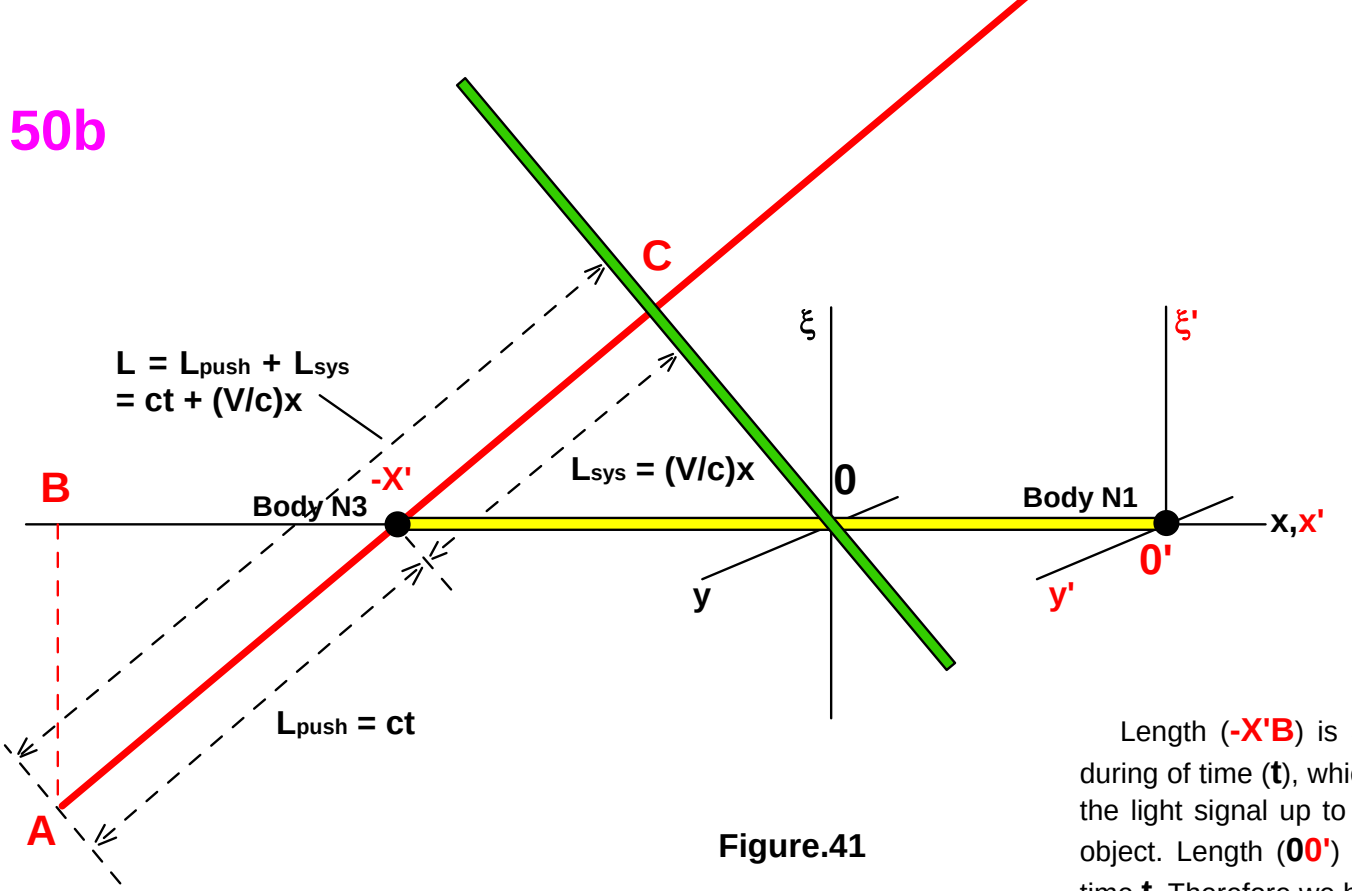


Figure.41

Length (**-X'B**) is a shift of the third micro-object (**Body N3**) during of time (**t**), which it had from the moment of the radiation of the light signal up to the arrival of the light signal at third micro-object. Length (**00'**) is a shift of the first micro-object during of time **t**. Therefore we have the equality **-X'B = 00'**.

The last equality gives equality of these lengths **-X'C = 00'**. This equality makes it possible to obtain the final result: **L= (L_{push} + L_{sys}) = ((-X'A) + (-X'C)) = -X'0'**. Result states the following. The length of the micro-flow of micro-object (**Body N3**) is equal to the path is travelled by the light. And since in the considered variant the length of micro-flow of this micro-object determines time from moment of light emission, the speed of light for the micro-object (**Body N3**) doesn't change. Thus, we have obtained second geometric proof of the formula (c). See the page 45. The formula should be considered for the propagation of light in opposite direction of movement of micro-objects along negative part of **x**-axis. Here, we can don't take into account of changes metrics spatial coordinates and time in the Lorentz transformation. Then the formula becomes

$$x + vt = ct + (v/c)x = L.$$

This proof showed that for third micro-object the speed of light isn't changed. This is ensured by the equality of path that light has travelled and the length of micro-flow that is giving the development of micro-object in time. And this phenomenon persists for all inertial systems, regardless of inertial motion. Similar proof can be carried out for the case when the light beam is reflected back from the third micro-object and after the light comes back to the first micro-object. And in this case we must have equality of length micro-flow of time and path length travelled by the light too.

The proof is over.

Conclusion.

Here the first part of the model ends. The only thing I would like to highlight and explain so that is what concerns the method of creation and presentation of this model. Here you have considered a model that is inherently physical-geometric model. A geometric construction or any proof in geometry may be proved in different ways and I think it's the experts understand. For example, I proved and revised more than three solutions. All they give the same result in the application to various geometric approaches to the proof, but of course, all they use in the derivation the main ideas of this model. For example, one could depart from the general model of the passage of aether through micro-objects, and I could use only passage of the micro-flows of energy out of the parallel space, etc., to obtain similar results, and it was easier to make. Especially, because recently in mathematical physics has become the norm to receive physical and abstract mathematical models and give them status as natural physical models. In this model, I tried to revive the primary understanding of the physical world that existed in physics up to the early twentieth century. And I wanted to create a model that would be understandable not only for narrow specialists but it must be a model that is acceptable for wide range of readers. I hope that I approached this goal. The second part will consider the Lorentz transformation for the coordinates in frame of reference of bodies at motion.

The proof will be performed in simplest form that is based on the physical requirements of conservation of the electromagnetic interaction in all inertial frames of reference. This requirement is naturally of course due to the constancy of the speed of light in the frames of reference of moving bodies. The third part of the work will be analyze the principle of relativity. It will be performed in frames of reference, which exist in absolute space, despite negation by opponents of absolute space. There it is proved. The frame of reference at rest is a special case for frame of reference that obeys to the Lorentz transformation. Such is the nature of wave matter of our world and time.

Now let's consider the main conclusions that follow from this work.

First, if there is aether pressure, at once there is an assumption about the existence of inhomogeneity in the pressure of aether of the parallel space. This heterogeneity in pressure should have little influence on the matter at the local scale, but on a galactic scale influence of heterogeneity pressure should affect strongly enough. This applies to origin of matter in our world, the formation of galaxies, etc. If this model is correct, it would be nice to start monitoring this pressure.

In addition, such monitoring is necessary because if there is acceleration of recession of galaxies in our universe, it becomes apparent final development of our universe and all matter in our world. Acceleration of recession of galaxies in universe takes place due to the effects of ether pressure of parallel space on the space of our world. This pressure bursts our space, causing it to expand. Accelerated expansion, suggests that our space approaches to the end of its cycle of destruction. Aether out of parallel space will blow up whole universe. Empty space will be exploded. In other words it can be said. Vacuum of empty space our universe will be blown up.

All the energy that will released by the explosion of the universe will collapse into lower parallel space and inside of a more lower parallel space this energy will give the birth of matter, as it happened in our space. Such are the cycles of life of parallel spaces. Unfortunately it is true, if we have a real acceleration of recession of galaxies galaxies inside of the universe of our world.

Second, this model implies the existence of parallel space with the presence of high pressure aether. As a consequence, if the model is correct, then we can look for ways to extract energy from the parallel space in the future.

Third, I have already said, but I will repeat again, us need the real quest of the state of matter when it loses the property of inertial mass. In this case, the matter will lose wave properties and it will not obey to the relativistic laws and we can determine own absolute motion in space with help this state of the matter.

Fourth, there is the interesting possibility for artificial launching of micro-flows of matter in the opposite direction. It would be nice to do a real test for the possibility of creating antigravity forces, and we could look at impact of the reverse micro-flows on life time of micro-objects, etc.

That's all, thank you for your attention to my work.

See the next part.