The Boreal effect - Law of insignificant action

(Translated from Polish into English by Andrzej Lechowski)

Abstract: In the article there is presented law of insignificant action. A chance to show, how works this law in physical phenomena, is discovery made by prof. Louis Rancourt, a physicist at College Boreal, Canada. The author of the article based on the law of insignificant action, which is an important part of constructive field theory interprets the course of events, which discovered prof. Louis Rancourt. Until now these phenomena by means of other theories couldn't be logically explained. In order to present the law of insignificant action the author also uses illustrations made by a computer program in which models of the fundamental particles by their mutual accelerations interact with each other in a similar way as it happens in nature.

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1 The essence of discovery - Interpretation of the explorer

I recently got an interesting information about the discovery of new natural phenomenon. It was discovered by prof. Louis Rancourt, a physicist at the College Boreal, Canada. He called his discovery the Boreal effect. About his discovery prof. Rancourt writes among other things on the forum http://www.researchgate.net/ (both his profile and some of his statements are available at http://www.researchgate.net/profile/Louis_Rancourt3/).

In one of their experiments prof. Rancourt used two masses - 100 g and 500 g. He placed the smaller mass on the torsion pendulum, and greater mass placed near the smaller mass. After stabilizing the position of smaller mass (fixed on the torsion pendulum) in relation to the greater mass, the researcher emitted the laser beam of light through the space between the two masses (in another experiment, it was a ordinary beam of light). The result was that the smaller mass approached the greater one.

In another experiment, the researcher does not apply the action of the greater mass on the smaller, but had only a torsion pendulum and hanging from it a 100 g weight. In this experiment, a light beam passed through the space not far from the weight, for example, from the North side. The weight under the action of the light beam moved to the North, that is, approached to the beam. And when he emitted the light close to the weight from the South, then the weight deflected to the South.

Experiments were conducted under various conditions, including a cellar. In any event, in various places of basement, or at various locations of the laboratory, the arm of torsion pendulum with the suspended mass positioned itself in various directions. About the direction decided location of the nearest large masses of matter - the wall, instrumentation, etc. And each experiment confirmed that by switching the beam of light, the mass hanging from the arm of the torsion pendulum was approaching the beam of light, and when only the beam of light was switched off, then followed return of the arm with mass to its original position

Professor. L. Rancourt doesn't know the physical mechanism that leads to the fact that the beam of light can unsettle the balance that exists in the surrounding matter, and to move the mass to be nearer to the beam. Because based on the theories of what is known to today's physics, you cannot explain this behaviour. However, he is trying to make his way to interpret the course of events. Prof. Rancourt

believes that occurring in the experiments behaviour of the mass in the presence of the beam of light is a consequence of the fact that light has the ability to block the effects of gravity.

He believes that if one is not convinced that the light can block the force of gravity, he should perform this simple experiment with a torsion pendulum and the source of light - in his view, this experiment demonstrates the veracity of such interpretation. He gives an illustrative example in which during the suction of air from the plastic bottle its walls approach closer together. Under the influence of this picture may appear simple explanation: the walls are attracted to each other. But there is another explanation: the walls come closer to each other under the influence of external pressure. Almost everyone will accept the latter explanation. The simplest explanation, which rises to describe orbiting of the Earth around the Sun, is that the Sun and the Earth attract each other. But a different explanation may be that in the area between the Earth and the Sun, the pressure is smaller than the external pressure, resulting in pushing the Earth and the Sun towards each other.

2. The interpretation of the Boreal effect by CFT

In presenting information on the discovery of the Boreal effect, for its explanation I would not recommend interpretation that suggests the researcher. Because even if to explain the physical mechanism of the Boreal effect we use the concept of pressure difference, it doesn't mean that this mechanism is associated just with the impact of gravity. Because, in fact, today's theoretical physics does not know the mechanism of action of gravity. Currently, this mechanism - the gravity alone as well as the Boreal effect - can be explained only on the basis of ideas, which are contained in the constructive field theory (CFT).

Under given conditions, the stability of the position of the weight of 100 g mass in torsion pendulum is determined under the action of matter of considerable mass, which is located around the research position. The nearest matter of considerable mass can be, for example, the walls of a laboratory. But on the stability of the position of the weight in the torsion pendulum not insignificant influence exerts the surrounding air too. Because the stability of the position of the weight on the torsion pendulum you need to carefully protect, properly securing a research position against accidental blasts of air and convection movements. Actuation near the stabilized torsion pendulum of airflow, for example, due to a lighter flame ignition, will cause destabilization of the position of the weight on the torsion pendulum. Thus, in this context, the statement of the discoverer of the Boreal effect, that imbalance of the weight position on the torsion pendulum due to running in its vicinity of the light beam can occur as a result of the formation of pressure difference is right. But it is wrong to call this phenomenon as blocking of gravitational influence.

In this case, a more reasonable interpretation would be that it is due to pressure control of fluid matter. This fluid matter is the matter of the medium in which there is the torsion pendulum along with an additional mass of 100 g however, a factor that destabilizes the pressure distribution and re-initiates its self-regulation, but to a new state, is a beam of light. When next to the fastened weight on the torsion pendulum we cast a beam of light, then in this spot (by one side of the weight), where runs beam of light, there is reduced pressure of the medium. This reduction in pressure under the influence of light is just that interesting phenomenon that requires explanation.

According to L. Rancourt's information on his experiments he presented, he used a beam of light. As a result, he obtained such an influence of beam of light on matter of the medium, as it's shown above. There are grounds, to assume that in similar experiments can be achieved an adverse effect on matter of the medium, that surrounds the weight on the torsion pendulum. About such experiments L. Rancourt did not mention, so you can guess that he did not carry out. The opposite effect could be obtained if, instead of the beam - as "heat source" - used in the experiment "cold source" in the form of a container with liquid helium. Then, as we can suppose this kind of influencing factor would cause that there followed distancing of the suspended weight on the torsion pendulum from this factor.

If we would use terminology applied by the discoverer of the Boreal effect, we could say that in such

case there occurs unblocking of gravitational influence. So from the side where the vessel with liquid helium was placed, there was an increase of gravitational influence (in the form of external pressure) on mass, which contributed to moving the 100 g weight away of the vessel with helium. But it would be equally mistaken belief about changing of gravitational influence, as interpretation, which would be based on changes in pressure.

There is a need to make it clear, which the reader at first glance may not notice. Namely, an interpretation that is based on changes in pressure, is somewhat flawed. It should be noted that the interpretation of the Boreal effect, which uses the concept of formation pressure changes under the influence of beam of light or vessel with liquid helium, *) is contrary to the laws of thermodynamics. Because really, the behaviour of the weight on the torsion pendulum is contrary to the laws of thermodynamics. Introducing to the area of the experiment of beam of light is equivalent to the introducing of the additional thermal energy source, whereas the insertion of the vessel with liquid helium is equivalent to the introduction of a strong absorber of thermal energy. From thermodynamics it is known that if at a certain area will be heated gas and the area will be closed, then there will increase the pressure. If, however, the gas will be able to expand, then the area of the heated gas will increase in volume. Thus, based on the laws of thermodynamics we can expect that the introduction of the light beam to the area next to the weight of a mass of 100 g will result in moving the weight away from this area, and not approaching. Because there was a certain portion of energy supplied. Similarly, the introduction of a vessel with liquid helium to the area next to the weight should result that the weight approached that area. **) Because there was introduced a strong energy absorber, relative to which, in other locations around the weight there is a large surplus of thermal energy. Matter in these areas should spread, causing finally the motion of the weight towards the cold area.

Interpretation of the Boreal effect, which is based on pressure change, is to some extent wrong ... but only to a certain extent. Because in some circumstances there may indeed occur change in pressure of matter, but the influence on the change in pressure would have to be of a special kind. This particular type of influence is relatively easy to examine.

Professor. L. Rancourt does not mention if he examined how changes impact of light on matter, by using (in various experiments) beam of laser light at different frequencies. It can be assumed that he hasn't been examining of such dependence. And it is the existence of this particular type of effect on weight, which is beyond the scope of laws of thermodynamics, can be confirmed using various frequencies of light. When the action of the beam of light on the weight by increasing the frequency results in bigger and bigger deflection of the weight from the position, which it has when the light is off, this testifies about the most important aspect of such an experiment. When the particles of matter in a place where is the path of light, vibrate faster and faster, creating a running into the distance light wave of increasing frequency, in turn reduces the impact of this matter on the weight of 100 g mass, which is located on the torsion pendulum. This reduces impact on the weight and everything else that exists around.

It is true that, according to the physical knowledge application in the experiment of the light beam with increasing frequency is also associated with the introduction into the area near the weight more and more energy. Thus, the increased effect of shifting the weight toward the light beam can be seen as consistent with the principle of conservation of energy. It could be so construed, but it does not explain why even in this case the weight shift direction is inconsistent with the laws of thermodynamics.

The existence of the Boreal effect is a testament to the fact that there is another effect, without which there would be no Boreal effect. This effect is described in the March 2006 article "Law of insignificant action and related with it phenomena" (in Polish on http://www.pinopa.republika.pl/05_ZakonND.html, in Russian on http://konstr-teoriapola .narod.ru/05_ZakonND.html). Here's what you can read there:

*"Law of insignificant action is part of the dynamics - and it involves Newtonian dynamics, and the dynamics of automatic motion. ***) The essence of this law comes from Galileo's law of gravity, and is*

based on the fact that the effective result of interaction between (for example) two objects depends on the speed with which they move relative to each other. The law is manifested most efficiently when the relative speed of the bodies are very large. Then the interaction of moving objects relative to each other (friction, resistance), almost does not exist. Conversely, if the relative velocity is sufficiently small, the manifestation of this law is minimal and it is not noticeable. Because there is sufficient time then so that it could effectively be manifested precisely the interaction of objects.

In normal daily life we have to deal with such small relative velocities of objects that the law of insignificant action (IA law) is not even noticed by people. Although in nature can be found the example, when the IA law manifests itself at low speed of an object. Something like this is possible because, we do not always (as humans) can see the speed and assess its value. We see objects at a scale and speed at this scale, but we do not see the components of these objects and their speed, existing in a completely different scale.

It happens that one sees the globe lightning that comes close to the window pane. He sees the slowly moving material ball, but cannot see very fast moving (in vibrating motion and not only) components of the sphere. Here he sees the ball - slowly moving (!) - passes through the glass window, and a moment later moving on the other side of the glass. Of course, if he does not know the law of IA, he does not understand what happened - did not understand the mechanism of the phenomenon.

It is true that the globe lightning was moving slowly and penetrated through the window pane on the other side, but the phenomenon alone occurred for this reason that the constituent components of atoms of which consisted of the sphere, were moving in oscillatory motion at high speed and with relatively very large amplitude (relative to the amplitude of the atoms that are in the glass material). And this large amplitude of oscillations (of constituents) of atoms is in the phenomenon of utmost importance. (You can guess that in globe lightning whole atoms don't exist (as they exist in the glass material), but the combination of their constituent components. These components not only vibrate, but also very quickly move within the volume of a sphere.) Thanks to vibrations of components of atoms at large amplitude in the volume of globe lightning, in fact, due to their high speed in the body of the lightning relative to glass atoms, they leak through glass material. The free leak of the globe lightning through the glass is for this reason that the atoms of glass and constituent components of lightning spherical body can not keep up effectively interact together. And that is why the law is called "the law of insignificant action". "

This can be compared with what is happening in the light area. The particles within the beam of light area, by their vibrations carry light waves, because of their rapid movements not enough effectively interact with matter, which immediately surrounds the beam. Thus, in this place where there is a beam of light, a very intensely vibrating matter ceases to be a component that has so far along with the rest of the remainder matter sustained stability. So for particles of matter from the proximal and further area around the beam of light there are disappearing the hitherto existing supports of their stability. In this situation there must be established a new kind of stable structural system of components. Because fast vibrating matter in the area of the beam of light in relation to matter outside of the beam of light becomes invisible to a certain extent. For this reason, is produced the effect of reducing the pressure of matter in the area of the beam of light, there follows pressure equalization with surrounding matter of the medium (and not just of the medium) and the result is approaching of the weight of 100 g mass in the direction of the light beam.

3. Computer illustration of law of insignificant action

It is well known adage that a picture speaks a thousand words. On the subject of law of insignificant action even more says several pictures - figures that show the interaction of the fundamental constituents of matter. And no doubt much more will explained by video that illustrates the interaction of these components of matter. That's the short videos that are related to the law of insignificant action can be viewed using a computer modelling program Gas2n_A.exe. ****) These are the images of moving particles, giving each other accelerations in similar way as it happens in nature. These images

allow to conclude about the processes that actually occur in the matter and see (with mind's eye) that the law of insignificant action is associated with actually existing phenomena.

Operating this program there can be seen two particles that in different experiments run at different speeds relative to the structural system, which consists of nine particles and they interact with the system. The process takes place in "volume of virtual thermos" virtual walls of which limit motions of particles and are an obstacle, so that the particles change their direction of motion. (The virtual thermos is a procedure which is applied by a programmer - creator of the computer program, in order that two particles repeatedly turn back toward the system consisting of nine particles. Through this procedure, movements of particles resemble vibrating motions and contribute to the fact that two particles can affected by a long time the system of nine particles.)
In the figures below you can see a stable system of nine particles and various situations that are associated with it.

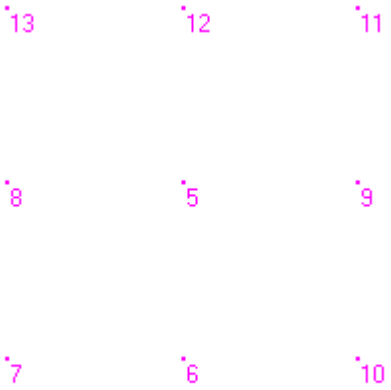

Figure PwP2. Stable structural system of nine particles

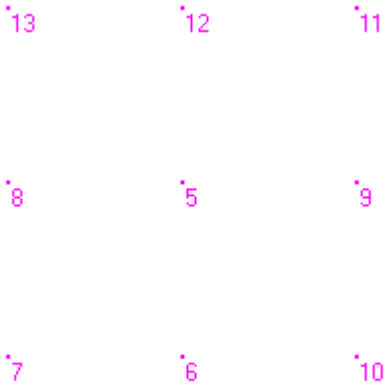

Figure PwP2_T8056. Stable position of nine particles after the 8056 computational iteration

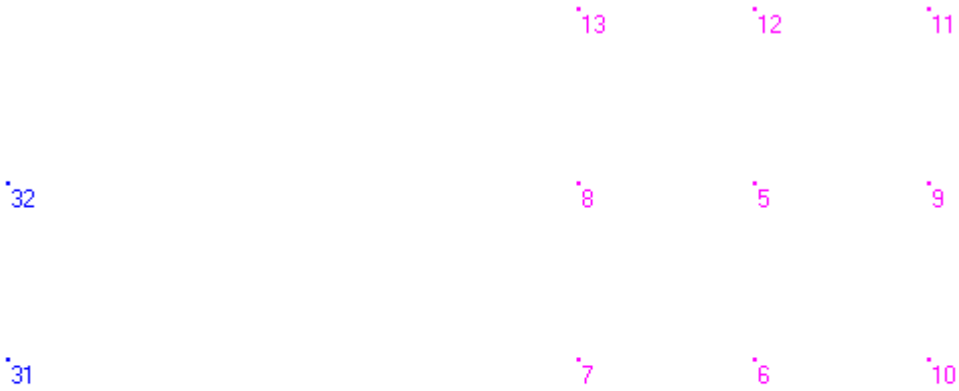

Figure PwP2a. Initial position of particles in the working files 1) PwP2a.gas, 2) PwP2aa.gas, 3) PwP2b.gas. A pair of particles "31" and "32" in each case has a different initial velocity u(x) (speed in units of speed; in the figure - to the right), and so for 1 - 10 u. of s., for 2) - 50 u. of s., for 3) - 10 000 u. of s., for 4) - 1 000 000 u. of s.

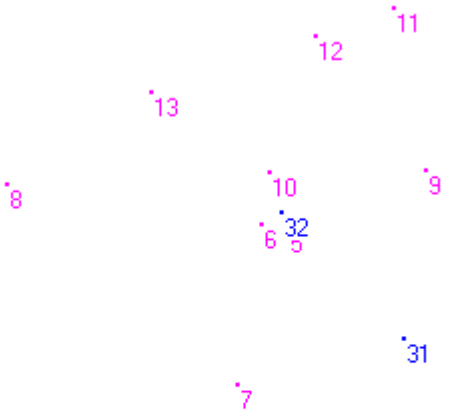

**Figure PwP2a_T2036.
Location of particles of working
File PwP2a.gas after
2 036 computational iterations**

When running the file PwP2.gas, at the initial velocity of particles "31" and "32" equal to 10 units of speed, a relatively long time elapses before the particles reach the structural system consisting of nine particles.

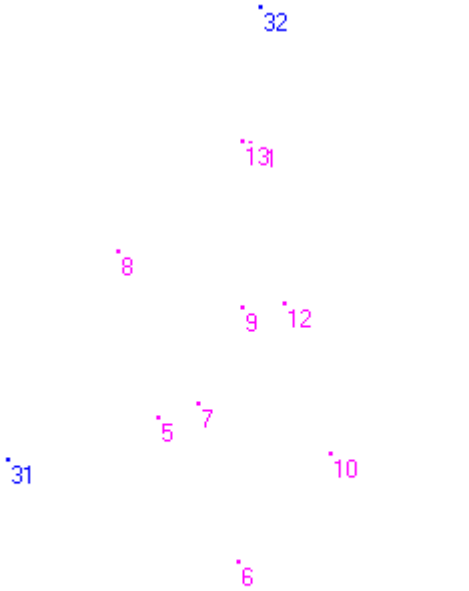

**Figure PwP2aa_T933. Location of
particles of working file PwP2aa.gas
after 933 computational iterations**

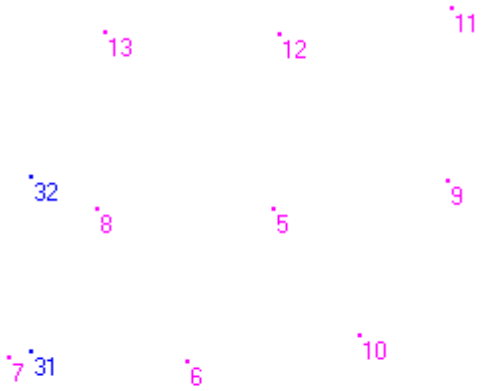

**Figure PwP2b_T943. Location particles
of working file PwP2b.gas after 943
computational iterations**

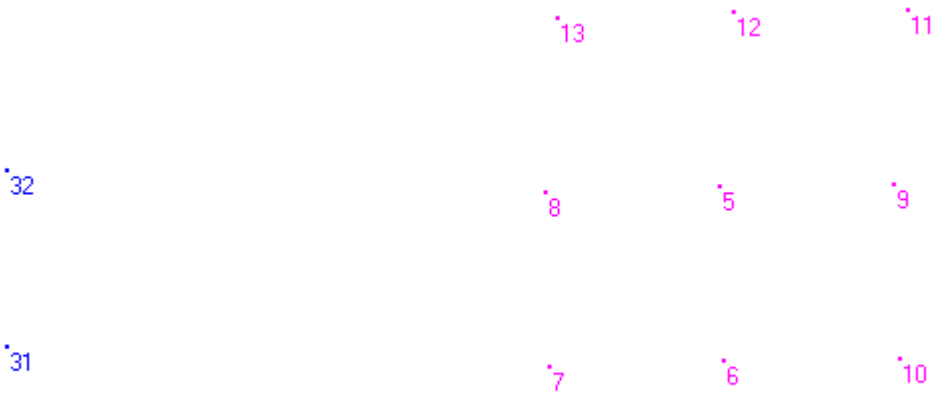

Figure PwP2c_T2022. Location of particles of working file PwP2c.gas after 2 022 computational iterations

When running the file PwP2.gas, at the initial particle velocity "31" and "32" equal to 10 u. of s., a relatively long time elapses before the particles reach the structural system consisting of nine particles.

It so happened that in Figure PwP2c_2022 particles "31" and "32" stopped at a position that resembles their starting one, which is shown in figure PwP2a. However, during the duration of the process, when were made 2022 computational iterations the pair of particles moved at 1000000 u. of s. When this couple of particles flew 3 units of length (that is, from one to the other wall of virtual thermos), then once flew through an area where there was a structural system consisting of nine particles, thus during the 2022 computational iterations the couple of particles very many times flew through the system of particles. Specifically, at 1000000 u. of. s. of the pair of particles in this exercise, during of 2022 of computational iterations the pair flew through the given structural system approximately 67,300 times. *****) But their impact each time was insignificant. That is just the way of manifestation between particles of matter and between built of them structural systems that have relative to each other very high speeds, of the law of insignificant action.

4. The final conclusions

Based on the above, there can be drawn the most important conclusion. Namely, the Boreal effect is experimental confirmation of the existence of law of insignificant action. The existence of this effect suggests that the laws of thermodynamics have in material environment limited scope of action. They operate at low speeds of particles of matter relative to each other, or operate at relatively low temperatures of matter, and their action has estimated character. When matter having a relatively low temperature parameters in contact with matter, which has increasingly higher temperatures, the laws of thermodynamics work with less accuracy.

The law of insignificant action also allows to reveal prevailing in today's theoretical physics misunderstanding of the concept of mass of matter and association of mass with energy. The reader, especially a professional physicist, probably will see the relationship between the behaviour of matter under the law of insignificant action and existing in today's theoretical physics concept of relativistic mass. Because in addition to the Boreal effect there is another experimental proof of the law of insignificant action. This law confirms the behaviour of particles, which are accelerated in accelerators.

The fact that in accelerators with increasing particle velocities becomes increasingly difficult to give an impetus to particles to ever higher speeds, is the result of reduction of the real contact, of speeding faster and faster particles, with elements of accelerator, wherein using the electric field the particles are accelerated. The fact that this indeed is, one can convince of it on the basis of the above described exercises of particles, in which is visible as with the increase of the particles velocity relative to each other, the contact between them disappears. Today, this phenomenon is erroneously interpreted as an increase in weight of particles. Physicists who do not know the law of insignificant action, the occurring in accelerators effect mistakenly interpret as a result of increased mass of particles. Whereas,

in fact, neither occurs increase in mass of particles in accelerators nor a conversion of energy, that is spent for acceleration of particles, into mass of these particles. The current relativistic physics is entirely based on the apparent, wrongly interpreted, the phenomenon of increasing mass.

The functioning nowadays state of theoretical physics needs to be changed - it is necessary to eliminate from it the erroneous idea that relates to relativistic mass. Currently, such a change is possible - the knowledge of the law of insignificant action makes it possible.

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*) The idea of the experiment with helium should be implemented in the future. One can assume that someone will launch a study of the impact of the vessel with liquid helium on a weight, that is placed on a torsion pendulum. During such an experiment it can happen that, depending on the experimental conditions the behaviour of the weight under the influence of the presence of the vessel with liquid helium will proceed in accordance with known laws of thermodynamics. But it can also be such a behaviour of the weight under the influence of the liquid helium which is incompatible with those laws, as is the case with the light beam. How can it be in fact, which can be checked by performing experiment.

**) Experiments, which are designed to study the impact of liquid helium on behaviour of the weight on the torsion pendulum require additional comparative experiments, in which, instead of helium, at the same distance, would be situated the same mass as the mass of helium and the vessel together, but with the temperature prevailing in the environment.

***) Listed in the quoted excerpt dynamics of automatic motion of matter is also presented in the monograph "The Constructive Field Theory - briefly and a step-by-step" (in English the http://nasa_ktp.republika.pl/KTP_uk.html, in Polish on http://nasa_ktp.republika.pl/KTP_pl.html, in Russian on http://konstr-teoriapola.narod.ru/KTP_ru.html).
In the chapter "G) The dynamics of automatic motion of matter," read:
"When Newton was studying gravity and properties of matter, he based on a tacit assumption. He assumed, that bodies during gravitational interactions accelerate each other in the same way. Under this assumption, when in the mathematical function (that describes changes in acceleration of bodies depending on the distance) to skip the coefficient of proportionality, the remainder of this function for all the bodies is identical. The existence of such assumptions is evident in the third law of motion, when considered the operation of this law for the case of two bodies that orbit around their common centre of mass. Equality of the forces with which these two bodies interact with each other, just depends on the fact that bodies accelerate each other, and the functions that describe these accelerations, have the same mathematical structure. In this case, both forces are equal, and the common centre of mass remains motionless.

Currently, it is already known that Newtonian formula describes the gravitational interactions only in an approximate way. About this fact proves the existence of perihelion motion of planets and double stars. The orbital motion of these objects, you can more accurately describe by a function that is a derivative of the exponential function E, or by means of a function $E_p = \frac{-A \cdot B}{R^2} \cdot \exp\left(\frac{-B}{R}\right)$*. But this function is also a symbolic expression of the individual character of the gravitational field of any planet or star. This means that the coefficients of B in the functions that describe the speed of two different objects from the orbital system, may be different. In this case, in the system of bodies the Newtonian dynamics is not working, but the dynamics of self-motion of matter. In the system of such orbitting bodies the dynamics of self motion is physically expressed in such a manner that celestial bodies orbit, while the system as a whole moves in the space.*
Confirmation of the existence of self-motion on the basis of observational data, for example, orbiting system of the two stars, will be extremely difficult (if at all possible). Because the motion of double star as a whole may be due to the asymmetry with mutual acceleration of the components of the double star

(asymmetry caused by different mathematical functions and namely, by this $B_1 \neq B_2$), and may be the result of the interaction of the stars system with other stars, which may be due to effects of external factors on the system ."

****) To view models of phenomena involving particles, in which manifests itself the law of insignificant action, use Gas2n_A.exe executive program, which can be copied from http://pinopapliki2.republika.pl/Gas2n_A.exe_ZD.zip. In the bulk Gas2n_A.exe_ZD.zip file along with the executive program of exe format there are working files in gas format. In the working files are saved parameters of 11-particles - of centrally symmetric fields. On the screen, the particles can be seen in the form of dots, each of which represents the centre of the particle - of centrally symmetric field. For now, there is no such a computer program that would allow for direct presentation of the law of insignificant action. At the moment the law of insignificant action is presented indirectly by means of the behaviour of a stable structure (9 particles) in the presence of moving of the system of two particles at different speeds.
To watch a video of the behaviour of particles, you have to open the executive program Gas2n_A.exe, and with this program should open the selected working file in gas format. In this file are stored output parameters of particles that are involved in the interaction. When you open a working file and set the parameters of the executive program you can start the process and see its course on the screen.
The key is to set the parameters of the program Gas2n_.exe and adapting it to operate with the given working files. It consists in activating the "Thermos3X3" push (upper left corner of the screen) and the "EPES" push on board "Formula". In addition, you can use the additional features of the program:
1 numbers at the dots that represent the particles are line numbers in the table "Listing", in which are stored the parameters of the particles - to get numbers, press the "View" push, and then "Show Numbers od Points";
2 if you enable the "Show Listing" push there follows slowing down of running process that is observed on the screen, and in the table of parameters "Listing" there show to date at the given moment the positional parameters of particles in the coordinate system or their speeds;
3 The change of positional parameters of particles, that are stored in the table "Listing", into particles velocities (or vice versa), follows by double-clicking the left mouse button on the white table area "Listing";
4 double-clicking the left mouse button on the number "0", which is located next to inscription "Time" runs the counter of computational iterations performed or stops the counter; (Note: Please be careful and without need - by inattention - do not press the "0" which is slightly below, next to the value "dt", because in this way the table "Listing" are reset in an irreversible manner the speeds of all particles stored there.)
5 to enlarge the viewed image on the screen click repeatedly the left mouse button on the black "thick" arrow, which is directed "to the left, down";
Note 1: Computer modelling programs that can be copied from the "pinopa's page" operate properly on computers running Windows ME and Windows XP. It is possible that they will function properly with other programs of Windows, but it needs to be checked.
Note 2: When you open a computer program Gas2n_A.exe there appears on the screen starting position of the particles of the working file that was run on the computer before switching off. In order that output data running of the file was correct, you have to open it in the same way as it will open the second and subsequent work files.
Note 3: Important for people who are accustomed to the Anglo-Saxon way of separating by "dot" of the whole number from its decimal part. The computer program Gas2n_A.exe for this purpose, uses a "comma".

*****) When the computer program parameters have values: dt = 0.0001, the distance between the walls of a virtual thermos 3 units of length and velocity of particles "31" and "32" is equal to 3 units of speed, then the particles are overcome distance "Wall to Wall" of virtual thermos at such time, as it takes 10,000 iterations of computing. (You can check this by means of the exercise using working file proba1.gas file.) At a speed of particles equal to 1000000 units of speed the exercise took as much as it

takes 2022 iterations of computing. If, instead of particles velocity equal to 1000000 units of speed, the speed of the particles was 3 units of speed, then these two particles would overcome a distance equal to 3*2022/10000 units of distance. But the particles didn't have three units of speed, but 1000000, thus overcome the distance (1000000/3) times larger than at the speed of 3 units of speed. If this distance, which the particles overcame to divide by 3 (i.e. by the value of the distance between the walls of the thermos), then the result is the number saying how many times these two particles intersected the area where there is a structural system of nine particles. Thus, (3*2022/10000)*(1000000/3)/3=2022*100/3=67333.3; just as many times the couple of particles flew through the system consisting of nine particles.

Bogdan Szenkaryk "Pinopa"
Poland, Legnica, 2013.04.15.