New Newtonian Mechanics and New Laws of Motion

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(2015.5.10—2015.5.20)

Abstract: The Newton third law by the proof been the wrong been the already, had experimenting of see the substantial evidence on the video , also have the proof of the preciseness treatise. Regard this as the basis to further get, be to the new proof of the Newton second law. New Newton three law, will become more accurate, more useful mechanics principle, guide the new mechanics system deduce and the establishes.

Key Words: Newtonian mechanics; Force; The firstly law; The secondly law; The third law; Partial derivative; Inverse derivative; Contrary derivative; Inverse differential; Contrary differential; Cycle; Rate; Motivity equation
PACS: 45.20.Dd, 45.40.àf, 45.50.àj, 45.50.Dd

0 Introduction

This article will is to opposeless the theory argumentation, to is proof new Newtonian mechanics, and new second law of motion and the law of third. New Newtonian mechanics and the law of motion, will be new guidance to the physics of foundation and the mechanics. The mechanics and physics of foundation, will present a brand-new feature. Several foundation physics and the dynamics the experiment[1,2], gave to the proof of the new theory support. Several in advance treatise concerning Newton third laws[3,4], is this investigative beginning.

1 First Laws of Motion

The first laws of motion is a law of inertia[5,6]. It keeps constant, namely: Any object all keep the state in the quiescence or uniform linearity motion, until other the object by an acting force forces it to change this kind of state.

2 New Secondly the Laws of Motion

The secondly law of the classical mechanics[5,6] is wrong, because according to: " The object acquisition the size of the acceleration and the size of the composition external force is direct proportion, with the object the mass is inverse proportion " [5,6] The secondly law the mathematics expression is:

$$F = ma \tag{2.0.1}$$

and

$$F = m\frac{d^2 l}{dt^2} \tag{2.0.2}$$

To see is not difficult, when $\boldsymbol{F}$ is certain, in the formula the $\boldsymbol{m}$ and $\boldsymbol{a}$ is change with the inverse proportion. So if $\boldsymbol{m}$ change a multiple of $\boldsymbol{x}$ or $\mathbf{1}/\boldsymbol{x}$, then:

$$F = xm \cdot \frac{d^2 l}{xdt^2} = xm \cdot \frac{d^2\, l/x}{dt^2} \tag{2.0.3}$$

$$F = \frac{m}{x} \cdot \frac{xd^2 l}{dt^2} = \frac{m}{x} \cdot \frac{d^2 xl}{dt^2} \tag{2.0.4}$$

Is all to mean, representative the object displacement the ***l***, is to change with the inverse proportion. This be classicality mechanics the second law so to that mistake. The force be token make the object occurrence motion changes that capability, but changes to this kind of motion in the meterage, must have the nominal measurement unit. Because the character of the derivative, this time its the unit obviously is the time ***t*** . But the another element(the displacement) the ***l*** that meterage, then is alterable. Displacement the ***l*** and time the ***t***, the changes toward object motion, obviously the ***l*** is direct correlative with the size of the force ***F***. And it is possibility big also possibility small, then how to make sure to displacement the ***l*** be the big time and small time, in the different condition to measurement the force ***F*** is equitable?

In fact, is impossible to be accurate with computation and measurement of the force at this time. Therefore the second law of the classical mechanics is wrong.

2.1 The New the Second Laws of Motion the Partial Derivative Formula

New second laws of motion by token, the object by external force action, its acceleration that acquisition, with the size of the external force be nearly. But this time key is, in measure and computation, the object concerning changes of motion, with the displacement the ***l*** is the mark unit. So use the Partial derivative at this time[7,8]. Hypothesis:

$$F = m \cdot f\left(l,t\right) = m \cdot \frac{l}{t^2} \tag{2.1.1}$$

Make the force ***F*** to the displacement the ***l*** compute the Partial derivative:

$$\frac{\partial F}{\partial l} = \lim_{\Delta l \to 0} m \cdot \frac{f\left(l+\Delta l,t\right) - f\left(l,t\right)}{\Delta l} \tag{2.1.2}$$

This explain, in every time compute, the force ***F*** with that the displacement the ***l*** is the mark to the compute unit. Every time standard computation or measurement, displacement the ***l*** is the computation unit, also be take that same computation numerical value.

So, new second law of motion, the force the partial differential is:

$$d_l F = \frac{\partial F}{\partial l} dl \tag{2.1.3}$$

This kind of circumstance in fact is:

$$d_l F = \lim_{\Delta l \to 0} m \cdot \left(f\left(l+\Delta l,t\right) - f\left(l,t\right)\right) = \lim_{\Delta l \to 0} m \cdot \frac{\Delta l}{\Delta^2 t^2} \tag{2.1.4}$$

If record formula as:

$$F = \lim_{\Delta l \to 0} m \cdot \frac{\Delta l}{\Delta^2 t^2} \tag{2.1.5}$$

Then more visual. For the sake of the convenience of the computation, the new computing method produces out namely:

$$F = \lim_{\Delta l \to 0} m \cdot \frac{\Delta l}{\Delta^2 t^2} = m \cdot \frac{ql}{q^2 t^2} \tag{2.1.6}$$

This be called " Inverse derivative " or " Contrary derivative " . Is at the variable of the numerator tends nigh zero hour of the limit of the fraction.

2.2 New Computing Method

Therefore new computing method creation came out. Namely the inverse function:

$$x = g(y) \quad \text{or} \quad x = f^{-1}(y) \tag{2.2.1}$$

And Inverse derivative (Contrary derivative):

$$\left[f^{-1}(y_0)\right]'^{+} = \frac{qy_0}{qx_0} = \lim_{\Delta y_0 \to 0} \frac{\Delta y_0}{\Delta x_0} = \lim_{\Delta y_0 \to 0} \frac{\Delta y_0}{f^{-1}(y + \Delta y_0) - f^{-1}(y)} \tag{2.2.2}$$

So the Inverse derivative is records to $[f^{-1}(y_0)]'^{+}$, and qy_0/qx_0. With the differential of the derivative for opposite, the qy_0 and qx_0 too call Inverse differential.

The Inverse derivative and derivative has the hypostatic difference, the differential quotient of the derivative is direct ratio the relation with the dependent variable the y , but the Inverse differential quotient of the Inverse derivative is inverse ratio the relation with the dependent variable the x .

The Inverse derivative also has second-order and nth-order …, the second-order Inverse derivative is will dependent variable the x_0 to the square:

$$\left[f^{-1}(y_0)\right]''^{+} = x_0''^{+} = \frac{1}{qx_0}\left(\frac{qy_0}{qx_0}\right) = \frac{qy_0}{q^2 x_0{}^2} \tag{2.2.3}$$

Because the derivative the differential quotient and the Inverse derivative the Inverse differential quotient, is each with denominator and numerator for independent variable. Therefore in Inverse derivative calculate velocity and acceleration, with in the derivative also is different.

According to the principle of the derivative, the derivative of the random constant c is equal to zero[8,9,10].

$$(c)' = 0 \tag{2.2.4}$$

Therefore random the constant calculate in the derivative, all can free pass derivative in and out but do not affect its value and computation[6,8,10]. For example:

$$(cu)' = cu' \tag{2.2.5}$$

This a kind circumstance in Inverse derivative, also should be the same. Is namely:

$$(cu)'^{+} = cu'^{+} \tag{2.2.6}$$

Therefore this in the computation between derivative or Inverse derivative, will is simplify greatly. In below concerning new laws of motion the deduce course, while involving the multiple between the variable y or x, the value of its multiple can is see as constant, therefore that can adopt the above method to calculate in simplify.

So the Inverse derivative to velocity representation:

$$u = \frac{ql}{qt} \tag{2.2.7}$$

But the acceleration of the Inverse derivative is then the second-order:

$$a = \frac{ql}{q^2 t^2} \tag{2.2.8}$$

The Inverse derivative computation velocity and acceleration, that different simply its numerator takes to fix the numerical value. Namely the distance that move takes to fix the number, but undergo the time of then may differ. For its velocity and the acceleration that the actual concept, then basic be same.

In addition, because Inverse derivative the dependent variable $\boldsymbol{x}$ is inverse ratio with the Inverse differential coefficient, but second-order Inverse derivative the dependent variable $\boldsymbol{x}$ is inverse ratio to the square with the Inverse differential coefficient, namely the dependent variable $\boldsymbol{x}$ if change a multiple of $\boldsymbol{\beta}$, the second-order Inverse differential coefficient also inverse ratio the change a multiple of $\boldsymbol{\beta}^2$. The this circumstance caused namely the creation of the new second laws of motion. There is hypostatic differ with the classical mechanics second laws of motion.

Like this Inverse derivative and Inverse differential the principle, to physics and engineering the computation, will be of great benefit necessarily.

2.3 The Character of the New Second Laws of Motion

In the force of the object of act with the Contrary derivative computation, will produce the freak effect.

The partial differential the formula(2.1.3) and Contrary derivative the formula(2.1.6), is force concerning object that computation that new exactitude the formula. But formula(2.2.1)_(2.2.3), again explain the Inverse differential coefficient of the Contrary derivative is with the dependent variable $\boldsymbol{x}$, is the relation between the inverse ratio or the inverse ratio the square.

The object in motion, the force $\boldsymbol{F}$ with the object the mass $\boldsymbol{m}$ and displacement $\boldsymbol{l}$ is direct ratio, but with time $\boldsymbol{t}$ is inverse ratio. Because in Inverse derivative computation, the $\triangle \boldsymbol{l}$ is get tend to zero hour the limit. So in this computation, the change of the force $\boldsymbol{F}$ of in correspondence, only should have the variable $\boldsymbol{m}$ and $\boldsymbol{t}$, namely the mass of the object with the time.

According to the principle of kinetic matter, the force $\boldsymbol{F}$ with the mass $\boldsymbol{m}$ of the object is direct proportion, but with time $\boldsymbol{t}$ is inverse proportion. Therefore be the mass $\boldsymbol{m}$ or time $\boldsymbol{t}$ to change of same multiple with the inverse proportion(for example a multiple of $\boldsymbol{\beta}$). Namely:

$$\beta F = \beta m \cdot \frac{ql}{q^2 t^2} = \beta m \cdot a \tag{2.3.1}$$

$$\beta F = m \cdot \frac{ql}{q^2 \left(t/\beta\right)^2} \tag{2.3.2}$$

The force $\boldsymbol{F}$ also changes the a multiple of $\boldsymbol{\beta}$. But at this time in formula(2.3.2) , the equal sign that dexter the absolute value it is dissimilarity.

$$m \cdot \frac{ql}{q^2 \left(t/\beta\right)^2} = m \cdot \frac{ql}{q^2 t^2 / \beta^2} = m \cdot \frac{\beta^2 ql}{q^2 t^2} = m \cdot \beta^2 \cdot a \tag{2.3.3}$$

Namely this time equal to the acceleration ***a*** by multiply to the a multiple of β^2 . Thereupon this is very freak, two the change of circumstance forces are uniform, but its equality dexter(the product of mass and acceleration) the absolute value is differ.

So is like this, is because the variable ***m*** and ***t*** respectively is once and quadratic function. So conduce the variable ***t*** in change time, its mutative multiple by is multiply to square. In above compute, because the function the order is diverse, so two part multiple computed are cannot confusion. For instance in above formula, is that acceleration ***a*** by multiply a multiple of β^2 , but ain't the mass ***m*** the change.

The variable the order is that one-order or two-order, be decide the cause of this difference. According to this cause, between all the function of the one-order the variable, all is direct proportion or inverse proportion the relation. At this time computing, these variable the change is can transformed mutually, after transform the function the value immovability. For instance formula(2.3.1) and(2.3.2), and:

$$\beta(F \cdot t) = m \cdot \frac{ql}{q^2 (t/\beta)^2} \cdot t\beta = m \cdot \frac{ql}{q(t/\beta)} = m \cdot \beta \cdot \frac{ql}{qt} = m\beta u \tag{2.3.4}$$

The impulse of the force ***F***. Therefore the force ***F*** change a multiple of ***β***, the Inverse derivative that the variable ***t*** namely changes a multiple of **1/ *β*** , its impulse also changes a multiple of ***β*** . This time the Inverse derivative the Inverse differential coefficient namely velocity ***u*** , also are one-order function. Therefore operation in force inside, variable ***F***, ***m***, ***t*** and ***u***, is all can to conversion mutually. Only there is acceleration a for be second-order Inverse derivative the differential quotients is a quadratic function, therefore namely cannot with other variable immediacy for direct proportion or inverse proportion to conversion.

2.4 Definition to New Secondly Laws of Motion

So now can to new secondly laws of motion, make a summarize.

The new secondly laws of motion the expression is:

$$F = \lim_{\Delta l \to 0} m \cdot \frac{\Delta l}{\Delta^2 t^2} = m \cdot \frac{ql}{q^2 t^2} = ma^+ \tag{2.4.1}$$

That it is also the object a product that the mass and acceleration. But because among them of the acceleration is an Inverse derivative (the show is a^+), so the force ***F*** though with that the mass ***m*** is direct proportion, but the force ***F*** with the acceleration a^+ yet is relation of the direct proportion square. Both the relation is not simple that proportion same. Therefore when the equivalence the conversion, acceleration a^+ must each change a multiple of β^2 , just are equal with force ***F*** or the mass ***m*** change a multiple of β.

So the identity of new the second laws of motion is:

$$F = \beta m \cdot \beta^{-2} a^+ \tag{2.4.2}$$

Namely in that the mass and acceleration, each to change ***β*** times and β^2 of the reciprocal the times the hour, the strength of the force is not change.

This explain inside the second laws of motion of the classical mechanics, force ***F*** and mass ***m*** and acceleration ***a*** the idea of the direct proportion is wrong. This point can pass the accurate sensor measuring to confirm. (Attention: When β is equal to 1 that it be formula of Newton second law)

For example on a rotation rotor one object, its inertial centrifugal force(is may meterage) should is:

$$F = ma = m \cdot \frac{u^2}{R} \tag{2.4.3}$$

When the object rotation the linear velocity ***u*** change a multiple of β:

$$\beta F = m \cdot \frac{(\beta u)^2}{R} = m \cdot \frac{\beta^2 u^2}{R} = m\beta^2 a \tag{2.4.4}$$

Its the acceleration centripetal change a multiple of β^2, but its force ***F*** change a multiple of β. This point perforce are may to pass the pressure sensor be meterage of precision. Measuring result force ***F*** actually is to change a multiple of β or a multiple of β^2, then the decision is new the secondly law exactness, or classical mechanics the secondly law exactness.

Therefore new second law of motion to confirm, force is object the mass and acceleration to the product. But in it the mass ***m*** and the force ***F*** is direct proportion, then the acceleration ***a*** with the force ***F*** is the direct proportion square. Because this reason, the force of the same pressure strength, when the object the mass ***m*** differ, its acceleration ***a*** also differs. So its the mass ***m*** with the acceleration ***a*** the product the value also differs. The force of namely a scaling pressure strength, it there will be what much differs, be the mass ***m*** with the acceleration ***a*** the product the value the combination. But because of in force ***F***, the mass ***m*** together with acceleration ***a*** proportions be differs, so while computing multiple changed both, is cannot simpleness and directly to the conversion. In equation both the value, general also should alone show, but cannot takes in to mix up.

In addition, the Inverse derivative of the new the second laws of motion of calculates, calculating with the derivative of the second laws of motion of the classical mechanics, also having got secern evidently on the concept. For example the derivative of the second laws of motion of the classical mechanics be to try get instantaneous acting force[5,6], but the Inverse derivative of new second laws of motion then be to try get force as long as minimum displacement that intensity. Both of the rational concept is entirely different.

2.5 The Action Cycle Rate of the Unit Force

Because the equation of new second laws of motion, is to make the displacement ***l*** to tend zero to obtain the limit. So at this time the slope of the equation curve, will be determine by the time variable ***t***. Therefore at this time the computation, obviously be with the displacement ***l*** for again and again the unit that compute.

New the second laws of motion:

$$F = m \cdot \frac{ql}{q^2 t^2} = ma \tag{2.5.1}$$

When the force ***F*** hold the line, the mass ***m*** change a multiple of β :

$$F = \beta m \cdot \frac{ql}{q^2 \beta^2 t^2} = \beta m \cdot \frac{a}{\beta^2} \tag{2.5.2}$$

The time variable ***t*** also to change a multiple of β, moreover yet to that the square.

In Inverse derivative and second-order Inverse derivative:

$$u = \frac{ql}{qt} \quad \text{And} \quad a = \frac{ql}{q^2 t^2} \tag{2.5.3}$$

The Inverse differential ***ql*** is unchanged, can see as constant, can see as an unit of computation also, therefore it call that the Cycle. But Inverse differential ***qt*** be can change the variable, its change decide Inverse differential quotients and second-order Inverse differential quotients the change Rate, therefore it call that the Rate. Inverse derivative and second-order Inverse derivative is the Cycle and the Rate the unites, the Cycle Rate namely representation the Inverse derivative ***u*** and the second-order Inverse derivative ***a*** that the value or its change.

From formula(2.5.2) it is obvious that, when the force ***F*** hold the line, that the mass ***m*** change a multiple of β, the second-order Inverse derivative that the Rate also change a multiple of β^2. The explain when the force ***F*** is same, differ the mass ***m*** opposite the one-order Inverse derivative that the Rate ***qt***, also differ. In reality the circumstance here, the mass ***m*** is geometric proportion with the Rate ***qt*** of the one-order Inverse derivative.

So, in the Cycle of Inverse differential ***ql*** of certain unit, pass the change of the Inverse differential ***qt*** the Rate, cause the change of the value of the Inverse differential quotients. Such circumstance is very important, in hereinafter of new the laws of motion of third the deduce, will be directly applied.

2.6 The Character of the Unit Acting Force

According to the new secondly laws of motion, make sure the force of the strength, act the same space, versus differ the mass the object, produce the equivalence impulse, namely the coequality the size the momentum. For example:

$$J = F \cdot t_j = \left(\beta m \cdot \frac{ql}{\beta^2 q^2 t^2} \right) \cdot \beta qt = \beta m \cdot \frac{ql}{\beta qt} = m \cdot \frac{ql}{qt} \tag{2.6.1}$$

In formula as the mass ***m*** change a multiple of β, Inverse differential ***qt*** (namely Rate) also geometric proportion change a multiple of β. The impulse of the force is an equal to, will the Inverse differential ***qt*** the second-order reduction be to the one-order. For this reason equation finally of result, is similar the mass ***m*** and the Rate ***qt*** did not take place change same. Explain same the force, act the same space, to the object that differ the mass, engender the same impulse.

In addition, when the strength of the force is certain, its action distance and the impulse of its creation be direct proportion. For example:

$$J\beta = \beta F \cdot t_j = \left(m \cdot \frac{\beta ql}{q^2 t^2} \right) \cdot qt = m \cdot \frac{\beta ql}{qt} \tag{2.6.2}$$

In formula the impulse changes the multiple β, namely the geometric proportion changes multiple of the Inverse differential ***ql***. Such principle also hold true in macroscopic computation, for example:

$$J\beta = \beta F \cdot t_j = m \cdot \frac{\beta \cdot l}{t^2} \cdot t = m \frac{\beta l}{t} \tag{2.6.3}$$

A lot of physical quantity in the macroscopic the things, all in adapt to typical Inverse derivative computation. For example, make the helical spring release the force of certain length; powder at deflagrate hour in the scoop tube of the force; in field day the stipulate distance go to running ……

Therefore, Inverse derivative computation and new secondly the laws of motion, versus force and the motion of the object, have the extensive meaning in widespread sum, and produce the very freak influence in important sum.

2.7 The New Secondly the Laws of Motion the Equation of Motivity

Say such as the preceding, when the strength of the force is certain, its action distance with the impulse of its creation be direct proportion. Therefore can deem at this time been the force the size to take place the change. Therefore, new have the dynamic action the attribute of the force, the expression of the force been engender namely:

$$F_q = m \cdot \frac{Dql \cdot D}{q^2t^2 \cdot D^2} \tag{2.7.1}$$

This fact is from hereinafter method conversion to obtain:

$$F_q = m \cdot \frac{ql}{q^2t^2} \cdot \frac{D^2}{D^2} \tag{2.7.2}$$

Obviously this is to a kind of equivalence conversion of the new second laws of motion formula. It is equal to the pressure of the force although did not change, but the action distance of the force and act the time all changes a multiple of D .

Before such the changes, the impulse of the force is:

$$J = F \cdot qt = m \cdot \frac{ql}{q^2t^2} \cdot qt = m \cdot \frac{ql}{qt} \tag{2.7.3}$$

But after changing the impulse of the force is:

$$J_q = F_q \cdot qtD = m \cdot \frac{Dql \cdot D}{q^2t^2 \cdot D^2} \cdot qtD = m \cdot \frac{Dql \cdot D}{qt \cdot D} = m \cdot \frac{Dql}{qt} \tag{2.7.4}$$

The impulse enlargement a multiple of D .

Therefore keep the pressure of the force is constant, but changes the action distance of the force, namely can changes the size of action of the force.

In above of changes, the action distance of force and the act time, with equally of the proportion changes. The realization to is shown as formula (2.7.1) namely, the equivalence conversion of the new second laws of motion formula. The pressure of its force is unchanged, but the force an action distance and time and impulse, all took place change a multiple of D .

The formula(2.7.1) is called the equation of motivity of the new the secondly laws of motion. It expresses the unchanged circumstance in pressure in the force of keeping, via action distance of the force of changed, can actualize to changed of the strength of action of the force. Thereupon, for the sake of the intensity of the action of the change force, by to adoptive the method, is not only the change the force the intensity of pressure this a kind.

So, new notion of concerning force, namely engender come out. So: 1. Dynamic state action force, be the force action to the object do the object the capability of the occurrence motion that the attribute; 2. The Static-force the pressure, in the quiescent state the force by to have the pressure, it can pass the sensor prosecution measuring.

The Motivity equation (2.7.1) of the new the secondly laws of motion, be to dynamic state action force and Static-force the pressure the precise describing. When among them of coefficient D greater than 1, its Dynamic state action force enlargement; When coefficient D adoption tendency to zero the infinitesimal value, it is without the dynamic state to act the force, but has the Static-force the pressure, the static state pressure the force.

3 New Third the Laws of Motion

The laws of motion of third[5,6], is show the object an interactional the laws.

Hypothesis have two objects, an object the mass is ***m***, another an object the mass is ***m*/*β*** , so action in the force of the object of first is:

$$F_1 = m \cdot \frac{ql}{q^2t^2} = ma \tag{3.0.1}$$

But action on secondly the object the force is:

$$F_2 = \frac{m}{\beta} \cdot \frac{ql}{q^2 (t/\beta)(t/\beta)} = \frac{m}{\beta} \cdot \frac{\beta^2 ql}{q^2t^2} = m \cdot \frac{\beta ql}{q^2t^2} = m \cdot \beta a \tag{3.0.2}$$

Two kind circumstance the forces the pressure, the facto is same. But along with two objects the mass be differ, opposite in two the Inverse differential ***qt*** of the time of objects also differed. The Inverse differential ***qt*** and object mass ***m*** be with geometric proportion change. But, at two objects interactional hour, without a doubt the force to two objects action that the time, should be same. So at this time:

$$F_2 = \frac{m}{\beta} \cdot \frac{ql}{q^2 (t/\beta)(t/\beta)} = \frac{m}{\beta} \cdot \frac{\beta ql}{q^2 t (t/\beta)} = \frac{m}{\beta} \cdot \frac{\beta (\beta ql)}{q^2t^2} = \frac{m}{\beta} \cdot \beta^2 a \tag{3.0.3}$$

Can discover after tertius equal sign, the object true the mass is ***m*/*β***, action the force the displacement is ***βql***, but the true action time is ***qt*** , and formula(3.0.1) the force F_1 be same, but acceleration is $\beta^2 a$.

At this time obviously, the force F_1 and the force F_2 pressure (Static-force pressure) although is same, but the move distance of the force F_2 is a multiple of ***β*** that the force F_1 move distance. When the strength of the force is certain, its action distance and the impulse of its creation be direct proportion. This is the equation of motivity of the secondly law, the coefficient ***β*** in the formula namely is a coefficient ***D*** in the Motivity equation.

Express the Cycle ***ql*** and the Rate ***qt*** of the Inverse derivative the definition, at that oppositely the object the force same but the mass differ the circumstance, have the change. But the Rate ***qt*** differ of that differ the mass the object, under the time same the circumstance of the object interaction, make the fact in small object in ***qt*** in Rate is to owned more Cycles ***ql*** . But if define the Cycle ***ql*** of the unit, represent the size of the unit and the dynamic action force of the strength. So at two objects act mutually, the fact owns the object of more Cycles ***ql***, is tantamount to suffer the action of the larger force certainly.

Must advertent is in above process, the pressure of the force of the formula (3.0.1) and (3.0.2), in reality is same. This is a kind the pressure of the Static-force, use the pressure sensor can proceed the measurement. Acting force is contrary to equal direction in size in reacting force, this level in statics should still be right. But mutual action to at two objects hour, two the object the pressure of the forces is also a same.

According to above of analysis, can to bring forward the expression in new the third laws of motion:

$$m_0 \cdot \frac{ql}{q^2t^2} = m_0 a_0^+ = F_1 \Big|_{\substack{m=m_0 \\ a^+=a_0^+}} \Leftrightarrow F_2 \Big|_{\substack{m=m_0/\beta \\ a^+=\beta^2 a_0^+}} = \frac{m_0}{\beta} \cdot \frac{\beta^2 ql}{q^2t^2} = \frac{m_0}{\beta} \cdot \beta^2 a_0^+ = \beta F_1 \tag{3.0.4}$$

or

$$F_1 = ma^+ \Leftrightarrow F_2 = \beta m \cdot \beta^{-2} a^+ = \beta^{-1} F_1 \tag{3.0.5}$$

Explain two object to reciprocity, the two object by get that the force, is all under most circumstances that differ. Above the principle, can also pass the another route to testify[3]. The earliest proof is at still adopt the Newton second law, and did not adopt the circumstance of the Inverse derivative been to achieve. The result that educe is complete almost with this same. (Attention: if β equal to 1 it be with Newton law same)

Therefore while two objects acts mutually, action in two objects the static pressure of the force are same. But when two the mass of object differs, action in two the dynamic action force of objects, is different however.

So, object and object mutual action the equation of motivity is:

$$F_1 = m \cdot \frac{ql}{q^2t^2} = ql \cdot m \cdot \frac{1}{q^2t^2} \tag{3.0.6}$$

And

$$F_2 = \frac{m}{\beta} \cdot \frac{(\beta ql)\beta}{q^2t^2} = \beta ql \cdot \frac{m}{\beta} \cdot \frac{\beta}{q^2t^2} \tag{3.0.7}$$

Explain the mass in small to the object a multiple of β, suffer the dynamic action force of the big a multiple of β. And the dynamic action force of the big a multiple of β, will still cause the impulse of the big a multiple of β.

This is the new the laws of motion of third. Namely two objects act mutually, the small object in mass is acted by big dynamic action force, the big object in mass is acted by small dynamic action force. Act namely in two the size of the dynamic action force of objects, with this two the size of the mass of objects inverse proportion.

The new the laws of motion of third also the enunciation, the object the mass differ action mutually, two the impulse the object engender differ. Therefore after action, two the sum of the momentum of the objects is not zero. Shall take place the momentum changes namely. Therefore in the laws of motion of the classical mechanics the law of conservation of momentum, also is wrong obviously. According to the new the laws of motion of third, the momentum is not conservation.

Under the great majority circumstance, between the object action the acting force is not equal. This a kind phenomenon, will be widespread consist in, every kind of matter motion of the physical world in it.

For example celestial body in the universe, the mutual attraction force is different. The planet is big to the attraction force of the satellite, but the satellite inverted to the planet the attraction force is small. This a kind principle to computation have the plenty orb complex the action the universe galaxy, may have distinct and important influence.

New laws of motion; new mechanics and cognize of the physics. Inevitable to the progress of human sciences, bring the bigness effect.

4 The integral algorithm of the Inverse derivative

Integral computation (call inverse integral) toward Inverse derivative, will just the integration formula that the differential symbol, change to the Inverse differential symbol is then. The principle of its computation, or with the integral of the common derivative, did not secern.

So compute the force a work by it make:

$$W_1 = \int F_1 qx = \int \left(m \cdot \frac{ql}{q^2t^2} \right) qx = \frac{1}{2}mu^2 - \frac{1}{2}mu_0^2 \tag{4.0.1}$$

This is same with the computation of the classical mechanics inside work. The classical mechanics the equation of rectilinear motion, is also same that for use of in Inverse derivative computation.

Fore allusion, make sure the force of the strength, act the same distance, to the object that differ the mass, produce the equivalence impulse. This a kind circumstance make person interrogative, whether to represent the energy of the kinetic energy of the object or not, namely is the momentum of the object fact. Because with same dynamic action force, act in the object that mass differ, engender the same momentum. For example use same helical spring, push the object of differ the mass, the momentum of an object for producing is same[1,2]. Therefore, the same elasticity potential energy release, producing the momentum of the same object, this is not to mean the momentum is apparently that kinetic energy?

The actual isn't, for example the mass of the object if change a multiple of $\boldsymbol{m/\beta}$, so:

$$W_2 = \int F_2 qx = \int\left(\frac{m}{\beta}\cdot\frac{ql}{q^2\left(t/\beta\right)\left(t/\beta\right)}\right)qx = \frac{m}{\beta}\cdot\beta^2\cdot\left(\frac{1}{2}u^2 - \frac{1}{2}u_0^2\right) \tag{4.0.2}$$

The force action time that is at this time, than preceding a kind of circumstance the force the time of action, also minish a multiple of $\boldsymbol{1/\beta}$. Its the time of action is short, mean the motility of the object more strong, therefore express the energy of the motion more high of the object. Namely exhibition the product more big the object mass with velocity the square. Therefore although the Static-force pressure of two kinds of circumstances is same, in reality these two kinds of circumstances however is not same.

But this time, bring the another question again. Namely above the spring the release the equivalence elasticity potential energy, but however engendered the object different the kinetic energy of motion? This does anti disobey with law of conservation of energy mutually? New physics phenomenon, versus between differ attribute matter energy, whether can keep to conservation of energy, bring forward the query.

Thereby computation of the inverse integral, for the force make the work and kinetic energy, is with classical mechanics to same. The force for make the work, equal the product to the force and its action distance. The kinetic energy of the object, that is also the product to the object mass and its velocity square.

However the formula(4.0.1) and(4.0.2) is also the enunciation, when the pressure of the force same, but among them of the mass of the object differ, act the same distance, its kinetic energy is different. This is different from classical mechanics again, in classical mechanics the force of the same size, act the same distance, its kinetic energy is same.

Concerning the computation of the impulse of the object:

$$J_1 = \int F_1 qt = \int\left(m\cdot\frac{ql}{q^2t^2}\right)qt = mu \tag{4.0.3}$$

If the mass of the object change a multiple of $\boldsymbol{m/\beta}$:

$$J_2 = \int F_2 qt = \int\left(\frac{m}{\beta}\cdot\frac{ql}{q^2\left(t/\beta\right)\left(t/\beta\right)}\right)qt\beta = \frac{m}{\beta}\cdot\beta u \tag{4.0.4}$$

Explain the force of the certain strength, act the same distance, to the object that differ the mass, produce the equivalence impulse. But at this time of circumstance, different from the circumstance of the classical mechanics. In classical mechanics, the force of the same size, act in the different object, act the same time, its impulse is same. But in above equation(4.0.3) and(4.0.4), the force of the same size, act in the different object, its the impulse of action although same, but the time of action is different.

So the inverse integral compute the force the impulse, the product that is also the force and the force the time of action.

5 Summing-up

The new secondly and third laws of motion enunciative, the force be that the object mass and acceleration the simple product not only. In reality with mass and the product of the acceleration, affirm that the size of the force is uncertain accurate. The size of the force is may meterage, moreover its size with the mass and acceleration, have got the affirmative relation. But the size of the force, with the object the mass and acceleration, had got different the ratio. Therefore cannot to conversion in simple and directly both.

Newton's the laws of motion, for progress of the human science, exertion the enormous action. But the science wants develop, must renew the knowledge endlessly, and corrective mistake. This text the new secondly and third the laws of motion, be put forward the new perception with the principle of the physics and mechanics to motion of the matter, is to the develop of the Newtonian mechanics. Therefore to say is new Newtonian mechanics.

Acknowledgements

The authors to thank the Editorial Office. The authors to thank references author.

The authors to thank his teachers, is for his technological campaign by gave the sustain:

Professor Shixu Guan, Chief editor Xinmin Zhu, Principal Lanxu Xu.

The authors thank do ever assisted his the university:

Department head Shuquan Wang, Department head Xinde Jiang, Associate Professor Risheng Piao. And many teachers.

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(2015.5.10—2015.5.20)

摘要: 牛顿第三定律已经被证明是错的，有实验的视频的佐证，也有严谨的有力的论文的证明. 以此为依据进一步得到的，就是对牛顿第二定律的新的证明. 新的牛顿三定律，将成为更准确，更有效的力学原则，指导新的力学体系的推导和建立.

关键字: 牛顿力学；力；第一定律；第二定律；第三定律；偏导数；逆导数；反导数；逆微分；反微分；周；率；动力方程

PACS: 45.20.Dd, 45.40.àf, 45.50.àj, 45.50.Dd