Freewheeling Logic Extension of Connotation Hypostatization of Homogenous Cosmos Originated from Unique Genesis — Positive & Negative Transmutation Dynamics

Yang Guosheng

Physics Department, Shenzhen University, Shenzhen City, Guangdong Province, China

Email address
marktin-yang@163.com

Citation

Abstract
As confirmation of PNT correlation between matter and spacetime, we now introduce “Instinctive PNT equilibrium postulate” to regularize inherent PNT correlation of matter system and subsequently come to analyze how PNT correlation of matter system radically conditions existence & motion of matter in spacetime and mathematically formulate the proper states in matter inertial conservation equations and PNT dynamics.

1. Introduction
The kernel content of this part is just dynamic regularity of existence & motion of matter in spacetime. Under primary clarification and affirmation of homologic essentiality of spacetime and matter especially the lineal homologic filiation between spacetime and matter, following the logic extension of illustration below,
Homogenous Cosmos Originated from Unique Genesis emphatically focus the lineal homologic filiation between spacetime and matter—-PNT action and instinctive PNT equilibrium to analyze and formulate existence & motion of matter in spacetime so as to go on outspreading logic extension of “Homogenous cosmos originated from unique genesis postulate” as below:

Considered by Homogenous Cosmos Originated from Unique Genesis, existence & motion is but vivid dynamic embodiment of PNT action of matter system in spacetime. For analytic expediency, Homogenous Cosmos Originated from Unique Genesis classifies PNT performance into two typical cases of \( d(M \rightarrow m) = d(M \leftarrow m) \) and \( d(M \rightarrow m) \neq d(M \leftarrow m) \) and analyzes & formulates existence & motion of matter in spacetime accordingly. Resultantly, in accordance with PNT performance case of \( d(M \rightarrow m) = d(M \leftarrow m) \), “matter inertial conservation equations” are formulated therein; in accordance with PNT performance case of \( d(M \rightarrow m) \neq d(M \leftarrow m) \), PNT dynamics is formulated thereby. Subsequently, it introduced “space distance and space radiation cornu” as successive supplementation of space field hypothesis at the volley.

2. Existence & Motion of Matter in Spacetime

In accordance with logic extension 1 of Homogenous cosmos originated from unique genesis postulate, space field hypothesis hypostatizes both hylic and dynamic essentiality of material spacetime; and in accordance with logic extension 2 of Homogenous cosmos originated from unique genesis postulate, matter homologic generation hypothesis hypostatizes the lineal homologic filiation between spacetime and matter by excluding the alternative possibility of matter father and spacetime son, so that matter generation and consequent PNT action between spacetime and matter are self-evident. PNT action is inherent attribute of matter in spacetime which radically predestines existence & motion of matter in spacetime. On the groundwork of hypostatization of the two logic extensions of Homogenous cosmos originated from unique genesis postulate, we are now ready to quantify PNT action between spacetime and matter so as to approach formulation of existence & motion of matter in spacetime.

Towards the very pursuit, we call the combo which contains behavioral main bodies and the lineal homologic filiation between behavioral main bodies of material spacetime and positive matter “matter system”, we call the compositive spacetime of matter system “matter field” and denote the mass of it “M”, we call the compositive matter of matter system “positive matter” and denote the mass of it “m”.

Matter homologic generation hypothesis affirmed that matter is lineal homologic outgrowth of sequential homologic multiplication next to material spacetime. This of course implies elementary components of material spacetime can transit and transmute into elementary components of positive matter, we call transition and transmutation elementary components of material spacetime towards elementary components of positive matter “negative towards positive transmutation” and symbolize it as “M→m”. However, according to the factuality that spacetime and matter coexist in cosmos in relatively steady status, we can affirm since elementary components of material spacetime can transit and transmute into elementary components of positive matter, then at the same time, the elementary components of positive matter must be inversely able to transit and transmute into elementary components of material spacetime as well, and the both bidirectional transition and transmutation must be coordinately coexistent, otherwise, cosmic evolution will inevitably trend to extremity that there would be less and less material spacetime day by day, and on the other hand, there would be proportionally more and more positive matter in cosmos year by year, till at last, there is none of material spacetime but positive matter alone. We call transition and transmutation elementary components of positive matter towards elementary components of material spacetime “positive towards negative transmutation” and symbolize it as “M←m”. And we call the coordinate coexistence of “negative towards positive transmutation” and “positive towards negative transmutation” of matter system “positive & negative transmutation” which can be abbreviated as “PNT”,
and we symbolize it as “M→m”.

Of course, no matter it is negative towards positive transmutation or positive towards negative transmutation or positive & negative transmutation, since they are dynamic processes, there must be dynamic intensity or speed disparity of their dynamic status. In order to formulate the dynamic intensity or speed of negative towards positive transmutation, positive towards negative transmutation and positive & negative transmutation, we introduce notion of “negative towards positive transmutation rate” to denote the rate of negative towards positive transmutation and symbolize it as “d(M→m)”; we introduce notion of “positive towards negative transmutation rate” to denote the rate of positive towards negative transmutation and symbolize it as “d(M→m)”; we introduce notion of “positive towards negative transmutation rate” to denote the rate of positive towards negative transmutation and symbolize it as “d(M→m)”. Apparently, as “positive & negative transmutation (M→m)" just consists of “negative towards positive transmutation (M→m)" and “positive towards negative transmutation (M→m)”, proportionally, “positive & negative transmutation rate d(M→m)” of course consists of “negative towards positive transmutation rate d(M→m)” and “positive towards negative transmutation rate d(M→m)" too, which implies d(M→m), d(M→m) and d(M→m) satisfy equation as below:

\[ d(M\rightarrow m) = d(M\rightarrow m) + d(M\rightarrow m) \] (II-i-1)

At the same time, as presence of time dynamic essentiality and PNT action of matter system, Homogenous Cosmos Originated from Unique Genesis primarily affirms that any object in cosmos innately has absolute spacetime momentum \( P_A \) as below:

\[ P_A = mV_A = d(M\rightarrow m)Y \] (II-i-2)

In the equation, \( m \) denotes the mass of positive matter of matter system, \( V_A \) denotes the absolute motion speed of matter system in spacetime, \( d(M\rightarrow m) \) is just the positive towards negative transmutation rate and \( Y \) is just the time dynamic speed of matter system.

The formulation of absolute spacetime momentum of matter system affirms the active role of time in existence & motion of matter in spacetime, ——the dynamic essentiality (time dynamic speed \( Y \)) is just the dynamic origin of existence & motion of matter, and the “d(M→m)” in equation of \( P_A = mV_A = d(M\rightarrow m)Y \) is just the tangible witness that dynamic essentiality is kinetic origin of existence & motion of matter, which implicates matter system revivifies some of its mass which have originally been congealed from material spacetime and encashes the dynamic endosomie of spacetime by “positive towards negative transmutation (M→m)” and embodies the revivified dynamic endosomie of spacetime on matter system as spacetime momentum (please refer to the section of “PNT action and PNT reaction”——“revivification reaction of space field potential vallum”). Of course, notion introduction of “positive towards negative transmutation rate d(M→m)” even makes the dynamic revivification of positive towards negative transmutation quantified in scale of time.

The equation \( mV_A = d(M\rightarrow m)Y \) implicates two conclusions:

The first: motion is inherent attribute of matter in spacetime.

The reason is as below:

\[ \begin{align*}
V_A & = d(M\rightarrow m)Y \\
\frac{d(M\rightarrow m)}{m} & \leq 1 \quad V_A = d(M\rightarrow m)Y
\end{align*} \]

So that \( d(M\rightarrow m)*Y / m > 0 \Leftrightarrow V_A > 0 \)

The absolute moving speed of matter system is defined referring to presumable absolute stationary reference. As motion is inherent attribute of matter in spacetime, any object in cosmos is innately moving; it’s completely impossible for us to find an absolute stationary reference in cosmos, such ideal absolute stationary reference can only be presumable in rational notion but can never be found.

The second, time dynamic speed is just the utmost speed of matter motion in spacetime.

The reason is as below:

Because \[ \begin{align*}
mV_A & = d(M\rightarrow m)Y \\
\frac{d(M\rightarrow m)}{m} & \leq 1 \quad V_A = d(M\rightarrow m)Y
\end{align*} \]

(\( d(M\rightarrow m)/m \leq 1 \)) just means \( d(M\rightarrow m) \leq m \), that’s to say, in any short time interval, the magnitude of positive towards negative transmutation rate can never be even bigger than the total mass margin of positive matter of matter system in spacetime)

\[ \frac{V_A}{Y} \leq 1 \Leftrightarrow V_A \leq Y \]

In time current, existence & motion of matter in spacetime is always in so monotony regularity.

If the \( m \) in equation denotes the total mass of positive matter in cosmos, proportionally, the “\( V= d(M\rightarrow m)Y/m \)” just denotes the integrative motion speed of positive matter in cosmos; ……; if the \( m \) in equation denotes the mass of the Milk Way, proportionally, the “\( V= d(M\rightarrow m)Y/m \)” denotes the integrative motion speed of the Milk Way; ……; if the \( m \) in equation denotes the mass of earth, proportionally, the “\( V= d(M\rightarrow m)Y/m \)” denotes the integrative motion speed of your body; ……; if the \( m \) in equation denotes the mass of the Oxygen atom, proportionally, the “\( V= d(M\rightarrow m)Y/m \)” denotes the motion speed of oxygen atom in spacetime; if the \( m \) in equation denotes the mass of Oxygen atom, proportionally, the “\( V= d(M\rightarrow m)Y/m \)” denotes the motion speed of Hydrogen atom in spacetime; ……; if the \( m \) in equation denotes the mass of Hydrogen atom, proportionally, the “\( V= d(M\rightarrow m)Y/m \)” denotes the motion speed of Hydrogen atom in spacetime; ……; if the \( m \) in equation denotes the mass of neutron (/proton/electron), proportionally, the “\( V= d(M\rightarrow m)Y/m \)” denotes the motion speed of neutron (/proton/electron) in spacetime; ……; if the
m in equation denotes the mass of Quark, proportionally, the “V” = \( \frac{d(M\rightarrow m)}{m} \) Y/m denotes the motion speed of Quark in spacetime; if the m in equation denotes the mass of photon, proportionally, the “V” = \( \frac{d(M\rightarrow m)}{m} \) Y/m denotes the motion speed of photon in spacetime—light speed; ……

In accordance with the definition equation of absolute spacetime momentum \( P_A = mV_A = d(M\rightarrow m)Y \), it implies motion is inherently related to mass object, negative transmutation rate \( d(M\rightarrow m) \) and time dynamic Y. In terms of macrocosmic object in spacetime, as the magnitude of both \( d(M\rightarrow m) \) and \( d(M\rightarrow m) \) of PNT operation of macroscopic object is relatively substantial and with substantial margin for covariant PNT equilibrium, so the both of both \( d(M\rightarrow m) \) and \( d(M\rightarrow m) \) of PNT operation of macroscopic object won’t easily expose margin, as a result, the existence & motion of macroscopic object in spacetime is usually steady, there is few possibility for us to perceive the connatural mass variation of macroscopic object during the course of matter motion.

Whereas, in terms of microcosmic object in spacetime, as the magnitude of both \( d(M\rightarrow m) \) and \( d(M\rightarrow m) \) of PNT operation of microcosmic object is relatively tiny and with poor margin for covariant PNT equilibrium, so the both \( d(M\rightarrow m) \) and \( d(M\rightarrow m) \) of PNT operation of microscopic object are not easy to gloss over their margin. As a result, in terms of the mass residue of microcosmic object, the mass residue of microcosmic object is not steady at all, but big a little now and small a little then in indefinite existent appearance, once big, it may be itself in flash; once small, it’s non-self in flash, so we find the life time of some particles is very short. In terms of existence & motion of microcosmic object, the more microcosmic object it is, the more remarkable waveform motion appears, ——matter wave, light wave, cosmic radiations.

Just because of such existent authenticity, as physical scientist with remarkable contribution in Quantum Theory, Feynmann had ever commented like this: We have to emphasize the significant discrepancy between Newtonian mechanics and Quantum mechanics, we are always talking about approach probability of electrons under certain conditions, even with aid of the best experimental support, we are still difficult to predict the precise occurrence but approach probability of electrons. If this is true, it indicates physics has given up its original ambition to predict occurrence in the nature, and now, we think it’s impossible to predict occurrence in the nature but to predict approach probability. Although, this apparently falls short of our early intention to know the nature, which even seems setback of us, nobody can change the situation …… we can only talk about approach probability at present; even though it seems present, there are substantial possibilities for situation to be like this for ever, for the nature may be just like this most probably. (Extracted from page 328 of Atom Physics ——Yang-hujia)

And almost just the same time I was born, Dirac commented like this: In my opinion, it’s apparent we did not approach any fundamental of Quantum Mechanics yet, and the laws we now introduced in Quantum Mechanics apparently need further revision; only thus, there are possibilities for us to approach theory as Relativity kind in this field. Most probably, from current Quantum Mechanics to future Quantum mechanics like Relativity kind, the revision may be as remarkable as revision from Bohr’s orbit theory to current Quantum Theory. Once we’ve done so remarkable revision to it, of course, the idea we introduce statistical account to give demonstrative explanation to theory may be changed drastically. (Extracted from page 328 of Atom Physics ——Yang-hujia)

In my opinion, Feynmann was but one of a group of laborious ants who were ready to push forward the grand science train towards authenticity of existence & motion of particles, just because they had tried their best thereby and gotten touch with the solid object, they perceived some substantiality of the hypostatic existence & motion of particles indeed. And since history proceeded in this way, Feynmann of course commented accordingly. Whereas, Dirac’s words but betrayed the stimulative confidence and unconfidence of Quantum Theory of their age.

Considered by Homogenous Cosmos Originated from Unique Genesis, although the existence & motion of particles subjectively makes the distinctive physical esse of themselves flashing in indefinite state, it has inherently determined their distinctive existence and motion in spacetime must be subject to \( P_A = mV_A = d(M\rightarrow m)Y \), their probable existence flashing in indefinite state is but because the magnitudes of their m and d(M→m) are relatively too close, the variation of d(M→m) impact the magnitude directly and remarkably, for you see, the quantitative covariant relationship between m and d(M→m) is substantively similar as oil in tank and oil burning off from oil tank, what’s more, the magnitude d(M→m) and d(M→m) of PNT operation of particles are usually not even, and on the other hand, the magnitude of m of particles is relatively small, particles can sensitively embody the spacetime dynamic domino offect of “V” = \( \frac{d(M\rightarrow m)}{m} \) Y/m², particles are of course inherent flash chameleon.

But it does not mean there is no definite regularity of existence & motion of particles, since the PNT action of particles directly relates to their genic configuration and the physical conditions of the space field around for them to perform PNT, it of course implies the regularity must be underlying herein. The issue but depends on clarification of the covariant linkage mechanism between particles and space field including connatural genic configuration of particles, PNT operational linkage character of particles, genic configuration of space field and PNT operational linkage character of space field when it is ready to involve PNT operation with particles, once all of these materialized on parameters of d(M→m), d(M→m), m, Y etc, all regularity embodied by the light of nature. Leastways, we can draw our conclusion that the relatively inherent probable existence & motion of particles in spacetime and the related ingredients of connatural genic configuration of particles, PNT operational linkage character of particles, genic configuration of space field and PNT operational linkage character of space field must satisfy general determinism.
Generally, we study existence & motion of matter in spacetime is to study the variation of mass of positive matter “m”, mass of matter field “M”, velocity of matter system “V”, geometrical length of object “L”, field strength of matter field “α”, time dynamic speed “Y”, and all the related parameters as acceleration “a”, force “F”, displacement “S”, velocity change “ΔV”, momentum change “ΔP”, energy change “AE” etc.

However, what’s the radical causative variation of matter system which radically determines all state parameters of matter system varying accordingly? And what’s the general dynamic orientation principle of the radical causative variation and how does the causative variation occur and do its job?

The positive & negative transmutation (M→m) of matter system is the most essential correlation between material spacetime and positive matter, even upon intuitionistic definition of positive & negative transmutation (M→m), it’s easy for us to comprehend that PNT performance of matter system directly determines the magnitude of both matter field mass “M” and positive matter mass “m”. However, the variation of matter field mass “M” and positive matter mass “m” also relates all the other parameters of matter system for their inherent homologic pertinence, for instance, the variation of matter field mass “M” will directly impact the matter field strength, time dynamic speed in the field, magnitude of space radiation cornu of the very field even geometrical profile of objects in the matter field (please refer to the next section of space distance and space radiation cornu etc); the variation of positive matter mass “m” will directly impact the volume even inner structure of positive matter etc. What’s more, the variation of positive & negative transmutation (M→m) directly implicates the variation of d(M→m) and d(M→m), this of course means variation of absolute spacetime momentum \( mV = d(M→m) \times Y \), because it is impossible for operational variation of positive & negative transmutation to avoid variation of positive towards negative transmutation rate \( d(M→m) \) and time dynamic speed \( Y \), this of course means the presence of force, acceleration, momentum change and kinetic energy change of matter system.

This implies PNT action radically predetermines the existence & motion of matter in spacetime; it can be considered that existence & motion of matter in spacetime are but existent hypostatization of PNT action of matter system. Existence & motion of matter in spacetime radically depends on PNT performance of matter system, in another word, variation of existence & motion of matter system in spacetime are but consequence of intrinsic covariant readjustment of PNT operation.

In terms of PNT operation of matter system under certain conditions, if \( d(M→m) > d(M→m) \), then the mass of positive matter will consequently increase, proportionally, the mass of matter field will decrease, and all the state parameters of matter system related to the mass of positive matter and mass of matter field will vary accordingly, such as moving speed of positive matter, geometrical profile of positive matter, time rate or time dynamic speed of matter system etc. If \( d(M→m) < d(M→m) \), then the mass of positive matter will consequently decrease, proportionally, the mass of matter field will increase, and all the state parameters of matter system related to the mass of positive matter and mass of matter field will vary accordingly; if \( d(M→m) = d(M→m) \), both mass of positive matter and mass of matter field will keep constant, and all other state parameters of matter system related to mass of positive matter and mass of matter field will keep constant accordingly too.

Whereas, the variation of PNT action of matter system is eventually actualized by covariant coordination of negative towards positive transmutation rate \( d(M→m) \) and positive towards negative transmutation rate \( d(M→m) \). No matter what’s the idiographic manner for negative towards positive transmutation rate \( d(M→m) \) and positive towards negative transmutation rate \( d(M→m) \) to coordinate, it won’t impact we classify the covariant coordination between negative towards positive transmutation rate \( d(M→m) \) and positive towards negative transmutation rate \( d(M→m) \) into “constant covariant coordination” and “inconstant covariant coordination” as below:

The first, \( d(M→m) = d(M→m) \), and \( d(M→m) \) and \( d(M→m) \) keep constant

This is just the so-called constant covariant coordination between negative towards positive transmutation rate \( d(M→m) \) and positive towards negative transmutation rate \( d(M→m) \). Apparently, as \( d(M→m) = d(M→m) \), mass of matter field “M” and mass of positive matter “m” keep constant, matter field strength of any point in matter field keeps constant, time dynamic speed of any point in matter field keeps constant, geometrical profile or length of object in the matter field keeps constant, and according to equation \( V = d(M→m) \times Y/m \), as all \( d(M→m), Y, m \) keep constant, matter moving velocity \( V \) keeps constant, no matter refer to absolutely stationary reference or any discretionary inertial reference, matter system keeps in inertial existence, ——bearing force 0, acceleration 0, neither momentum change nor kinetic energy change.

(Note: as law & causation and innate couple covariant variables coming into being during the course of matter generation in spacetime, in time current, it’s impossible for \( d(M→m) \) and \( d(M→m) \) to vary synchronously in situation of \( d(M→m) = d(M→m) \).)

The second, \( d(M→m) ≠ d(M→m) \)

This is just the so-called inconstant covariant coordination between negative towards positive transmutation rate \( d(M→m) \) and positive towards negative transmutation rate \( d(M→m) \). In order to study and formulate existence & motion of matter in spacetime due to inconstant covariant coordination between negative towards positive transmutation rate \( d(M→m) \) and positive towards negative transmutation rate \( d(M→m) \), it’s apparently necessary for us to clarify the covariant coordination dynamic orientation between \( d(M→m) \) and \( d(M→m) \).

It’s easy for us to comprehend that as innate couple coexisting inverse variables of “positive & negative transmutation” of matter system, the negative towards positive transmutation rate \( d(M→m) \) and positive towards negative transmutation rate \( d(M→m) \) can never be mutually disrelated, there must be some
certain covariant correlation between them, — the variation of negative towards positive transmutation rate must be causative condition to stimulate reaction variation of positive towards negative transmutation rate; the variation of positive towards negative transmutation rate must be causative condition to stimulate reaction variation of negative towards positive transmutation rate as well, so that the both form innate couple covariant variables. The issue is but what the dynamic orientation principle of the innate couple covariant variables? In another word, why negative towards positive transmutation rate d(M→m) and positive towards negative transmutation rate d(M←m) must coordinate spontaneously? And what’s the state pursuit of their spontaneous covariant coordination?

In accordance with various evidences that comprehensive existence in cosmos are always ready to orient balance and stabilization, it seems wise for us to affirm the innate couple covariant variables are always ready to orient positive & negative transmutation balance (PNT balance). So Homogenous Cosmos Originated from Unique Genesis introduces another fundamental postulate ——Instinctive PNT equilibrium postulate herein.

Equilibrium (just instinct to keep d(M→m)=d(M←m)), once matter system loses its original PNT stationary state (even operational balance), the coexisting bi-directional covariant transmutation of “M→m” and “M←m” must spontaneously equilibrate/counterbalance towards new PNT balance till at last matter system recovers new balance of d(M→m)=d(M←m). That’s to say, negative towards positive transmutation rate d(M→m) and positive towards negative transmutation rate d(M←m) of matter system are innate bi-directional covariant couple towards PNT equilibrium as law of causation. The everlasting dynamic orientation of their mutual coordination is positive & negative transmutation counterbalance of matter system, variation of any one must immediately stimulate the opposite to react spontaneously towards new PNT balance. For instance, conditional increase/decrease of negative towards positive transmutation rate d(M→m) must spontaneously stimulate counterbalance reaction of decrease /increase of positive towards negative transmutation rate d(M←m); conversely, conditional increase/decrease of positive towards negative transmutation rate d(M←m) must spontaneously stimulate counterbalance reaction of decrease /increase of negative towards positive transmutation rate d(M→m); till at last, new PNT balance is accomplished.

At the stage, the three reasons Homogenous Cosmos Originated from Unique Genesis consulted for introduction of “Instinctive PNT equilibrium postulate” are as following:

A) Under precondition of homogenous cosmos originated from unique genesis and cosmos exactly consists of spacetime and matter, none coordinate components else, as active lineal homologic filiation between spacetime and matter, PNT action must be the determinant and radical motivation of existence & motion of matter in spacetime. 

B) Usually, variation of existence & motion of matter is not irregularly aimless and endless, there is always default goal orientation, and variation of existence & motion always keeps on going without letup by the light of nature before ultimately approaching ideal goal existent fettle. 

C) Upon experience intuition, no matter in the nature or in our society, it seems all existence & motion indistinctly behaves default but immanent instinctive equilibrium.

Introduction of Instinctive PNT equilibrium postulate affirms intrinsic dynamic orientation of PNT action. As presence of “d(M→m)=d(M←m)” and “instinctive PNT equilibrium” of matter system, the magnitude of mass of matter field “M” and mass of positive matter “m” and all the related state parameters must vary according to spontaneous performance of instinctive PNT equilibrium between d(M→m) and d(M←m). During the course of instinctive PNT equilibrating between d(M→m) and d(M←m), if d(M→m)>d(M←m), then, mass of positive matter “m” consequently increase, and mass of matter field proportionally decrease, as variation of mass of positive matter and matter field, matter field strength α, time dynamic speed Y vary accordingly, there is nonzero force, acceleration, velocity change, momentum change, kinetic energy change etc; if d(M→m)<d(M←m), then, mass of positive matter “m” consequently decrease, and mass of matter field proportionally increase, as variation of mass of positive matter and matter field, matter field strength α, time dynamic speed Y vary accordingly, there is nonzero force, acceleration, velocity change, momentum change, kinetic energy change etc.

All in all, no matter it is PNT performance case of d(M→m)=d(M←m) or d(M→m)>d(M←m), the integrative logic correlation (just the existent behavior logic of matter system in spacetime) of all the related parameters of matter system can be illustrated as below:

Diagram II-i-1. Integrative logic constitution of PNT dynamics.
The integrative logic constitution of the whole argument is as below:

Any discretionary two particles in cosmos are mutually convertible for they ultimately possess the common component in certain configurable hierarchy

Homogenous cosmos originated from unique genesis postulate

Spacetime Matter

Logic extension 1 Spacetime & matter must be coordinate homologies in cosmos

Logic extension 2 Along cosmic homologic proliferation sequence, spacetime & matter must be homologic filiation

The PNT correlation between spacetime and matter: $d(M \rightarrow m) = d(M \rightarrow n) + d(M \rightarrow m)$

Instinctive PNT equilibrium postulate

When $d(M \rightarrow m) = d(M \rightarrow m)$: Matter inertial conservation equations

When $d(M \rightarrow m) \neq d(M \rightarrow m)$: Homogenous (PNT) dynamics

Illustration II-i-2. Inborn logic constitution of PNT dynamics.

The inborn logic constitution of PNT dynamics consists of four chain-reacting logic linkages:

The ① logic linkage: rational approach from newly highlighted factuality that “any discretionary two particles in cosmos are mutually convertible $\sim$ for they ultimately possess the common component in certain configurable hierarchy” to “Homogenous cosmos originated from unique genesis postulate”.

The ② logic linkage: substituting cosmic hypostatic components of spacetime and matter into Homogenous cosmos originated from unique genesis postulate under auxiliary presumable precondition that cosmos exactly consists of spacetime and matter, none coordinate component else, two logic extensions of Homogenous cosmos originated from unique genesis postulate deduced thereby.

The ③ logic linkage: hypostatizing the two logic extensions of Homogenous cosmos originated from unique genesis postulate with “space field hypothesis” and “matter homologic generation hypothesis” so as to affirm lineal homologic filiation between spacetime and matter——PNT action.

The ④ logic linkage: with PNT action between spacetime and matter in mind, in order to ascertain the fundamental dynamic orientation of PNT action, Homogenous Cosmos Originated from Unique Genesis predictably introduced “Instinctive PNT equilibrium postulate”, so that the existence & motion of matter in spacetime consequently betrays itself racy. The next job to illuminate existence & motion of matter in cosmos is but what kind of mathematical logic we should introduce to formulate the PNT action with PNT.
2.1. Matter Inertial Conservation Equations

So-called “matter existence” is just integrated hypostatization that some certain scale “transmutation & transition rate of field genic units towards elementary genic units d(M→m)” — “transmutation & transition rate of elementary genic units towards field genic units d(M→m)” physical esse of distinctive object (/matter) dm≥0 is maintained in relatively steady idiographic succession. In simple words, so-called “matter existence” is but physical embodiment of idiographic PNT action of matter system, and the hylic esse of the so-called “physical embodiment” includes material configuration and kinetic status of the very object. Existence & motion of matter system radically depends on PNT action of matter system in spacetime, so-called “matter existence” is but physical embodiment of idiographic PNT action of matter system. We can generally classify the PNT performance of matter system into two general cases of d(M→m)=d(M←m); the section of “Positive & Negative Transmutation Dynamics” derived from analysis and formulation of PNT performance case of d(M→m)=d(M←m).

2.2. Positive & Negative Transmutation Dynamics

The matter inertial conservation equations based on the condition with several simple mathematical equations. And now, we may combine the five equations above into equation group as following:

\[ M + m = R \quad (\text{1}) \]
\[ M / m = K \quad (\text{2}) \]
\[ mV = d(M \rightarrow m)Y \quad (\text{3}) \]
\[ L^3 \alpha(M) = A \alpha m \quad (\text{4}) \]
\[ Y = B \alpha(M, r) \quad (\text{5}) \]

(In the above equation B is the proportional constant) Generally, when we practically come to study the existence & motion of matter system in spacetime, we just choose matter field strength and time dynamic speed on the surface of object.

And now, we primarily assume that time dynamic speed Y of any point in matter field with distance r to the mass center of object is proportional to the strength of matter field at the very point \( \alpha(M, r) \). Under the precondition that matter system keeps constant, M is a constant, and \( \alpha(M, r) \) is a constant too, so that Y is consequently a constant too, just as the equation below:

\[ Y = B \alpha(M, r) \quad (\text{5}) \]

2.2. Positive & Negative Transmutation Dynamics — PNT Dynamics

So-called “matter motion” is just integrated hypostatization that performance situation of some certain scale “transmutation...
& transition rate of field genic units towards elementary genic units \(d(M \rightarrow m)\)—“transmutation & transition rate of elementary genic units towards field genic units \(d(M \leftarrow m)\)”—physical esse of distinctive object (/matter) \(dm \geq 0\) is impacted by homologic causes, so that the performance situation has to spontaneously readjust towards new operational balance for acclimation. In simple words, so-called “matter motion” is just dynamic embodiment of PNT action of matter system under inconstant ambient conditions, ——physical hypostatization of instinctive PNT reciprocal equilibrium towards optimum PNT operation against substantial PNT disturbance, and the hylic esse of the so-called “dynamic embodiment” includes variation of material configuration and kinetic status of the very object.

We come to analyze the unbalanced PNT performance condition \(d(M \rightarrow m) \neq d(M \leftarrow m)\) of matter system on the groundwork of matter inertial conservation equations, ——just emphatically analyze how all state variables of matter system vary accordingly during the course of the covariant equilibrating between \(d(M \rightarrow m)\) and \(d(M \leftarrow m)\) due to PNT operational balance.

Obviously, as PNT performance characteristics of matter system, there are only two ways for matter system to lose its balance or break its original state. The first is to impact the matter field of matter system, so as to cause matter field mass \(M\) to arise a material change \(\Delta M\), and so as to make the matter system lose its PNT equilibrium or break its original state. The second is to impact the positive matter (or luminous matter) of matter system, to make the negative transmutation rate will spontaneously arises increase trend of positive transmutation rate, so as to tend to new PNT equilibrium or break its original state or stationary state.

As the presence of PNT equilibrium instinct, once matter system loses its PNT equilibrium or its original PNT state is broken, the inverse covariant \(d(M \leftarrow m)\) and \(d(M \rightarrow m)\) of matter system will immediately equilibrate towards new PNT equilibrium spontaneously. And just because of the performance of the instinctive covariant equilibrating between \(d(M \leftarrow m)\) and \(d(M \rightarrow m)\), all the state variables of matter system vary accordingly. And indeed, we here introduce PNT dynamics as just ready to illuminate the corresponding quantitative change of the related state variables of matter system varying due to instinctive PNT reciprocal equilibrium towards optimum PNT operation.

In accordance with the first condition, there is an increase \(\Delta M\) of the negative mass of matter field. As the value \(\Delta M\) can be either positive or negative, the condition can be classified into two sub conditions.

A-1). The value of \(\Delta M\) is positive \((\Delta M > 0)\), ——the outside inputs negative mass to the matter field of matter system, the negative mass of matter field is proportionally increased so as to make the matter system lose its PNT equilibrium or break its original PNT state.

Let’s suppose, before the mass of matter field increased, the \(d(M \rightarrow m)\) and \(d(M \leftarrow m)\) of matter system just existing in equilibrium condition \(d(M \rightarrow m) = d(M \leftarrow m)\), and of course the matter system exists in inertial situation. As the occurrence of the \(\Delta M\) mass increase of matter field, the magnitude of positive transmutation rate \(d(M \rightarrow m)\) will increase consequently, as a result, the matter system will arises \(d(M \rightarrow m) > d(M \leftarrow m)\), the positive transmutation arises predominance, then as presence of equilibrium instinct of matter system, the positive mass of matter system will arises an increase \(\Delta m\), \((\Delta m > 0)\), and satisfies \(d(\Delta M) = d(M \leftarrow m) - d(M \rightarrow m)\), (it implies the change rate of \(\Delta m\) just equals positive transmutation rate reduced negative transmutation rate and \(\Delta m = \int [d(M \leftarrow m) - d(M \rightarrow m)] dt\) And at the same time, as the occurrence of the positive transmutation rate predominance, the negative transmutation rate will spontaneously arises increase trend subsequently, so as to weaken and retard the increase trend of positive transmutation rate, so as to tend to new PNT equilibrium of matter system.

During the course of the covariant equilibrating between \(d(M \rightarrow m)\) and \(d(M \leftarrow m)\), the state variables of \(R, K, Y, \alpha, L, d(M \leftarrow m), V\), of course vary accordingly. For expedience, we just denote them in function format with variable \(t\) (“\(t\)” denotes time), just as \(R(t), K(t), Y(t), \alpha(t), L(t), d(M \leftarrow m)(t), V(t)\). As PNT action of matter system loses its equilibrium or breaks its original state, the matter inertial conservation equations changes into:

\[
\begin{align*}
(M + \Delta M) + (m + \Delta m) &= R(t) \\
(M + \Delta M) / (m + \Delta m) &= K(t) \\
Y(t) + (m + \Delta m) &= d(M \leftarrow m)(t) * Y(t) \\
L^1(t) + \alpha(t) &= A * (m + \Delta m) \quad (\times) \\
Y(t) &= B * \alpha(t) \quad (\times)
\end{align*}
\]

All PNT equilibrating instances caused by outside working to matter system or transferring energy to matter system belong to this category.

A-2). \(\Delta M\) is negative \((\Delta M < 0)\), the matter system works to outside or transfers energy to outside.

For expedient comprehension, we just denote the negative value \(\Delta M\) as “\(\Delta M\) Min format” “\(\Delta M\)”. As the occurrence of “\(\Delta M\)” will absolutely cause \(d(M \leftarrow m) < d(M \rightarrow m)\), so it is easy for us to know that the positive mass of matter system will consequentially arises a negative value \(\Delta m\) too, and thus, the covariant equilibrating towards new equilibrium makes the matter inertial conservation equations changes into:

\[
\begin{align*}
(M + \Delta M) &= K(t) * R(t) / (1 + K(t)) \\
\Delta m &= R(t) / (1 + K(t)) \\
V(t) &= d(M \leftarrow m)(t) * Y(t) / (m + \Delta m) \\
L^1(t) &= A * (m + \Delta m) / \alpha(t) \quad (\times) \\
Y(t) &= B * \alpha(t) \quad (\times)
\end{align*}
\]
besides (III) can arise independently, all the rest arise in system being driven by system (II). If system (I) and (IV) work to system (I), in another word, system (II) is the couple, for instance, (I) and (II) coexist interacting, system (IV) dissolves itself as to consume energy to outside or transfer energy to outside, as a result, when we come to analyze this condition, there are two sub-conditions we have to arrange separately.

B). Matter system does not work to outside or consume energy to outside.

In this condition, the dissolved mass of positive matter/luminous matter is completely inputted into the matter field of the local matter system, and just to make the negative mass of matter field arises an equivalent increase $\Delta M$, which satisfies $\Delta M=0$. Thus the matter inertial conservation equations change into:

\[
\begin{align*}
(M + \Delta M) &= (m - \Delta m) = R(t) \\
(M - \Delta M) / (m - \Delta m) &= K(t)
\end{align*}
\]

(IV)  \[
\begin{align*}
V(t) * (m - \Delta m) &= d(M \leftarrow m(t)) \cdot Y(t) \\
L'(t) \ast \alpha(t) &= A \ast (m - \Delta m) \\
Y(t) &= B \ast \alpha(t)
\end{align*}
\]

Generally, in such cases, the value of $\Delta m$ is very small, if the value of $-\Delta m$ is relatively big, and the matter system does not work to outside or consume energy to outside, or works very little or consume very little energy to outside, the reaction due to the increase of the matter field strength will consequently be very remarkable, and generally, the positive matter/luminous matter will be accessible to consume or emit energy in radiation or heat format, even maybe intensively blast itself as common bomb or A-bomb.

Fuel gets burning and emitting light, fuel engine works to outside, nuclear energy produces electrical power all belong to this category.

In the four above cases that matter system loses its equilibrium, besides (III) can arise independently, all the rest arise in couple, for instance, (I) and (II) coexist interacting, system (II) works to system (I), in another word, system (II) is the energy supply system or driving system, system (I) is the system being driven by system (II). If system (I) and (IV) coexist interacting, the system (IV) dissolves itself as to release energy and transfers energy to system (I).

In accordance with the above analysis of the four typical cases that matter system loses its PNT balance, we find out once matter system loses its PNT balance, no matter what kind of unbalanced condition it is, as the occurrence of covariant equilibrating between $d(M \leftarrow m)$ and $d(M \rightarrow m)$, both of the mass of positive matter/luminous matter and matter field will counterbalance accordingly. For expedience, we just denote the counterbalance varying $M$ and $m$ with variable $t$ in uniform function format $M(t), m(t)$ ("t" denotes time). Thus, whichever unbalanced condition it is, we can express the unbalanced matter inertial conservation equations in the uniform format as following:
We all know, acceleration is just a physical quantification indicates the rate of motion status changed, while the motion status change just arise when matter system loses its PNT balance. Generally, the more the matter system lose its PNT balance, the more intensively and remarkably the motion balance. Generally, the more the matter system loses its PNT balance, the more intensively and remarkably the motion status change thereby, and then the magnitude of the acceleration of matter system will be bigger according to our general sense. However, in the unbalanced matter inertial conservation equations, the variable which can indicate the unbalanced degree of matter system is just the change rate \(K'(t)\) of function \(K(t)\), the bigger the value \(K'(t)\) occur, the more the matter system loses its balance, then the motion state of matter system changes more intensively and faster. Contrarily, motion state of matter system changes more faintly towards inertial motion.

PNT dynamics primarily confirms that the acceleration \(\alpha\) of matter system is proportional to change rate \(K'(t)\) of negative and positive mass quotient function \(K(t)\), and the proportional constant is just the time dynamic speed \(Y\) of matter system, just as the equation below:

\[
\alpha = Y \cdot K'(t)
\]

While in fact, during the course of covariant equilibrating between \(d(M \rightarrow m)\) and \(d(M \leftarrow m)\), the time dynamic speed is not a constant, but a variable due to the change of matter field strength \(\alpha\). We just denote the mathematical correlation in function format as \(Y(t) = B \cdot \alpha(t)\). And at the same time, \(\alpha\) is a variable too in time current \(t\), in order to be precise, we also denote it in function format as \(\alpha(t)\), then the equation above changes into:

\[
\alpha(t) = Y(t) \cdot K'(t)
\]  \(\text{(II-i-2-1)}\)  \(\text{(*)}\)

This is just the acceleration definition equation of PNT dynamics.

In accordance with our general sense, force is the root cause of motion estate change. In hypostasis, to any separate matter system, it’s but the innate consequence of matter system losing its PNT balance. To any matter system with certain total positive mass, the magnitude of force is but the quantification indication of intensity of matter system losing its PNT balance. And in accordance with our general experience, different force works on the objects with the same mass, the magnitude of force is proportional to the consequent motion variation effect; and the same magnitude force works to different subjects with different mass, the impact effect derived from the force is inversely proportional to the magnitude of the mass of objects. In PNT dynamics, the definition equation of force \(F = m \cdot a\) in traditionary physics still keeps its original meaning, but instead, the mass of matter changed to \(m(t) = R(t)/(1 + K(t))\); and further, integrated the acceleration definition equation of PNT dynamics \(\alpha(t) = Y(t) \cdot K'(t)\), we can arrive at the force definition equation of PNT dynamics as below:

\[
F = m(t) \cdot \alpha(t)
\]  \(\text{= R(t) \cdot Y(t) \cdot K'(t)/(1 + K(t))}\)  \(\text{(II-i-2-2)}\)

Velocity change is but the cumulation of acceleration along time, according to the acceleration definition equation: \(\alpha(t) = Y(t) \cdot K'(t)\), we can arrive at the velocity definition equation of PNT dynamics as below:

\[
V = V_0 + \int_V^t \alpha(t) \, dt
\]  \(\text{= V_0 + \int Y(t) \cdot K'(t) \, dt}\)  \(\text{(II-i-2-3)}\)

(In the equation above, \(V_0\) denotes the initial speed of matter system; \(\Delta V\) denotes the velocity change in certain interval)

Displacement is just the cumulation of velocity along time, as \(V = V_0 + \int \alpha(t) \, dt\), we can expediently arrive at the displacement definition equation of PNT dynamics as below:

\[
S = V_0 t + \int \alpha(t) \, dt
\]  \(\text{= V_0 t + \int Y(t) \cdot K'(t) \, dt}\)  \(\text{(II-i-2-4)}\)

In accordance with the original definition equation of momentum change \(\Delta P = mV - mV_0\) and integrating the mass definition equation \(m(t) = R(t)/(1 + K(t))\) and the velocity definition equation \(V = V_0 + \int \alpha(t) \, dt\) of PNT dynamics, we can expediently arrive at the momentum change definition equation of PNT dynamics as below:

\[
\Delta P = m(t) \cdot V - m_0 V_0
\]  \(\text{= R(t) \cdot Y(t) \cdot K'(t) \, dt/(1 + K(t)) - m_0 V_0}\)  \(\text{(II-i-2-5)}\)

This equation can also be simplified into:

\[
\Delta P = m(t) \cdot V - m_0 V_0
\]  \(\text{= m(t) \cdot (V_0 + \Delta V) - m_0 V_0}\)

\(\text{= (m(t) - m_0) V_0 + m(t) \cdot (V - V_0)}\)

\(\text{= \Delta m \cdot V_0 + m(t) \cdot \Delta V}\)

(In the equation above, \(\Delta m\) and \(\Delta V\) separately denote the mass change and velocity change in the interval that the motion state of object changes)

According to conventional definition equation of kinetic energy change \(\Delta E = 1/2 m V^2 - 1/2 m V_0^2\), and integrating the
mass definition equation \( m(t) = 1/(1+K(t)) \) and velocity definition equation \( V=V_0+\alpha(t)dt \) of PNT dynamics, we can expediently arrive at the kinetic energy change definition equation of PNT dynamics as below:

\[
\Delta E = 1/2m(t)V^2 - 1/2m_0V_0^2 = 1/2R(t)^*(V_0+\dot{Y}(t)*K'(t))2/(1+K(t))-1/2m_0V_0^2 \quad (II-i-2-6)
\]

Compared to Newtonian mechanics, the existence & motion of matter system in spacetime is essentially determined by situation of PNT operation of matter system. So-called “motion” is but emulations embodied or the most straightforward dynamic representation format of PNT operation of matter system. And in fact, during the course of motion estate varying, the variation of all the related state variables of matter system radically result in quantitative change of the instinctive covariant equilibrium between \( \Delta(M\rightarrow m) \) and \( \Delta(M\rightarrow m) \). PNT dynamics firmly fastened this quintessence when it came to analyze and study the existence & motion of matter system in spacetime. And indeed, the mathematical analysis of existence & motion of matter system in spacetime according to PNT dynamics is just the synchronous formulation of PNT action of matter system, and it’s just why “dynamics of Homogenous Cosmos Originated from Unique Genesis” is called “PNT dynamics” too.

Just because of this, PNT dynamics emphatically focuses and fastens the innate PNT correlation between spacetime & matter and treats the PNT correlation of matter system as the essential dynamical logic origin, it tries to study and analyze the existence & motion of matter in spacetime by formulating the instinctive covariant equilibrating between \( \Delta(M\rightarrow m) \) and \( \Delta(M\rightarrow m) \) of matter system as to approach the PNT dynamics. As the difference in thought origin and study method, the discrepancies, even contradictions between PNT dynamics and Newtonian mechanics, Relativity, Quantum theory are consequentially self-evident. Although, at present, PNT dynamics is still at its pioneering stage, it’s just why not as seasoned as them; although the existent factuality of nature can only be unique!

When PNT dynamics came to analyze and study the existence & motion of matter system in spacetime, it emphatically fastens the quintessence that both spacetime and matter are lineal homologies and matter is the sequential evoloutional outcome of material spacetime—the agglomeration or crystal of extra-saturated space field and the consequent PNT correlation between spacetime and matter, and just treats universal matter as single logic notion on the point of cosmic origin, neglected all nonessential characteristics of universal matter. When it practically comes to analyze and study the universal dynamic principle due to existence & motion of matter system in spacetime, there is none essential difference between this object and that object, this kind of matter state and that kind of matter state. As a result, it is applicable to any matter in cosmos, as long as it belongs to the category of universal matter, as long as it exists in spacetime.

At the same time, PNT dynamics has none reasons to admit the distinctions among gravity, electromagnetic interaction, strong interaction and weak interaction, and it also has none reasons to admit the discrepancies between any macroscopical object & microcosmic object and between any high-speed moving object & low-speed moving object. As long as our study objects belong to category of universal matter, as long as our study objects exist in spacetime, the essentiality of universal matter have positively determined their existence & motion must be subject to either the PNT dynamics or the matter inertial conservation equations. This is just the logic extension of homogenous cosmos originated from unique genesis in dynamic principle as law of identity.

Of course, when we practically come to study the macroscopical objects moving in low speed, as the change of \( m(t) \) is substantively very tiny during the course of PNT equilibrating, so that we can directly adopt \( m_0 \) instead of \( m(t) \) and neglect the relatively tiny change of mass of positive matter/luminous matter.

Thus, the force definition equation of PNT dynamics \( F=m(t)*a(t) \) can be consequently simplified into:

\[
F=m*\alpha(t)
\]

The momentum change definition equation of PNT dynamics \( \Delta P=(m(t)-m_0)V_0+m_0*(V-V_0) \) can consequently be simplified into:

\[
\Delta P = (m_0-m_0)V_0+m_0*(V-V_0)
\]

The kinetic energy change definition equation of PNT dynamics \( \Delta E=1/2m(t)V^2 - 1/2m_0V_0^2 \) can be simplified into:

\[
\Delta E=1/2m_0V_0^2-1/2m_0V_0^2
\]

It implies, under the precondition of admission of PNT dynamics, when we practically come to study macroscopical objects moving in low speed, in order to avoid unnecessary complexity, we can expediently adopt Newtonian mechanics as accessible approximation.

3. Conclusion

As long as cosmos is throughout homogenous originated from unique genesis and exactly consists of spacetime and matter, universal existence & motion of matter must inherently and essentially depend on PNT action of matter system; as long as PNT action of matter system in cosmos inherently accords with orientational fundamental of instinctive PNT equilibrium, universal existence & motion must either be subject to matter inertial conservation equations or be subject to PNT dynamics, no matter it’s microcosmos or macrocosmos.

———Firstly written in Dec. 1995, literal revision was done in Dec. 2004
Acknowledgement

This paper is originally a section extracted from monograph of Homogenous Cosmos Originated from Unique Genesis. For lightsome comprehension of the whole idea of Homogenous cosmos originated from unique genesis and some related contents in the paper, you are welcome to turn to the whole monograph.

English version of Homogenous Cosmos Originated from Unique Genesis: http://www.docin.com/p1-1222290983.html

References