“ **Theory of a Complete Time or Simultaneous Universe and Space as a Shared Amount of Energy** ” (1986 - 2021)

It's a newer cosmological interpretation that has been formulated on the basis of the general idea, that the Universe **is always the same within the limits of a longest time interval** (max period $\mathbf{T}_{uni}$) in all possible ways in the totality of all times - from our past until our future - and nothing changes. By a first analysis, the concept of a complete and always the same Universe in a longest time period, introduces a decisive trait for all things. This concept introduces the cyclical time (that is the period and pace) and the regulative **limits of a longest and minimal period Tmax - Tmin** as a main principle for the existence of all things. Also it introduces a necessary relation and coexistence between an uppermost limit with a minimal limit. This general principle contains as a sperm the relation, that is sought in modern physics in other terms, between the theory of general relativity and quantum physics. The existence of limits has been ignored for the research and progress of physics for many centuries. Instead, the research of natural phenomena was being materialized by the opposite thought. The absence of limits in nature was a doctrine, and the vast experience with observations about periodic phenomena had been degraded despite knowledge of the universal physical constants. By the concept of a complete Universe the trait of a limit in time is imposed, therefore in the physical space and length, as well as a limit for the changes of all the fundamental phenomena.

The introduction of these overall limits, even in an arbitrary manner, imposes many consequences and corrections in certain relations of physics, which had as a reliable datum, that length, time and energy and other dependent sizes or quantities can be reduced or increased boundlessly. In physics, these limits are determined at least in the quantity of mass and energy, in length, in time and rhythm, in all forces and - without conscience - they are included in few universal constants (mostly c,G,h). The initial idea reminds us of some ancient philosophical thoughts. Really, this new theory did not begin with some discoveries from modern Physics and Astrophysics or with some random observations. This theory is unfolded with rational thinking about the common traits of all things, and many different phenomena are reduced to a minimal number of fundamental phenomena. Thus the closest relations of things are revealed, the phenomena are unified and all their differences are explained by the change of a few fundamental phenomena, such as the motion and the equilibrium.

According to the Theory of a Complete Universe, time is finished for the complete Universe within a maximum time interval. This is, while all the separated things are in smaller time limits and the Universe never stops being created in relation to them! The past and the future - as we define them relatively - constitute a wider “now” of the full **100% Universe.** The Universe within the total time is completed before the moment at which its parts begin to exist. On the contrary, the complete universe toward the parts is almost absent like an empty space! The minimum time of the beginning of the Universe **is not before** its existence. This short time interval of its beginning is not in reality a beginning without the Universe or a beginning of the creation of the whole Universe. It is a relative beginning of its creation according to a fast natural procedure in microscopic dimensions, with which the Universe isolates itself and remains as inactive with the natural phenomenon of the free space where contains matter. In general, the structural elements summarized in the notion of "matter" are the **initial ways** (carriers) by which the Universe begins to re-created as an external (and indirectly) at its **minimal moments**. This is, while the full Universe is relatively an absentee with the presence of a finite and dynamic space. The complete Universe does not have its beginning (of existence and quality) in certain separate substances or an amount of particles and it's not a result of a composition that has preceded. The longest Period can be divided theoretically into infinite shorter moments. But in nature, the longest Period is not constituted by infinitely smaller moments, otherwise the Universe would not always be the same within the maximum time interval. A minimal time limit is imposed which is **the minimal time of interaction** $\mathbf{t}_{min}$ and the relative beginning of time for composite things.

The limit for the division of time (t_{min}) is one of the first amazing conclusions that results, when we consider the Universe to be stabilized (and simultaneous) within the constant limits of a total time (maximum period). **The matching of the structural elements and their interactions with shorter periods of time** is also one of the first important conclusion to explain how nature is created and renewed. In minimal times of interaction, some "minimal things" (in common language) or some minimal quantities of energy (in the terms of physics) correspond. To explain the beginning of the nature, it is therefore necessary to investigate how energy changes are maintained as unabated periodic energy oscillations with extremely high frequencies such as stationary waves. "**Matter**" and "**particles**" are such elementary quantities of energy which are retained by the periodic change and exchange of energy $h \cdot f$, by wave motion phenomena at the fastest rhythms of nature and by periodic fluctuations of a shared amount of energy. In the Theory of a Complete Universe, we infer that a minimal and a longest time interval (Tmin,

Tmax, Tuni, fmax, fmin) and correspondingly a minimal and longest distance / length exist. This thought enforces theoretical limits for all phenomena, amongst which also **a limit in the increase of speed V**max**,** which is a combination of length and time, that is presented as motion. In physics the limit in the maximum speed of motion **V**max has been accepted as an axiom without any explanation. Also, the limit for the longest distance imposes the curvature of free space depending on the increase of distance and speed. Motion in free space cannot be realized in an unlimited straight line (this is true even for light), because an unlimited space would imply inter alia an unlimited time of interaction and, ultimately, a Universe with an unlimited amount of energy.

In the basis of this idea of a longest and correspondingly a minimal time interval, many laws are interpreted and a multitude of different phenomena are connected (having proportions) with each other. These are phenomena such as the minimum time $\mathbf{t}_{min}$, minimal length $\boldsymbol{\lambda}_{min}$, the minimal energy in transfer $\mathbf{E}min=h\cdot f_{min}$, the marginal speed **V**max, the minimal and strongest force **F**, the minimum ($\mathbf{a}_{min}$) and the fastest rate ($\mathbf{a}_{max}$) of change of speed, the limit in the increase of inertia, the limit in the longest length and the curvature of space, the dynamic relation between the finite space with matter, gravity as inverted radiation, the isotropic space, the stability and stagnant situations in the wave structure of matter, the universal physical constants, the maximum quantity of energy that can be transmitted by waves ($\mathbf{E}max = \mathbf{h}\mathbf{f}_{max} = \mathbf{F}max\ \boldsymbol{\lambda}_{min}$) and a lot of particular cases. To confirm the limits of physical sizes and how nature is renewed and maintained while phenomena change, the investigation has focused on universal physical constants. The universal physical constants for the speed of light c, for the gravitational field G, for the elementary quantity h and the ratio π of the circle can give a significant equation to a maximum quantity of inertia known as the unification of the constants [$M_{pl} = \sqrt{(hc/G)}$]. The theoretical investigation is facilitated by this important equation, because higher and lower values can be calculated for changes in physical sizes. But the correlation of this maximum mass with the maximum speed of light c was an unfamiliar thought and gives certain equations for the mass of the particles in proportion to a velocity. This relation has been formulated by an independent Greek researcher and is: C / V = Mmax / M. The velocity displayed by this previous equation is the velocity that also results from an equation with the constant of the gravitational field G customized for wavelength instead of radius and is: $V = M\cdot c/Mmax = \sqrt{(GM/\lambda_m)}$. By the investigation of these equations and the calculations of boundaries in mass and the corresponding energy, all particles are revealed as fluctuations of a generic amount of energy. By

advancing the calculations on the structure of matter and boundaries of the free space further, the closest relation of the particles to the space and the presence of the complete Universe as a shared amount of energy are confirmed.

The free space exists with a minimum length limit and at the same time a maximum length limit**.** The distance in the free space is also a direction (length with angle), a “homocentric” multiple distance, in other words a radius (an isotropic free space with possibility for displacement and approach simultaneously). **The radius is not an accidental phenomenon and irrelevant to the structure of matter**. According to the Theory of a Complete Universe, the free space is finite and corresponds to the energy of the (full) Universe, that has not been materialized. The Universe in its entirety of time is stabilized and exists relatively as a finite space and as common inception for the transfer of energy (by waves) and for interactions where can happen with the particles (in the increased time intervals). **The complete Universe from the minimal radius** ($\approx\lambda_{min}$) is presented (reversely) with the strongest force and so we call it "**nuclear**". The simultaneous presence of the Universe in individual things appears externally with the limit of a longest distance for motion (that is also minimum curvature of the free space) and as the weak force that physicists call in other terms "**gravity**". The earlier philosophers called this force with the terms "unity" and "affinity" of things. The same force **from a minimal distance** in microscopic structure of matter is presented contrarily as **nuclear and at a periodic rate**. The same force **weakened by wave processes in the structure of matter appears as a gravitational field**. As it is known, the gravity influences all the material things (bodies) with the same force, independently of their chemical composition. Naturally, it is not an accidental phenomenon and is owed to the way that the material elements begin to exist by the fixed energy of the same space, by a common quantity of energy and same wave processes. The isotropic transfer of energy, which is concentrated with waves - in opposition to the decentralizing behavior of light - acts as **gravity**. In fact, the energy of the space is where it is consumed and carried radially and evenly **for the maintenance of the structure of matter** and in a wave mode to compensate for points where energy is reduced. The stabilized structure of the atom is a process wherein a wave disturbance of the overall energy of the Universe culminates in microscopic wavelengths ($\lambda=h/c\cdot M$) and restores rapidly the balance.

An amount of energy is shared and immediately is presented as free space and this amount has fluctuations at extremely hight rates. The beginning of the physical cosmos happens in conditions, where oscillation, stationary waves and feedback are caused at the highest frequencies (between $3\cdot10^{20}$ Hz – $0.4524\cdot10^{42}$

Hz), where the upper limit is **f**max =**V**max/**λ**min (for λmin ≈ h). Thermal phenomena are not missing because these are the e/m noise and the weakened forces from the wave changes stabilizing matter. The total energy within the limits of the longest time (dimensions of power P), remains also a constant quantity. The total energy is relatively the global space and it compensates in the fastest way the deficiencies of itself, the shortages that constitute the material world. But the flow of waves for the compensation of energy shortages creates again extremely rapid deficiencies and so the material elements are retained, without stopping to relay quantities of energy to each other (balance in change, synchronization and stationary waves). The **particles** constitute quantities of energy that are exchanged and transmitted as waves in the shorter time intervals of interaction at lower speed than the maximum **c**. When these quantities of wave energy are absorbed by the bodies at higher rates then they appear having the properties of particles. The "Big Explosion" takes place permanently and the material cosmos is created permanently everywhere by the free space at its smallest dimensions ($\approx\lambda_{min}$), with the microscopic "explosions". **The Universe not only is never created, but on the contrary it has always been complete**. The world, which is absent, is immediately useful, so that the light, the heat, the radio waves and the structure of matter can exist. This is the matter through which we are ourselves presented as separate bodies (in space and time)! **The free space is the full Universe that they seek before the moment of a Big Bang and participates immediately in the structure of matter with wave phenomena!**

All things are formations of rapid energy oscillations in a constant and shared quantity, which is in a state of equilibrium. The shared energy seems to be absent in the form of a free space, because this total energy **is in a balanced state and approaches the average values of fluctuations**. The global space is the beginning and end for the structure of matter, while its energy appears by fluctuations from the reduction of the higher velocity and frequency, as opposed to what we observe in the ordinary material world (low speed change and slow processes). The total energy is in a state of equilibrium with dynamic processes and all structural elements exist with the same energy oscillations of one and the same potential space. Thus, matter is formed everywhere by the same energy-time-length relations through wave phenomena at the highest rhythms of nature. All differences in material things and all physical properties of matter emanate from the time intervals in which energy quantities of the disturbed space are altered, exchanged, transmitted and fluctuate. Nuclear force is a property of the total amount of energy that is balanced, simultaneous and shared and it is presented as a powerful restoring force in any disturbance of energy balance. The fluctuations of the shared en-

ergy of space and the energy changes in the structural elements are fine fluctuations of the nuclear force (of the whole Universe). The fewer quantities of the reduction of the shared energy and the minimal decelerations are initially presented with the minimal inertia of the electromagnetic waves (under than 10^{20} Hz). When the shared energy is more reduced and the time of restoring to equilibrium is increased, then the quantities of energy are presented with the increased inertia of some localized particles. The mass presented in the bodies has a bound quantity of energy that is missing from the common quantity and the shared energy is presented as a space of a certain radius and with the nuclear force weakened as a gravitational field. Total mass does not appear all at once in one body and is distributed throughout (global) time T_{uni} ~10^18sec.

There is no Universe, time and space without matter, that is, a total amount of energy in immobility. Conversely, there are no primary elements from which the whole Universe is assembled externally (without central, unified and synchronized regulation). No theory, which describes the creation of things by fundamental elements or by particles, can give a serious and reasonable interpretation of the presence of same forces and limits everywhere in the Universe and even in accordance to experience. According to the Theory of a Complete Universe and Time, it is not the separate material things that determine exclusively the form of the total space, its longest distance where it is extended and finally, the laws of nature. On the contrary, a complete (100%) Universe in its entirety of time exists relatively as a finite space and as shared quantity of energy for all what can happen and exist indirectly, through the elements of material interaction (or particles). The total energy has predetermined the limits for particle interactions (limits of length Lmin - Lmax, time Tmin - Tmax and in quantity for the transfer of energy h·1Hz - h fmax). The Universe does not have unlimited time margin to be the same and constant forever and the separate things also have time intervals to exist and act. This is briefly the reason why a probability law applies to their behavior and developments. The answers in the queries about the conservation and the creation of matter cannot be given without understanding, how the free space participates in material processes (in microscopic lengths) as a balanced energy.

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It is astonishing, that the model of a stabilized 100% Universe in a maximum Period explains and enlightens, what "*relativity of time*" means in nature and why a maximum marginal speed exists for motion. The time obligatorily is relative because an important reason exists and this reason is that the Universe in its entire

Time (also with total energy) should be always the same and stabilized! As it seems, the common time has a close relation with the shared quantity of energy and the energy cannot be changed and transferred faster than a minimal time interval. This is the reason for the discontinuous and rhythmical transfer of energy with the limit of a minimal quantity (Law of the Conservation of Power). Thus it is imposed to all things to begin with the same rates of energy fluctuations. If the Universe were not stabilized in a total time to be complete and its energy in a fixed quantity, then the energy change at the shorter time intervals would be unlimited. The quantity could increase or be transmitted independently of a unit of time, and then the shared energy would be deficient forever and shared without processes. **The conservation of energy would be an accidental phenomenon**. Neither the minimal quantity of time $t_{min} = \lambda_{min} / V_{max}$ nor a highest frequency f_{max} would exist. In this case, the structural elements would be unconnected with a constant amount of energy (as fluctuations of it) and therefore they would have properties randomly defined by their environment.

The energy cannot be transmitted without limits and independently of the total energy of the Universe, just as it would happen without the stability of the total energy. The Complete Universe does not appear at the same time as a continuous quantity of matter, and the total energy is presented as though it is missing. On the contrary, the world of discrete bodies is presented as a quantity of matter with the (time-consuming) delay in the processes of restoring equilibrium. Thus the complete Universe is not presented as simultaneous. Discontinuity and limits in energy flow are imposed by maintaining total energy and serve to restore balance. Without this law, the decrease and the transfer of the energy into the material world would not be regulated. The law of conservation of energy is, again, a quantitative expression of the law of the stability of the complete Universe and its simultaneous presence. With this abstract law of the conservation of energy we pretend and conceal the relation between the conservation of energy with the passing of time and the contradiction that exists between the concept of conservation and the endless time and change.

Eventually it is easier and more logical when we try to describe how matter is maintained and renewed based on the general thought of one Simultaneous Universe, that has always been complete 100%. It is an impasse to shift the problem in something that existed before the Universe and in other fantasies and in the absurdity of a total Creation by the absolute zero, in order to reconcile few fragmentary observations! The rational theory of a Complete Universe and Time goes beyond the science of physics and guides the research of the structure of matter and the cosmos. It has an important advantage against other cosmological theories.

The physical interpretation does not depend on the precision of a mathematical result, we do not need to think about hypothetical things and it can be comprehended through phenomena of usual experience, something that does not happen accidentally and this same theory explains why. The Universe of the cosmological theory about a full Time is complete and self-existent, because it is directly present, immutable and "compact" within the limits of a total time - while it is absent relatively. The 100% of the Universe exists simultaneously and **the directness coincides with the inwardness and self-regulation**. By the rational unfolding of this seemingly irrational and contradictory idea, a multitude of natural phenomena are interpreted incredibly easily, and the path for the connection of natural with biological phenomena opens!

***** The summary is from the second volume of the book entitled

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With the subtitle: How the natural laws and forces are applied. The fundamental concepts and relations for a rational Cosmology (Cosmonomy)

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