

ZERO VOID FORCE

Discovery of the First Fundamental Force of the Universe (Z-Force)

& the Final Unification of the Four Known Forces of Physics

Discovery of the Mother Formula of Physics ($Z = m / v$)

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Abstract

This article introduces and explains the main framework of the Zero-Void Force Theory and presents the discovery of the first force of nature, namely the Z-Force. This theory describes the primary and fundamental mechanics of nature through the fundamental relationship between mass and volume. The theory explains that, from the smallest particles of existence to the largest cosmic scales, the Fundamental Potential Difference within the mass-volume relationship determines and guides the primary mechanics underlying physical phenomena.

The fundamental formula of the Z-Force, $Z = m / v$, is explained in full in this article, where m represents the mass of fundamental particles and v represents the volume of void. According to this theory, the Potential Difference between mass and volume initiates the first force of nature and then, step by step and layer by layer, gives rise to the other known fundamental forces of physics.

The article also explains the theory's view of the fundamental nature of energy, matter, time, and space; the formation of particles; the nature of Relative Vacuum and Absolute Zero Void; the statistical cause of cosmic expansion; and the real mechanics of black holes.

The purpose of this article is to introduce the Zero-Void Force Theory and the Z-Force as the First Force of Nature, and to provide a scientific and philosophical explanation of the Mother Formula of Physics, $Z = m / v$; a formula that, within the framework of the Zero-Void Force Theory, ultimately leads to the final unification of the four known fundamental forces of physics and, in the end, simply answers all the remaining open questions of physics.

Keywords: Zero Void Force; Z-Force; Mass-Volume Relationship; Fundamental Potential Difference between Mass and Volume; Final Unification of the Four Known Fundamental Forces of Physics; Mother Formula of Physics

Note on the Source Text

This article was prepared by A.A. Zevof, the theorist and author of the book Zero Void Force. This article is derived from the opening section of the book Zero Void Force by A.A. Zevof. The source text has been preserved as closely as possible in its original form in order to retain the complete sequence of explanations, definitions, and theoretical reasoning through which the Zero-Void Force Theory is introduced. For this reason, occasional references to "this book" remain in the text.

Preface:

This book is the fruit of more than 30 years of study and research in the fields of mathematics and theoretical physics.

From the mechanics of classical physics to modern cosmology, I have always owed my path of learning to the beauty of nature and to the thoughts of scientists such as Newton, Einstein, Descartes, and many other teachers, scientists, and researchers who, through a deeper knowledge of nature, have always made the beautiful science of physics easier to understand and have continually developed it.

Zero-Void Force Theory is an effort to see the infinite beauties of nature more simply, through a mathematical formula that is both simple and profound. I hope this book opens an infinite gateway for the dear readers of this book toward a deeper understanding of nature and of the existential unity of all cosmic phenomena.

With respect: A.A. Zevof

Zero-Void Force Theory and the Final Unification of the Four Known Fundamental Forces of Physics

From ancient times until today, the way nature works and the astonishing beauty within it have always occupied the minds of all scientists...

From classical geometric and mathematical theories to modern models of physics, such as general relativity and quantum mechanics, each has tried to reveal for us one corner of the secrets of nature and the universe...

The shared question that has always challenged the minds of all scientists and researchers in mathematics and physics has been this: is it possible that all the known forces of physics, and the mechanics by which all particles are formed, originate from one simple mathematical principle in nature?

Zero-Void Force Theory gives a positive answer to this ancient question of science. This theory proposes that the mechanism that produces all known forces, and the way all small and large particles are formed, arise from only one fundamental mathematical principle in nature: the Statistical Potential Difference between mass and the total volume of the universe...

The explanation of this Fundamental Potential Difference of Nature is formulated and presented in this book in the form of the mathematical formula of the Zero-Void Force, namely ($Z = m / v$).

Zero-Void Force Theory rests on the assumption that, at its most fundamental level, the universe is made of only two fundamental elements:

Primary M particles, which are the representatives of the fundamental mass of the universe (m), and... the volume of Absolute Zero Void, which is the representative of volume (v) in the Zero-Void Force formula.

Primary M particles are the smallest indivisible and irreducible units of mass in the universe, and Absolute Zero Void is the completely empty space amid the arrangement of Fundamental M particles...

Neither of these two main elements of nature possesses any intrinsic force of its own. But when these two fundamental elements of nature are placed beside one another, the Fundamental Potential Difference between the mass and volume of the entire universe is created; and this Fundamental Potential Difference gives rise to the first fundamental force of nature, called the Zero-Void Force, which gradually, layer by layer, brings about all types of particles and the four known fundamental forces of physics, building them step by step...

((An Introduction to the Zero-Void Force))

The truly beautiful point in the mechanics of the Zero-Void Force

is precisely its display of the infinite simplicity and scalability of nature's main mechanics... which, until today, we have overlooked because of its excessive simplicity and abundance.

That is, in the natural sciences, the simplest things in nature always remain hidden from our complex eyes and minds...

exactly for the same reason that we always ignore the air we breathe at every moment and pay no attention to our breathing, which is the most important factor of life...

For this same reason, the simple and fundamental mechanics of nature, namely the Zero-Void Force, has also remained hidden from human sight until today...

not because of its complexity, but because of its infinite simplicity; we have always overlooked it...

That is, in all conditions of the universe, the mechanics of the Zero-Void Force is always valid... ($Z = m / v$)

One of the most fascinating features of Zero-Void Force Theory is its infinite simplicity, its naturalness, and its complete independence from any mental assumption or extra dimension...

so that the Book of the Zero-Void Force Theory and the simple mechanics of the Zero-Void Force can be read and understood by all ages, from children to adults...

That is, the Zero-Void Force does not need any of the complex definitions and assumptions of modern or classical physics in order to prove itself:

It means independence from:

No intrinsic force:

(In Zero-Void Force Theory, all forces arise from the Statistical Potential Difference between mass and the total volume of the universe.)

No hypothetical and mental probabilities that do not exist in nature:

(In the mechanics of the Zero-Void Force, all forces and all types of light and heavy particles are the result of the motion and connection of Primary M particles; that is, the Potential Difference within nature's statistical distribution, which is the constant in-fall of particles toward Zero Void or Relative Vacuum.)

No mental extra spatial or temporal dimension:

(In the mechanics of the Zero-Void Force, everything occurs in three real dimensions and through the logical relationship between true mass and true volume in nature, and time is only a byproduct of the motion of particles.)

No geometric or mathematical complexity:

(In the mechanics of the Zero-Void Force, there is only one simple mathematical and natural ratio, which always gives the correct answer in every physical problem...

That is, the formula ($Z = m / v$) gives a precise and logical explanation of the real mechanics of everything, from subatomic particles to galaxies.)

No unsolved mathematical or physical paradox is left unanswered by the simple mechanics of the Zero-Void Force...

All phenomena of physics become scalable through the Zero-Void Force formula at every size, even at infinity...

For example, in the Zero-Void Force, Entropy is no longer the collapse of bodies and the tendency of cosmic forms toward disorder...

Rather, it is the collapse of matter and energy for the purpose of bringing greater order to the statistical distribution of the mass-volume relationship in Fundamental Primary Space.)

Beyond this, the mechanics of the Zero-Void Force has the power to predict and solve the remaining open problems of physics with simplicity:

from the precise explanation of quantum mechanics to the correct and real way black holes function...

the real cause of cosmic expansion, the primary nature of energy and matter, and even the nature of dark energy and dark matter, and the way all particles are built layer by layer from light to heavy, all of these are explained and resolved only through that same simple ratio

of the Zero-Void Force formula ($Z = m / v$)...

In simple language: Zero-Void Force Theory describes the universe with the fewest elements (Primary M particles + Zero Void) and the fewest hypotheses in physics and mathematics...

that is, with the simple and fundamental mathematical mass-volume ratio, in the simplest and most natural form...

That is, the Zero-Void Force is extremely simple, symmetrical, and infinitely scalable,

and it simply proves that simplicity and purity are the beautiful truth of nature. ($Z = m / v$)

The truly fascinating and beautiful point about Zero-Void Force Theory is this important fact: this theory has not only unified all forces through one simple principle of nature and physics, but also, through the simplified definitions of previous theories, has integrated and unified all old and new theories of the beautiful science of physics. That is, the mechanics of the Zero-Void Force, like nature itself, is infinitely scalable, infinitely symmetrical, and beautiful...

Section One:

Complete Explanation of the Zero-Void Force Formula ($Z = m / v$)

Introduction to the Explanation of the Formula:

In general, in the whole universe and the realm of existence, there is nothing more fundamental than mass. Mass, at any scale, has volume and naturally occupies a portion of space. Therefore, mass is not merely a simple physical quantity; rather, it is the intrinsic and existential property of every thing, every form, every particle, and every body in the science of physics.

Mass gives everything an existential property. That is, anything that exists possesses presence, size, volume, arrangement, and observability by virtue of its mass. If there were no mass, there would be no particle; and if there were no particle, no unit would remain for counting, measuring, calculating, or for the formation of mathematics.

For this reason, all mathematical and physical equations and mechanics are naturally built upon the fundamental principle of mass. If there were no mass, no body would remain to be observed or measured, and as a result, physics would have no subject to examine. More precisely, without mass, and without the volume and space that mass occupies, nothing would come into existence that could be calculated, observed, or measured.

Therefore, at the most fundamental level of the universe and of physics, mass is equal to existing; and the absence of mass, in the physical sense, is equal to nonexistence and absolute nothingness. Wherever mass exists, volume also exists as the field of presence of that mass. So mass and volume are not separate from one another; rather, they are two fundamental aspects of the physical presence of a fundamental thing.

On this basis, the relationship between mass and volume is the most fundamental mechanical relationship in the universe. For every mass, in order to be present, must inevitably occupy volume; and every occupied volume indicates some kind of arrangement, density, difference, gradient, motion, condensation, force, and structure...

In this way, all physical and mathematical mechanics are ultimately extracted from the fundamental relationship between mass and volume. That is, the fundamental chain through which scientific and physical structures arise can be expressed in this way:

Mass -> Volume -> Arrangement -> Potential Difference between mass and volume -> Motion -> Force -> Structure -> Geometry -> Mathematics -> Physics, and...

As a result, under all cosmic conditions, the fundamental formula of the Z-Force ($Z = m / v$) is valid.

That is, the Z-Force, or the fundamental Z ratio, expresses the relationship between mass as an intrinsic and existential property, and volume as the field of presence and the occupied space of every kind of mass and body; and this fundamental and existential Potential Difference between mass and the volume of the entire contents of the universe always initiates primary motion, or the Primary Force of the universe, under all conditions. In this book, this is referred to as the Mother Formula of Physics... ($Z = m / v$)

(Explanation of the Fundamental Formula of the Zero-Void Force)

$$(Z = m / v)$$

Explanation of the letter (m) in the formula ($Z = m / v$)

(m) represents mass

or, in the formula, the mass of M particles, namely the mass of Fundamental M particles.

(In general, the letter m, meaning mass, represents the smallest unit of mass in the universe within the Zero-Void Force formula.)

(Likewise, the letter m indicates the indivisible and irreducible Fundamental M particles in Zero-Void Force Theory, and these particles are also the real potential of everything in the universe.)

(m) in the Zero-Void Force formula is the intrinsic mass of indivisible and irreducible M particles, which lie at the mass scale of M particles ($\approx 1.77 \times 10^{-420}$ kg).

(In general, the letter m in the formula ($Z = m / v$) of the Zero-Void Force represents mass.)

Explanation of the letter (v) in the formula ($Z = m / v$)

(The letter v) represents volume, or the infinite volume of Absolute Zero Void (volume of void).

(The letter v) represents the volume of the completely empty space amid the arrangement of Primary M particles,

or the same infinite and unbounded volume of Absolute Zero Void (volume of void).

(The letter v, meaning volume, is in another sense the representative of the volume of completely empty void, or the volume of Absolute Zero Void.)

(In general, v is the representative of volume in the formula.)

(The letter v = volume) indicates the volume of completely empty space, without the presence of any particle, any quantum fluctuation, or any energy, in the equation of the Zero-Void Force and the Z-Force.

(Also, in geometry and mathematics, v is the same Absolute Void, the zero point of the coordinate axes of all locations; that is, the intersection point of the three coordinate axes x.y.z at the zero point of the location coordinate axes.)

(The letter v means Absolute Zero Void, which has no intrinsic force of its own, but is always placed opposite M particles, which represent the real potential of everything; therefore v represents Absolute Nothingness, or the real Potential Difference.)

(v = the volume of the absolutely empty void amid the arrangement of spherical Primary M particles.)

Very Important Note: There are always two types of vacuum in the universe:

1.Relative Vacuum:

Relative Vacuum exists in interstellar space, between atomic particles, and between subatomic particles, and it contains a very large amount of quantum and energetic fluctuations...

That is, Relative Vacuum, whether in interstellar space or amid the arrangement of atomic and subatomic particles, is always faced with many fluctuations of Primary M particles, as well as atomic and subatomic particles such as quarks, and fundamental particles such as photons and electrons.

2.Absolute Zero Void:

Absolute Zero Void exists amid the arrangement of spherical M particles, and within it there is absolutely no particle, no energy, and no quantum fluctuation of any kind...

In other words, Absolute Zero Void amid the arrangement of spherical M particles is Absolute Nothingness itself...

In general, Absolute Zero Void, or Absolute Nothingness itself, is found only in two places: first, in the substrate of Primary Invisible Space, amid the arrangement of Primary M particles; and second, as a singularity at the center of every black hole.

Important Note:

These two types of vacuum always have a fundamental and existential Potential Difference with each other, and this causes the Z-Force ($Z = m / v$) to always remain non-zero and active.

The mechanics of the Z-Force always operates actively and dynamically in both types of vacuum, whether Absolute Void or Relative Vacuum, and it always remains active...

Explanation of the letter (Z) in the formula ($Z = m / v$)

(The letter Z) indicates and represents the First Force of Nature and is the written abbreviation of (Zero-Void Force)

in the Zero-Void Force formula, or the same Z-Force, which is the first motion and the first force that appears in the universe.

(Zero-Void Force z, the mother of the four known fundamental forces of physics, or the initiator of all motions,

is itself born from the Fundamental Potential Difference within the mass-volume relationship in the universe.)

(When M particles and Absolute Zero Void are placed beside one another, they create the Fundamental Potential Difference called the Z-Force, and the letter Z in the formula represents this very force, namely the Z-Force.)

(Z-Force) is the first fundamental force of the universe, which naturally arises from the Potential Difference between the mass and volume of the universe...

The Natural Mechanics of the Zero-Void Force (z) are the source from which the four known fundamental forces of physics arise,

that is, gravitation, electromagnetism, the strong nuclear force, and the weak nuclear force.

This primary motion, or the fundamental Z-Force, arises from the Statistical and Mathematical Potential Difference within the relationship between mass and volume of the universe; that is, the mass (m) of Primary M particles and the volume (v) of Zero Void.

(Complete Explanation of the Zero-Void Force Formula ($Z = m / v$))

(Z-Force) is directly the result of the Statistical and Mathematical Potential Difference within the natural relationship between the mass (m) of Primary M particles and the volume (v) of Absolute Zero Void.

((The letter Z means that all known forces of physics and all types of motion are born from the Fundamental Potential Difference within the relationship between the mass and volume of the entire universe...

that is, no intrinsic force exists in the universe, and all known forces of physics are the result of the Potential Difference of the mass-volume relationship.))

Z-Force (Z) is always equal to the proportional ratio of the mass of Primary M particles (m) to the volume of Absolute Zero Void (v),

which is shown in Zero-Void Force Theory as the mathematical formula ($Z = m / v$).

((The Z formula ($Z = m / v$) is the universal engine of motion in all cosmic times and places.))

That is, the natural mathematical and statistical proportional ratio of the Z-Force always regulates and defines the degree and manner of the Fundamental Potential Difference among the real densities of all forms of the universe,

and it mathematically and precisely determines the mechanics of all particles and known forces, as well as the way all states of energy and matter are formed, and explains the form they take.

In general, in nature and in physics, the first, most important, and most fundamental existential nature is mass...

That is, if mass is removed from anything or from any equation, that thing, or that equation, completely loses its existence and being, turns into nonexistence and nothingness, and is no longer measurable or examinable.

The second fundamental nature, which appears after the main element of mass as a factor, is volume...

that is, the same volume that the mass has,

or the same volume that the mass occupies in space...

Therefore, in nature and in the exalted science of physics, we are always dealing with one main element and two fundamental calculational factors, namely mass and volume; and both of these factors always point to the nature of one important thing: mass.

Mass has always been, and will always remain, the most fundamental element in all infinite places and spaces...

that is, mass represents existence, or indicates the being of everything...

in the sense that the only intrinsic nature of nature is mass.

The intrinsic mass of Fundamental M particles always has a spherical and ideal state...

For this reason, these particles also have a complete, definite, fundamental, and intrinsic volume.

When these Fundamental Primary particles are placed beside one another,

the completely empty space amid their arrangement comes into being, and this completely empty space is the same Absolute Zero Void.

This Absolute Zero Void is measurable only through one fundamental factor, namely volume.

When these two main factors of nature, the mass of Fundamental M particles and the volume of Absolute Zero Void,

are placed beside one another,

they form the first and most fundamental Potential Difference of the universe

and create the Fundamental Potential Difference between different levels of placement in location...

In other words, M particles and the Absolute Void amid their arrangement form a Fundamental Potential Difference

within the statistical distribution of particles in the mass-volume relationship,

and this Fundamental Potential Difference sets in motion the primary motion of M particles and then the motion of the entire cosmic contents

in the form of the Zero-Void Force, namely the Z-Force...

In general, no particle and no physical nature in the universe possesses motion or intrinsic force of its own...

and all known forces are themselves the product and resultant of this same Fundamental Potential Difference...

with this precise explanation: Absolute Zero Void and Primary M particles also have no motion, or intrinsic force, of their own. But when these two fundamental factors are placed beside each other, the first motion, or the first fundamental force of the universe, comes into being...

In other words, energy is the same mass in fundamental dimensions and at the very small scales of fundamental particles...

That is, the primary and intrinsic nature of energy is the same mass of Fundamental M particles, which appears in different forms and with different arrangements.

Energy is not something separate from mass; rather, it is the mass of Primary M particles appearing at different scales, with different speeds, arrangements, and degrees of compaction, as kinetic, potential, electromagnetic, nuclear, and even dark energy...

At the most fundamental level, what we know as energy is in fact the mass of M particles in infinite number, placed in a state of motion, vibration, or a particular arrangement...

Therefore, energy is not an independent nature separate from mass; it is only another manifestation of that same mass of Primary M particles at different scales.

When we say that energy exists, in truth we are speaking about the mass of Primary M particles, which are the existential nature of everything, and these particles are always changing their arrangement, motion, or state of compaction...

For this reason, in Zero-Void Force Theory, we regard the mass of M particles as the most fundamental existential element of the universe, and we consider energy to be one of the natural and derivative manifestations of mass...

That is, without mass, nothing will have an existential and measurable nature, not even energy.

In another interpretation, Einstein's famous equation $E = mc^2$ shows that energy itself is one of the manifested forms of mass and matter...

In this equation, m represents rest mass,

meaning the amount of intrinsic mass that exists even when the body is at rest...

That is, energy is equivalent to visible matter and has a mass-based existential nature...

In other words, energy is not something separate and independent from mass...

rather, it is the mass of Fundamental Primary M particles that appears as energy at different scales, with different speeds, arrangements, and degrees of compaction...

Therefore, energy always has a mass-based nature, and without mass it has no independent existence and no measurable intrinsic nature.

By impossible assumption, if we remove mass m from Einstein's equation $E = mc^2$...

that is, if we reduce or remove mass, which is the same energy, and which has appeared in the form of visible matter, from the formula...

then no visible matter will remain for us to see or measure...

that is, mass in Einstein's equation also shows the existential property of matter and energy...

In the end, what we know as energy, at its most fundamental level, is the same mass of Fundamental Primary M particles

which are in a state of motion, vibration, or compaction, so that finally they show themselves to us as energy and matter.

"In the fundamental science of geometry, if something has no mass, it has no true and intrinsic observable existence,

and it does not even have an existence that can be drawn or imagined...

That is, mass is the boundary between being and non-being, or the boundary between existence and non-existence."

After the discovery of more subatomic particles and the discovery of large amounts of dark matter and dark energy in the universe, calculations in problems of physics continually showed a tendency toward infinity...

For this reason, in order to avoid the phenomenon of infinities in physical calculations, over the past 100 years scientists have continually defined conservative definitions and scales for quantities such as energy, so that physical problems could be solved more easily...

definitions that are unnatural and are not rooted in the true whatness and real existential nature of energy and matter...

For example, in today's physics we do not have a precise definition of the whatness, or the existential nature, of what constructs energy or photons...

and we continually avoid directly facing the infinite quantity of energy in the entire universe...

But Zero-Void Force Theory and the Z-Force equation ($Z = m / v$) have no problem with infinities...

On the contrary, infinities in this equation act in a completely scalable and natural way...

The reason for this beautiful mechanics is that the Z-Force formula works with the real existential scales and foundations of nature...

that is, it works with fundamental scales such as mass and volume, which are completely rooted in the existence or non-existence of particles or any other body in nature...

These natural and fundamental scales of the Z-Force, namely mass and volume, are real and existential scales in all times and places...

and, when placed beside one another, they create a natural and infinite Potential Difference throughout the entire universe...

For this reason, this equation is not only compatible with infinities...

rather, it accepts infinity as an intrinsic and scalable feature of itself and of nature...

whereas many equations of modern physics, when they reach infinity, continually encounter problems and are forced to use renormalization methods and conservative techniques in order to avoid it...

The Z-Force equation, with its existential foundation of mass and volume, contains infinity naturally and without contradiction, and explains all problems of physics with simplicity...

This precisely shows the superiority and fundamental simplicity of this natural mechanics:

the Z-Force resolves all problems not through mathematical imaginings, but through the existential reality of nature, namely mass and volume...

That is, in all places and all times of the universe, ($Z = m / v$) is, and will remain, valid...

Why do the Fundamental Potential Difference and the primary motion of the universe have their root in the mass-volume ratio?

In general, the primary Fundamental Potential Difference and the mechanics of all known types of Potential Difference in physics

are rooted in the variable density of energy and matter and in the proportional ratio of the two fundamental elements of the universe, namely mass and volume...

In the formula ($Z = m / v$) of Zero-Void Force Theory as well, the Fundamental Potential Difference of the universe arises from...

the mass of Primary M particles, mass (m), which represents the existential nature of matter and energy...

that is, without mass and the volume it occupies,

no particle and no physical equation has any conceivable existential or physical property...

In contrast, the volume of Absolute Zero Void, volume (v), indicates completely empty space and the absence of mass...

Whenever Primary M particles are placed in a space,

a natural imbalance is created between existence = mass and non-existence = the absolutely empty volume of Zero Void.

This imbalance is precisely the Fundamental Potential Difference that is considered the source of all motions and forces in the universe.

Therefore, it can be observed very simply that all known types of Potential Difference in physics

are rooted in the different densities of matter and energy...

that is, high-density energy always tends to fall and spread toward lower-density and more dilute energy...

This principle is true not only in Zero-Void Force Theory, but also in all known types of Potential Difference in physics.

All physical Potential Differences ultimately return to mass, or its equivalent energy, and to the volume it occupies:

Gravitational Potential Difference is rooted in the mass of two bodies and the distance between them.

Electric Potential Difference arises from electric charge, which itself is composed of particles that possess mass.

Chemical and nuclear Potential Differences are also calculated on the basis of binding energy and mass density.

Even in the quantum vacuum, the observed energy is equivalent to mass, which always has a large Potential Difference with particles and dense matter ($E = mc^2$).

In fact, every field of energy in the universe comes into being from the different density of the mass of the particles related to that same field...

and different fields with different densities naturally have a density Potential Difference with one another, and these Potential Differences are the source of all motions and forces in the universe.

In other words, all known types of Potential Difference in physics, gravitational, electric, nuclear, and so on, ultimately have their root in the different densities of energy and matter...

that is, in their most fundamental state, they continually follow the proportional ratio of mass and volume ($Z = m / v$).

In general, without mass, or its equivalent energy, which is the concept of existence and physical existing for all particles and bodies,

every calculation and every physical equation becomes meaningless...

that is, the unit of mass and density is always the most essential existential element in every problem, formula, hypothesis, and theory...

with this precise explanation: removing mass and volume from any physical problem

is equivalent to removing the existential nature of that phenomenon or hypothesis...

Therefore, the mass-to-volume ratio ($Z = m / v$) is not merely a simple formula; it is the foundation and basis of all types of Potential Difference, all motions, and the engine that generates all known forces in the universe...

With this simple explanation, even the concept of Potential Difference in geometry means the Fundamental Potential Difference between different levels of particle placement relative to one another and relative to the void zero point of the coordinate axes of all locations...

and this always creates the most fundamental Potential Difference in nature.

Also, in Zero-Void Force Theory, this Fundamental Potential Difference of Nature is presented mathematically through the formula ($Z = m / v$) and is analyzed with scientific precision in a simple way.

Therefore, the mechanism of all particles, all forces, and all cosmic forms is first related to the amount of mass of that body and, ultimately, to the volume that body occupies.

Removing mass from any equation is equal to removing the existential nature of that particle, body, and matter...

For this reason, all physical factors are always dependent on the proportional ratio of m and v .

This simple mathematical and statistical ratio of nature is always the universal engine of motion and of the layer-by-layer formation of all particles and cosmic forms,

and the Zero-Void Force, through this simple principle, explains the unity of all components of the universe beautifully and in the simplest possible form.

1. The greater the ratio of mass (m) is than volume (v),

(the more intense and more concentrated the Fundamental Potential Difference between the mass and volume of the entire universe becomes).

That is, the Z-Force acts in a very concentrated, local, and bounded way, as in the strong nuclear force...

2. The greater the ratio of volume (v) is than mass (m),

(the broader but gentler the Fundamental Potential Difference between mass and volume becomes).

That is, in this state the Z-Force acts in a broader and wider way, as in the force of gravitation...

((The very important point about the mechanics of the Zero-Void Force formula is this:

the volume of Absolute Zero Void is always infinite and unbounded...

but mass, or the same Fundamental Primary M particles, although infinite in number,

always has an arrangement that can be bounded...

For this reason, the potential-difference proportional ratio of mass and volume in the formula ($Z = m / v$)

remains nonzero to infinity, and the Z-Force always remains dynamic and active.))

"The Zero-Void Force formula ($Z = m / v$), in all cosmic places and times,

acts like a universal engine of motion...

where the natural Potential Difference between the mass of Primary M particles and the infinite volume of Zero Void

sets the unlimited cycle of contraction and expansion of the universe into motion to infinity."

That is, the fundamental and primary force, Z-Force, is itself only the result of a simple and fundamental mathematical proportional ratio within the relationship between the fundamental mass and fundamental volume of the entire universe...

and in all places and all times, this primary Fundamental Potential Difference is always present and active...

With this precise explanation: this natural statistical imbalance between the infinite arrangement of Primary M particles

and the infinite and unbounded volume of Zero Void

always creates, at the most fundamental level of the universe, a permanent and natural Potential Difference among fundamental particles in the form of motion, or the Primary Force of the universe...

and in this book, for the first time in physics and mathematics, it has been formulated mathematically and statistically as ($Z = m / v$).

Therefore, in both states of the relationship between the fundamental mass and volume of the universe, Z-Force remains nonzero and remains active and dynamic to infinity:

First State:

The greater the density of particles in a region of location is, meaning the larger m is relative to v , the more intense the Fundamental Potential Difference becomes, and the Zero-Void Force acts more strongly and more locally concentrated...

In simple language:

the greater the density of Primary M particles, or subatomic particles, or fundamental particles in a region of space becomes,

the denser the bodies that come into being, and the stronger and more concentrated the Zero-Void Force acts through the synergy of the curvature of space...

Second State:

The greater the available volume of Zero Void becomes relative to the density of Primary M particles, or all particles,

meaning the larger v is relative to m , the greater dark energy and scattered gas clouds in space become,

and the Zero-Void Force acts more widely but more gently, like the force of gravitation and cosmic expansion...

In simple language: the more empty space there is amid the arrangement of Primary M particles in space, meaning the lower the density,

the more the Z-Force still remains active, but acts in a very wide and expansive way, like gravitation...

The important point in the mechanics of the Zero-Void Force formula ($Z = m / v$) is this: in every state of the universe,

meaning in micro states such as subatomic particles and in macro states such as galaxies,

Z-Force always remains nonzero and active...

and the reason is this important point: the volume of Absolute Zero Void remains infinite and unbounded...

That is, in no state can Absolute Zero Void be completely bounded in the entire universe,

while, in contrast, the arrangement, or the density, of Primary M particles is always boundable...

meaning that by changing the type of arrangement of Primary M particles, from a dispersed arrangement to a compact arrangement, the mechanics of the motion of these particles also changes...

Therefore, the two always-changing factors of the formula ($Z = m / v$) can never produce the number zero as the result of the formula...

That is, the two main elements of the formula m/v act like the two pans of a cosmic scale...

as soon as the value of volume changes, it immediately changes the value of mass,

and as soon as the value of mass changes, the value of volume also immediately changes...

And these two factors of the formula are never one hundred percent balanced with each other...

As a result, the infinite cycle of Fundamental Potential Difference forms in the universe,

and it guarantees the motion of all particles and bodies without limit...

"In the closest approximation, this Fundamental Potential Difference preserves a 2 percent asymmetry in the appearance of cosmic forms..."

This 2 percent asymmetry in cosmic forms, which is known as the natural state of forms,

always makes every form more beautiful and more unique than every other form throughout the entire universe."

This fundamental potential-difference force (z),

meaning the always unbalanced and variable relationship between cosmic mass and cosmic volume,

never reaches one hundred percent equilibrium in statistical mathematics...

because Primary M particles and Absolute Zero Void always have a Potential Difference between their levels of placement in location and space...

with this precise explanation: mass, at whatever scale it may be, is placed at higher levels of the spatial coordinate placement than Zero Void,

and this relationship precisely shows the Fundamental Potential Difference between the different levels of particle placement in space...

That is, in all places and all times, the intrinsic potential of everything is the same m , or the same Primary M particles,

and it always has a natural Potential Difference with Absolute Zero Void v ...

With this precise explanation: the two important mathematical factors, mass, meaning m , and volume, meaning v , are always in a fundamental and intrinsic opposition to one another, and they are always in a natural and unlimited Potential Difference with each other...

(That is, the permanent and fundamental Potential Difference between the two numbers zero 0 and one 1 in mathematics.)

As a result, Z-Force always remains nonzero,

and the eternal cycle of motion, or force, begins from the infall of Primary M particles toward Zero Void and becomes the layer-by-layer formation of subatomic particles, atomic particles, energy, and matter...

and it causes the four known fundamental forces of physics to be produced step by step and layer by layer at different levels of energy fields...

In Zero-Void Force Theory, the formula ($Z = m / v$) always indicates the Fundamental Potential Difference between the mass of Fundamental Primary M particles (m) and the volume of Absolute Void (v)...

Whenever this ratio increases sharply in one region, for example through the intense densification of matter, the system reaches a more unstable state and the Z-Force becomes stronger...

Explanation of the Critical States in the Z-Force Formula:

In a state of very high density, meaning a large mass in a small volume, as in supernovae, the effective volume v is locally reduced very sharply inside the dense body...

while the amount of mass m remains relatively constant, or even becomes greater...

The result is that the value of Z becomes extremely large ($Z \gg 1$).

This very large Z creates a very large void outside the dense body:

the saturated system can no longer hold more mass within the same small local volume...

At this moment, mass has reached its greatest accumulation in volume,

and the total volume of the internal void of the body has become smaller than the outer void of the body and has become critical.

The locally accumulated mass suddenly tends to move toward the larger volume of the outer void (which, during the process of matter condensation, had continually grown larger).

In other words, instead of tending to fill the smaller central void amid their arrangement,

particles tend to shift toward the outer void, which has now become larger...

until Z returns again to more balanced values, close to the cosmic average of the mass-volume relationship.

This moment, when the direction of particle motion reverses, after first being toward the central void of the dense body and now becoming toward the larger outer void of that same body,

is precisely the moment of collapse of dense cosmic bodies such as supernovae...

The critically condensed matter suddenly decomposes into its constituent particles...

Energy and mass are released, and the materials that formed the local dense body are scattered, in the form of an explosion of atomic and subatomic particles, into the space filled with outer void...

In other words, all explosions are nothing but

the moment of the infall of particles toward an outer void larger than the inner void of the dense body...

This process is exactly what we call the "explosion" and "collapse" of stars in astrophysics...

But in the Z-Force, this process is a natural statistical mechanism for the sudden spreading of compacted particles and the return to ever-greater equilibrium in the mass-volume relationship, not an external force or a probabilistic accident that causes stars to explode...

In summary:

Whenever m crosses the critical threshold of the density of its volume ratio,

the statistical system of cosmic mass and volume acts in reverse; instead of compressing the body further, it decomposes and transforms that same dense body into the most dispersed state possible, Primary M particles moving toward the wider outer void,

until the percentage and degree of equilibrium in the statistical distribution of cosmic space rises again...

"This mechanism precisely explains why, after the collapse of a hypernova,

the Absolute Void of the central zero point of the star appears as a Super Absolute Void of singularity in a phenomenon called a black hole."

The mechanics of the Zero-Void Force formula ($Z = m / v$) always uses the fixed and precise mass of Primary M particles at the scale of M particles to calculate the fundamental density of all forms of creation with precision, and it continually preserves the equilibrium of the universe.

This simple formula of nature explains the complex definitions of quantum mechanics for atomic and subatomic particles in a very simple and publicly understandable form.

In other words, Z is no longer only a simple density number...

Rather, it calculates, at every moment, the Fundamental Potential Difference of each body with another body, and the Potential Difference of each body with the entire universe, and as a result the formula shows this as the Z value,

and it predicts the motion, speed, and interaction of every body with other bodies of the universe part by part.

Because of the simplicity of the mass-volume relationship, the universe, through the mechanics of the Zero-Void Force, explains the properties of all particles and all cosmic forms in a natural, simple, and unified way...

The higher the density of Primary M particles in a region of space becomes, meaning large m and very small v , the stronger Z -Force becomes, and Primary M particles enter a compact and more stable state, such as atomic and subatomic particles, energy, and superdense matter such as neutron stars...

The lower the density of Primary M particles in a region of location becomes, meaning v is much larger than m , the broader but gentler Z -Force acts, and it produces subatomic particles and the primary dark energy of the universe...

That is, in this fundamental state, a broad infalling flow of particles occurs toward the void outside dense bodies in order to balance Fundamental Primary Space...

High density = small v , large m = strong short-range force = compaction and stability of bodies and contraction (dominant attraction phase of the flow toward the inner void).

Low density = large v , small m = broad gentle force = dispersion and expansion (dominant repulsion phase, or flow toward the outer void).

Considering the explanations above, we will know that all four known fundamental forces of physics, namely gravitation, electromagnetism, the strong nuclear force, and the weak nuclear force, are simply other scaled manifestations of the Zero-Void Force Z at different levels of energy and matter density ($Z = m / v$).

"The intrinsic imbalance between the mass and volume of the universe, namely Z-Force, always creates, in Invisible Space and Visible Space as well, an unstable Potential Difference between energy and matter,

which sets in motion an eternal cycle of particles, energy, and matter,

and this automatic fundamental force also determines and shapes all forms of the universe layer by layer...

This infinite cycle of the manifestation of physical and geometric forms in nature

begins through the always-unbalanced relationship between mass and volume, namely the mechanics of the formula ($Z = m / v$),

and through the accumulation of Primary M particles in a confined location, it reaches the formation of visible superdense energy and matter;

and finally, with the help of the Super Void at the center of black holes and the supermassive accretion ring around the central void of the black hole,

it decomposes all forms of the universe at the event horizon into Primary M particles, and in order to create greater equilibrium in the mass-volume relationship,

it returns all fundamental particles again to Invisible Fundamental Primary Space...

Unlike the Standard Model, which defines known forces such as gravitation, electromagnetism, and the nuclear forces separately,

Zero-Void Force Theory (Z) regards the fundamental mechanics of all four forces together and as one, within the framework of the Potential Difference between particles, meaning mass, and Absolute Void or Relative Vacuum as volume,

and proves it simply through the Z-Force formula ($Z = m / v$)...

That is, all known forces, and even unknown forces, have originated from the simple and natural mechanics of the Zero-Void Force Z ...

In simple language, all four known forces, in their depth, have the same potential-difference structure arising from the relationship between mass and volume, and they use this mathematical and natural relationship to produce motion and force...

Likewise, one of the key aspects of the beautiful Z-Force Theory is its explanation of the logical and real structure of black holes and galaxies.

That is, unlike traditional models of physics, which assume a superdense supermass at the singularity of a black hole,

Zero-Void Force Theory proves that at the singularity at the center of every black hole there exists a Super Absolute Zero Void...

and this time, the superdense supermass of the black hole, which has caused the curvature of galactic space, has shifted to the superdense accretion ring around the central Super Void of the black hole...

That is, in reality, it is this Super Void of the black-hole singularity which, with the help of the superdense and supermassive accretion ring around it,

has created an enormous mass-volume relationship that has curved Visible Space all the way to the edges of galaxies...

(With this precise scientific explanation: all particles, energy, and matter always have an intrinsic tendency to fall and fill the lowest point and level of space, not to fall toward the most massive body in space.)

That is, all types of particles, energy, and matter, statistically and mathematically, always flow toward the lowest point of space, meaning the Absolute Void at the zero point of the coordinate axes of all locations,

and their accumulation in this confined location causes dense cosmic bodies to come into being, then causes space to become more curved,

and causes the Zero-Void Force to grow stronger exponentially...

In the fundamental theory of the Zero-Void Force, the fundamental cosmic relationship between mass and volume is the natural Potential Difference between

the Zero Void of the black-hole singularity (v) and

the superdense ring around the black hole, meaning (m),

which, finally, at the event horizon of black holes, decomposes 99 percent of the compressed energy of galaxies into Primary M particles,

and in this process only 1 percent of the energy of the accretion ring can escape from the accretion ring of black holes in the form of light and radiation.

Ultimately, at the end of the book Zero-Void Force, we will reach the conclusion that galaxies are in fact mature black holes whose mass extends all the way to the edges of galaxies...

That is, it is black holes that build the enormous disks of galaxies through the Super Void of their singularity...

with this explanation: the potential-difference mechanism between mass and volume in galaxies,

within a continually repeating cycle,

creates different types of energy, matter, and cosmic forms in the distant and middle points of galactic arms,

and finally decomposes and recycles all the matter and energy of the entire galaxy into Primary M particles at its own black-hole center...

and in the end, it returns all Primary M particles that construct all cosmic forms, in their raw primary form, to Invisible Primary Space,

in a more balanced form in terms of mass and volume...

so that, by recycling condensed matter and energy into non-condensed fundamental particles at the event horizon,

it once again makes the relationship between the mass and volume of the entire universe and Invisible Fundamental Primary Space more balanced

in terms of the arrangement and statistical distribution of the mass and volume of particles...

That is, by decomposing visible energy and matter into Primary M particles, black holes continually rebuild Invisible Fundamental Primary Space in terms of statistical arrangement and make the fundamental primary structure and space of the universe more ordered and more balanced.

In the beautiful and infinitely symmetrical Zero-Void Force Theory, the information of the formation and death of all types of particles and countless forms built in galactic disks is never completely destroyed in black holes...

Rather, before the different forms of galaxies reach the event horizon of black holes and are decomposed into Primary M particles,

the light reflected from these forms, from all angles of each form,
 records a complete copy of the three-dimensional structure and information of how all cosmic forms begin to form, how they live, and how they ultimately disappear,
 and transmits it throughout the distant universe as three-dimensional luminous and visual information.
 With this precise explanation: only the material nature of information, meaning physical and geometric forms, is decomposed and destroyed in black holes...
 But before the complete decomposition of material forms into Primary particles in black holes, countless three-dimensional luminous copies of the information of the formation of all forms have been transmitted and spread throughout our infinite universe in the form of light and image...
 For this reason, today we see images of galaxies that

billions of years ago were decomposed into fundamental particles and completely evaporated,
 and their material and apparent state no longer has external and physical existence...
 but the luminous and visual copy of the information of these very ancient galaxies is continually reaching us now,
 and we have complete luminous and visual access to the information of the formation and the manner of disappearance of these galaxies...
 It seems that the mechanics of light reflection in the universe
 is such that it continually scans an infinite number of luminous copies and three-dimensional images of the stages of formation and disappearance of all cosmic forms
 through light and electromagnetic waves,
 and transmits them as three-dimensional luminous information to countless locations in the distant universe, from all angles of the universe...
 With this precise explanation: these luminous reflections are reflected from all angles of a body in three dimensions,
 and they create, at every moment, a state of three-dimensional and holographic scanning of the visual information of particles and forms; at the speed of light, they transmit it to all angles of the universe at every moment, and through this mechanism produce a state of immortality of information throughout the entire universe and even throughout the metaverses...

The Concept of Statistical Distribution in the Mechanics of the Mass-Volume Relationship of the Z-Force:

In Zero-Void Force Theory, statistical distribution means the type of arrangement and degree of dispersion of Primary M particles (m)

relative to Absolute Zero Void (v) in Invisible Fundamental Primary Space.

In simple language:

Primary M particles exist in infinite number in the universe...

but their arrangement also has the capacity to become more bounded and to undergo configurational compaction in more confined spaces.

Statistical distribution means the way these particles are placed and dispersed relative to the infinite volume of Absolute Zero Void,

in such a way that the mass-volume relationship ($Z = m / v$) is calculated and made more balanced at every moment.

(Direct Relation with the Formula ($Z = m / v$))

Statistical distribution is precisely what determines the value of Z at every moment and at every point of space:

$$(Z = m / v)$$

The more imbalanced the distribution of Primary M particles (m) is relative to Absolute Zero Void (v), the more the local Z increases, and the stronger the Zero-Void Force acts...

Statistical distribution is the heart of the concept of the Potential Difference between mass and volume and of the precise mechanics of Entropy in Zero-Void Force Theory.

That is, the collapse of dense bodies and their decomposition into Primary M particles is in fact the effort of the universe

to return the statistical distribution of Unified Primary Space to a more homogeneous and more balanced state.

This process is the same thing we know by the name Entropy, or disorder...

But from the perspective of the Zero-Void Force, this phenomenon is a return to a more fundamental and more balanced statistical order of the mass-volume relationship

in Invisible Fundamental Primary Space...

Zero-Void Force Theory not only gives a precise and logical explanation of the unification of all known forces...

It is not limited to cosmic scales either...

and it can also give a precise scientific and mathematical explanation of the quantum mechanics of particles at atomic and subatomic scales.

That is, the Z -Force formula ($Z = m / v$) is also the Mother Formula of Physics,

which all scientists have been seeking to discover for years...

that is, the same natural and eternal Potential Difference within the relationship between the mass and volume of the entire universe in all infinite places and times, which causes the motion and formation of all forces and countless cosmic forms...

The Mechanics of the Z -Force in All Types of Voids, Relative Vacuum or Absolute Void:

One of the very important and powerful features of the mechanics of the Z -Force is that it does not even need Absolute Void to produce motion, or force.

The mechanics of the Z -Force, with Relative Vacuum, meaning vacuum filled with quantum fluctuations, virtual particles, energy, and so on, also shows exactly the same mechanics of motion production as Absolute Zero Void,

and it creates exactly the same motion events at all levels of energy and matter.

In other words, whether there is Absolute Zero Void, meaning Absolute Nothingness,

or Relative Vacuum, meaning the fluctuating space among atomic and subatomic particles, or even emotional, financial, and social voids,

the existence of any kind of void is enough for a Potential Difference to arise between the levels of being and non-being, and for motion and flow to occur in order to fill that void...

with this real example: human beings always move and make effort in order to fill every kind of material, spiritual, mental, or financial void.

This Fundamental Potential Difference between different levels of energy and matter, and between different levels of particle placement in space, always causes motion, dynamism, and rebalancing within the mass-volume relationship of the entire universe.

Therefore, Z-Force ($Z = m / v$) is a fundamental law, and it acts correctly and naturally in every kind of void, whether absolute or relative.

(The most astonishing calculation of the Zero-Void Force formula is the truth that

the smallest motion of a Fundamental M particle, or even of a very small body,

has an instantaneous effect on the potential-difference value of the relationship between the mass and volume of all existence and on the Z-Force formula ($Z = m / v$).

That is, all infinite cosmic components, without delay and without any passage of time,

are in direct motion-unity and timeless connection with one another at the fundamental level of the universe.)

In simple language:

In the fundamental formula of the Zero-Void Force ($Z = m / v$), the relationship between the mass (m) and volume (v) of the entire universe always acts like the two pans of a cosmic scale...

That is, whenever one of these two pans of the scale moves by a tiny amount,

the opposite pan also moves in the opposite direction without any passage of time, and it shows the amount of change precisely and directly in the numerical result of the Z formula...

With this precise explanation: when a Fundamental M particle, meaning the smallest possible unit of mass in the universe,

performs a small motion anywhere in existence and is displaced, or when its vibration changes,

this small change immediately and without any temporal delay has an instantaneous effect on the final result of the mass-volume relationship in the formula ($Z = m / v$), and it changes and updates the number z in the formula without delay.

Why without delay and without any passage of time?

Because in the Z-Force formula ($Z = m / v$), the total volume of Zero Void (v) and the total mass (m) in the formula always act as global and unified quantities, like the two pans of a scale...

That is, at the fundamental level, the universe is a fully connected and unified statistical and mathematical system...

and there is no boundary, no distance, and no limiting speed, not even the speed of light, between the components of this relationship.

These estimates mean that:

Every Fundamental Primary M particle, at every moment, is in direct and instantaneous motion-connection with all other small and large particles and with the entire cosmic energy and matter...

That is, the motion of the smallest component affects the whole universe.

The smallest motion-change in a particle updates the final result of the Z formula and the Potential Difference field of the entire universe without delay.

This connection is established not through the transmission of a signal or a wave, but through the nature of Unified Fundamental Primary Space

and through the coherent configurational connection of Fundamental Primary M particles with one another.

Final Words

The Zero-Void Force Theory and its natural and beautiful formula, $Z = m / v$, with its unparalleled simplicity, not only introduce the primary force of nature, namely the Z-Force, but also provide a very simple scientific solution to the greatest unresolved problems of physics.

This theory shows that nature governs the entire universe through only one very simple principle: the relationship between mass and volume. That is, at the most fundamental state of existence, it is the Potential Difference between being and non-being that produces the greatest and strongest motions and forces.

In this article, we learned that existential particles are the smallest possible intrinsic and indivisible masses in existence, which, through their own existence, have also given rise to existential space and caused the emergence of motion, time, matter, and all the complex forms of the universe.

Through a correct analysis of the Zero-Void Force Theory, we will ultimately understand that all objects and celestial bodies intrinsically and automatically move toward emptier regions, or toward any kind of Absolute or Relative Vacuum in any kind of space, so that the statistical distribution balance between mass and volume is naturally optimized at every moment.

The fundamental principle of the mass-volume relationship in the Zero-Void Force Theory not only unifies the four known forces of physics, but also integrates and unifies the previous theories of physics within the fundamental formula $Z = m / v$, opening a new gateway toward understanding the deeper unity of all components of existence and the infinite beauties of nature.

That is, the Zero-Void Force is the Mother Formula of Physics and, through its simplicity and infinite scalability, can provide a complete and natural answer for solving all problems of physics.

That is, the Z-Force is infinitely beautiful, simple, and natural: $Z = m / v$

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