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RESEARCH ARTICLE

THE ROAD TO CALCULUS REFORM?

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Abstract

The concept and method of calculus reform are put forward. The calculus function is defined as a set of infinite multiplications that are not repeatedly combined and synchronized with the order value and term order. Central to the proposed calculus reform is the "mathematical combination (group)" process. Prove its characteristics of equivalence, symmetry and asymmetry, unit (quantum), isomorphic consistency, normalization, parallel / serial computing. The logarithm is established based on the characteristic pattern of real infinity (the average of the positive, neutral, and inverse functions), which is called the circular logarithm. Obtain the unity of "open and closed", "discrete and entangled", "probability and topology", "sphere and ring", and map to the logarithmic equation calculation of circle in closed [0 to 1] infinite arithmetic. For mathematical relativity.

Introduction:-

Statement of problem: Why should traditional calculus be reformed?
The focus of contemporary mathematical reform is to see who can reform any higher-order calculus equation. Why did you say that?

Arbitrary higher-order calculus equations are represented by "spheres and rings,""quantum and relativity," and "calculus equations and pattern recognition." This irreplaceable choice has contradictions that cannot be resolved.

This contradiction has become the yoke of scientific development. Such as:
Real infinite symmetry calculations: such as discrete calculations, big data, quantum theory and other mathematical foundations are not solid
Calculation of latent infinite asymmetry: such as: entangled calculation, calculus equation, interaction of natural forces, generation

State analysis, artificial intelligence, relativity, etc., there is no satisfactory algorithm. Scientists have proved with a large number of experiments and facts that microscopic particles and macroscopic vacuum condensed states and the human brain are inseparable, and they have the same commonality.

For centuries, logarithms, calculus, number theory, and group theory have held absolute central positions in the field of science. However, in the development of science, there are close links and constraints between various scientific fields and mathematics, mathematics and mathematics. Faced with new scientific problems, traditional mathematical analysis and discrete statistics are powerless. Mathematical reform usually involves solving problems and asking a

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series of mathematical problems. In the history of mathematics, it is no longer possible to describe the new world in as many types and frequently as in the 18th-19th century. Because contemporary mathematics is already fused with each other, it is difficult to distinguish clearly. The result: "Either it doesn't work, if you find a good algorithm, you can solve it." The core is how to unify "real infinity and latent infinity." In other words, "infinite calculations require uniform calculations within a limited range."。

American astronomer Mario Livio states in Mathematical Thinking, page 211: In 1931, the logical scientist Gödel pointed out the incompleteness of traditional mathematics: "Any form of system, including basic arithmetic, Neither can be proved or denied, which shows that the mathematical foundation is not solid. This shocked Hilbert's formal mathematical system, but Gödel's "incompleteness theorem" does not imply "the contradiction between proof and disproval." Is there compatibility? "

Many national research departments are exploring and proposing mathematical reform plans to "refactor" existing mathematical systems and establish a novel mathematical system. In terms of mathematical reform, China and the rest of the world are on the same starting line, to see who reaches the end first, maybe China.

Practice has proven that only calculus can be reformed and various mathematical algorithms can be summarized today. Can we clearly prove: "real infinity and latent infinity", "symmetric and asymmetric", "linear and nonlinear", "spherical and" donut "," radiation and rotation "," precession and rotation ", "Discrete and entangle" and integrate them into a formula. The logarithm of the circle or fulfilling Einstein's last words: "The world will eventually return in a" round "manner. "Mathematical Relativity" is expected to achieve the integration and termination of mathematics.

The road to reform of traditional calculus:

In the 20th century, the microcosm was the main task, and the amount of information in quantum methods has reached saturation. The famous physicist Li Zhengdao said: "It is estimated that in the 21st century, the main task is to develop macroscopic condensed matter. There is a lot of information in it. It is speculated that if we combine the micro and macro as a whole, there will be some breakthroughs. This breakthrough will affect the future of science. "Reflects that contemporary mathematical expressions have common ground and can be accepted by everyone in the algorithm, requiring higher-order calculus equations to have unlimited arithmetic operations. Therefore, calculus has become the center of modern science and mathematics reform.

Defects of traditional calculus:

The main concepts of traditional calculus are:

"Dividing an infinitesimal by an infinitesimal close to zero becomes the limit". The concept is unclear and reality does not exist. The fact is that according to the theory of relativity, dividing infinite small by infinite small has some abstract meaning. There is a real value between "0 and 1" and there is no such infinitesimal limit.

"Due to the uncertain multi-element multiplication combination, it is not possible to divide" a certain value "based on a certain number by the exact logarithm." Error analysis $\varepsilon \neq 0$ "for congenital defects is inevitable, only Can perform approximate calculations.

Although many algorithms have appeared in the history of mathematics, such as: functional analysis, finite element analysis, disturbance-free method, homotopy analysis method (HAN), etc., although small physical parameters are not required, nonlinear problems can be transformed into Numerous "linear sub" problems have finally approximated the approximate solution.

In the face of the above-mentioned calculus defects, it can be said boldly: In the existing calculus algorithms, in addition to the existing discrete complex calculations and incomprehensible logic calculations, any established power function (exp) path integration It is difficult to meet the "linear smooth expansion" and will not give an accurate solution of "zero error".

Creating novel calculus:

Adopt the theory of mathematical relativity, transform the old concepts that are not suitable for traditional logarithm, calculus, group theory, number theory, clarify its new "mathematical combination" and new concepts, realize mutual fusion and fusion, and establish novel calculus.

Propose a new definition of calculus: define calculus as continuous multiplication of infinite points, and perform a non-repeated synchronized combination set with calculus order values and term order. Divide the combination form of each sub-item by its corresponding combination coefficient to obtain the average sub-item of the characteristic pattern (mean of positive, neutral, and inverse functions) of the infinite program. "Set of terms" logarithmic function to ensure the quantum nature of each child of the element combination, and to achieve the integer "zero error $\varepsilon = 0$" expansion.

Strictly prove the symmetry and asymmetry of the reciprocity of the combination of each layer (order value, term order) of the feature module, and prove its quantum properties, isomorphism, relative symmetry and parallel computing capabilities to ensure Its combined logarithm "the average of itself divided by its totality of its own average" becomes an abstract potentially infinite "quadratic function" and maintains its probability and topological position, superimposed on any closure between "0 to 1"" Center-to-boundary ", so there is no such thing as" infinite small "and" limit "in traditional calculations. Meet infinite arithmetic operations.

These methods successfully overcome the shortcomings of traditional calculus, transform existing calculus concepts and calculus symbols, and naturally involve transforming the concepts and symbols of logical algebra. It is composed of infinite elements-polynomial-calculus-pattern recognition and is mapped to a circular logarithmic function. It brought a new life to calculus, called the novel calculus and circular logarithmic algorithm.

How to reform traditional calculus?
So far, there are many algorithms for higher-order calculus equations. Except for the discrete logic algebra of group theory, almost all are based on "fixed number-based logarithmic combinations". The approximation calculation of "error term $\varepsilon \neq 0$" cannot be eliminated. It is difficult to satisfy the smooth solution, or even not. There are no other good or satisfactory algorithms that have made substantial progress. The logarithm of the circle fulfills the heavy task of this history. The road of reform is put forward—open real infinity is placed in closed (0 to 1) to carry out latent infinite calculation.

Mathematical combination is closely related to the expansion of the calculus order and the series of the term order, that is to say, calculus is another expression of series. However, traditional mathematics proposes many methods for solving calculus, most of which do not distinguish the correspondence between initial conditions, boundary conditions, and independent variable combinations; nor do they clearly distinguish and understand the relationship between mathematical combination coefficients and calculus polynomial systems.

For example:
The original concepts of infinite calculus and limits are outdated, and logical calculations and symbols not only make it difficult to understand, but also increase the complexity and difficulty of computer programming. It is expected that the traditional four arithmetic operations will reappear.

Cannot solve any higher order calculus equations. Existing calculus calculations cannot handle any higher-order calculus equations formed by entangled one-dimensional or multi-dimensional homogeneous continuous multiplication combinations. Lack of computing power required for flexibility and accuracy.

One focus of the real problem: Under equilibrium conditions, can the result of the equation still maintain "symmetry" and "0"? (Imaginary number i) and complex variable functions are still necessary?

Answers to traditional calculus
The traditional calculus answers are: "must be 0" and "uniqueness". There is a difference between "real variable function" and "complex variable function" under the condition that the symmetric balance is "0". However, the complex function of the imaginary number "i" does not exist in the scientific field and in real life. There is "symmetry and asymmetry" at the same time. Under the condition of uncertain multi-element combination, traditional calculus is called finite "univariate S-dimensional" differential equations and partial differential equations. Calculus is difficult to resolve this uncertainty. Even the application of "logical algebra" can only perform symmetric calculations of discrete types, but not "asymmetric calculations of interactive entanglement types".
(1.1) $\{X \pm D\}^{(S/t)} = \{(x_1, x_2, \ldots, x_n) \pm (D_1, D_2, \ldots, D_n)\}^{(S/t)} = \{0\}^{(S/t)}$;

(B) Circular logarithmic answer

The logarithmic answer is "not necessarily '0'". They have two equilibrium conditions of "$\{0\}^{k(Z/t)}$and $\{2\}^{k(Z/t)}$".

(1.2) $\{X\pm D\}^{k(Z/t)}=\{(x_1,x_2,\ldots,x_n)^k\pm(D_1,D_2,\ldots,D_n)^k,\ldots\}^{k(Z/t)}=\{0,2\}^{k(Z/t)}$;

here,$\{0\}^{k(Z/t)}$and $\{2\}^{k(Z/t)}$ is an equilibrium condition, but there are two different states:

(1) Zero balance: $\{X-D\}^{k(Z/t)}=\{0\}^{k(Z/t)}$; This means that two points are infinite. $\{X\}^{(S/t)}$ and $\{D\}^{(S/t)}$ are balanced encircle (donuts) space or spins relative to the "center zero or eccentric zero" relative balance rotation. The physical manifestations are: the rotation of the double stars in the universe, the electron rotation of the atomic model, the asymmetry of the lever in mechanics, and the mathematical ring (circle). The equilibrium center point is the "virtual center".

(2) Huge balance: $\{X+D\}^{k(Z/t)}=\{2\}^{k(Z/t)}$, This means that two points are infinite $\{X\}^{(S/t)}$ and $\{D\}^{(S/t)}$
in a ball's geometric space and has a balanced precession. They have "center zero or eccentric zero" motion. The physical manifestations are: double planet rotation in the universe, electron rotation in atomic models, equilibrium symmetry in mechanics, and mathematical fields (curves, surfaces). The center point of equilibrium is the "real center".

(3) Combined balance: $\{X\pm D\}^{k(Z/t)}=\{0,2\}^{k(Z/t)}$; It means that two points are infinite $\{X\}^{(S/t)}$ and$\{D\}^{(S/t)}$is in the precession of balance (mathematics is a sphere state) plus rotation (mathematics is a torus state), which belongs to the combined movement of a torus (circle) and a sphere (body). They exist in parallel three-dimensional and 5-dimensional vortex space and Karabi-Qiu geometric space. Mathematics proves that these two states change synchronously and consistently.

Formulas (1.1) and (1.2) are difficult to solve in traditional calculus. The existing discrete statistical calculations are complicated for formula (1.1) using set theory and group logic symbols to emphasize the "symmetry" calculation procedure. Especially under the condition of infinite point interaction, the calculation of "linear and non-linear", "homogeneous and non-homogeneous", "ordinary differential equations and partial differential equations" of arbitrary calculus is more physical, mechanical, engineering, Computer programs and mathematical modeling make calculations difficult.

Here, it will be introduced that the characteristic module consisting of infinite points can be converted into a circular logarithmic calculus equation. A novel calculus equation was established by rigorously proving the famous Newton's binomial, giving new connotations. However, the mathematical skills used are simple and cannot be simpler. They have the level of high school students. They start with the one-level quadratic equation of junior high school students, and the subsequent calculation methods are the same.

A point infinite infinite characteristic model (positive, middle, and inverse function mean) with openness and a logarithm of the latent infinite circle in the closed "center-boundary" region are proposed to form the "unary or homogeneous（Z±S） element（S±N） times "calculus equation. Its key technology is power function and path integral (exp) processing as $K(Z/t)=K(Z\pm S\pm N\pm P)/t$ which is suitable for zero order of calculus, original function, pattern recognition; or consider micro $K(Z/t)=K(Z\pm S\pm(N\pm j)\pm(p\pm j))/t$when the integration order and term order change. Reasonably canceled the "imaginary number i" which has no practical significance, and integrated real variable functions, complex variable functions, ordinary calculus, partial calculus, and logical algebra together with their calculation symbols to meet the discrete and entangled types (Including the state of the sphere and the ring) a unified calculation method, called mathematical relativity or logarithmic circle algorithm.

(1.3) $\{X\pm D\}^{k(Z/t)}=Ax^{K(Z\pm S\pm N\pm 0)/t}+Bx^{K(Z\pm S\pm N\pm 1)/t}+\ldots+D^{K(Z\pm S\pm N\pm p)/t}$

$=(1/C_{(S\pm N-0)})^k x^{K(Z\pm S\pm N-0)/t}\pm(1/C_{(S\pm N-1)})^k x^{K(Z\pm S-N-1)/t}\cdot D_0^{K(Z\pm S+N+1)/t}+\ldots$

$\pm(1/C_{(S\pm N-p)})^k x^{K(Z\pm S-N-p)/t}\cdot D_0^{K(Z\pm S+N+p)/t}\ldots\pm D$

$=(1-\eta^2)^{K(Z\pm S\pm N)/t}\{0,2\}^{K(Z\pm S\pm N)/t}\{R_\odot\}^{K(Z\pm S\pm N)/t}$;

Real infinite feature module expansion

(1.4) $\{R_\odot\}^{K(Z\pm S\pm N)/tt}=\{X_0\}^{K(Z\pm S\pm N)/t}$

$=(1/C_{(S\pm N-p)})^k({}^{K(Z\pm S-N)/t}\sqrt{x^{K(Z\pm S-N-p)/t}})$

$=\{D_0\}^{K(Z\pm S\pm N)/t}$

$=\{D_0\}^{K(Z\pm S\pm N\pm 0)/t}+\{D_0\}^{K(Z\pm S\pm N\pm 1)/t}+\ldots+\{D_0\}^{K(Z\pm S\pm N\pm p)/t}$

$=\{0 \text{ or } 1\}^{K(Z\pm S\pm N)/t}$;

Latent infinite circle logarithmic expansion and discriminant

(1.5) $0\leq(1-\eta^2)^{K(Z\pm S\pm N)/t}=\{({}^{K(Z\pm S)}\sqrt{D})/D_0\}^{K(Z\pm S\pm N)/t}$
$=(1-\eta^2)^{K(Z\pm S\pm N\pm 0)/t}+(1-\eta^2)^{K(Z\pm S\pm N\pm 1)/t}+\ldots+(1-\eta^2)^{K(Z\pm S\pm N\pm p)/t}$
$=\{0 \text{ to } 1\}^{K(Z\pm S\pm N)/t}\leq 1$;

Formulas (1.1)-(1.5) describe arbitrary combination terms of infinite elements in any calculus equation, which have reciprocity and regularized relative symmetry.

In particular, $(1/C_{(S\pm N-p)})^k({}^{(Z\pm S\pm N)}\sqrt{(\prod_{(i=p)}D)}/D_0\}^{K(Z\pm S\pm N)/t}$, called the discriminant Traditional calculus and pattern recognition computers are used to judge whether there is a solution or not. Here are all calculus equations that can have solutions. Discriminants are used to judge this equation, as well as the properties of characteristic modules and logarithms of circles.

The eigenmode (called quantized physics) is obtained by using the "combination coefficient" as the "average value" of the unit volume. The logarithm of a circle is based on the logarithm of the characteristic modulus.It can be clearly proved that the logarithmic factor of the calculus order value (N ± j) and the term order (P ± j) is synchronized with the power function factor change to achieve integer variability.In other words, the differential (N-j) and integral (N+j) of the calculus order value (j) are synchronized with the term order increase (P+j) and decrement (P-j), reflecting the calculus As the relationship between the (j) element (or function, cluster) and the order value of the original function, as well as the term order reorganization and inverse superposition

This mathematical combination makes the traditional calculus concepts and symbols, and logical algebra concepts and symbols establish a close relationship for a unified description of novel calculus equations. The integer (zero error, ε = 0) expansion that satisfies any calculus equation has become a reliable, complete, and unified mathematical foundation for accurate calculus solution
.

Mathematical combination and reciprocity theorem:

In 1975, Beman-Hartmanis discovered the existence of a pair of reciprocal functions G {·} F {·}, called B-H conjecture. Traditional proofs are limited by "(incomplete) symmetry." The reciprocity of functions was first proposed by Euler and Legendre, and Gauss gave the first strict proof, called "the yeast of number theory", indicating that many mathematical function theorems are closely related to it.

In 1967, Langlands proposed the Langlands program to propose the "basic lemma", called the reciprocity theorem [3]. Their essence is the reciprocity of mathematical combinations. It is called "number theory yeast", which means that many theorems in number theory are derived from it. This shows the importance of this reciprocity theorem. The mathematical combination reciprocity theorem requires proof: universal, reversible, symmetrical and asymmetric reciprocal phenomena exist in any neutral function.
Proof of reciprocity is given here.

Definition point infinity: the set of various combinations of infinite elements:

$$(X)^{K(S/t)}=\sum_{(i=S)}\prod_{(i=p)}\{x_1\, x_2 \ldots x_p\}^{K(S/t)}\in\{X\}^{(Z/t)};$$

Defining a combination function: points are infinitely multiplied by successive elements, and converted into successive additions of positive, middle, and negative combinations. Called "mathematical combination".

Defining a combination function: points are infinitely multiplied by successive elements, and converted into successive additions of positive, middle, and negative combinations. Called "mathematical combination".

Defining the characteristic modulus form: the combination of infinite forward points is divided by the number of combinations (combination coefficient) to obtain positive, middle, and negative average values.

$$(R_0)^{Z/t}=(X_0)^{Z/t}=\sum_{(i=S)}(1/C_{(S\pm N\pm p)})^k\prod_{(i=p)}\{x_1\, x_2 \ldots x_p\}^{k(S\pm N\pm p)}\in\{X\}^{k(Z/t)};(K=+1,0,-1);$$

Define the logarithm of the circle: Divide the reverse combined average by taking the forward combined average as the base, and get the abstract real value of the dimensionless quantity, which expands infinitely in the [0 to 1] region.

Define the power function of the combination function: divide the base eigenmode as the base and divide the logarithm of the eigenmode of each element combination form to meet the expansion of the integer, and form an exponential linear function:$(Z/t)=K(Z\pm S\pm N\pm p)/t$, (K=+1,0,-1) ;

Among them:(Z/t): point infinite dynamic state; K: elemental properties;*(±S)* element (dimensional, order) of the organization*(±N)*: calculus
Order value; *(±p)*: term order in combination.

[Proof 1]: reciprocity of combination function:
Proof idea: Iterative method: use the basic characteristic module$\{R_{\Theta}\}^{k(Z\pm S\pm(N\pm j\pm 1)\pm(p\pm j\pm 1))/t}$ of the mathematical combination as the unit body $\{R_{\Theta}\}^{k(1)}$, In ascending or descending order. The basic characteristic mode here is the average value of the combination function with a fixed combination form, which is different from a "fixed number-based logarithm" used in traditional mathematics

Prove:
The reciprocity of infinite combinations of points.

Proof:
It is required to prove the reciprocity of the combined function, which is universal and complete

Suppose:
The change characteristic of the power function(j=≤S), which means that the arbitrary combination function and (j) number of elements are recombined to become a new level combination function. Reflected as the change of calculus order value and term order:(N≤S),(N±j)±(p±j)combination function, (K=+1,0,-1)

Element characteristic mode (average of positive, middle, and inverse combination functions): represents (j=0) element combination.(N=≤S),(N±0)±(p±1) item order(p±0)、(p±1)means "0-0 combination" is called "first characteristic mode (multiple combination)" The "1-1 combination" is called "the second characteristic mode (continuous addition combination)" as a combination set of unit cells. It is called "basic characteristic mode" and has an abbreviation: basic mode.

$$(2.1)\{R_{\Theta}\}^{k(1)/t}=\{X_{\Theta}\}^{k(Z\pm S\pm(N\pm j\pm 1)\pm(p\pm j\pm 1))/t}$$
$$=(1/C_{(S\pm(N\pm j\pm 1)\pm(p\pm j\pm 0))})^{K}\{{}^{k(S\pm(N\pm j)}\sqrt{\prod_{(i=(p\pm j)}(x_1x_2\ldots)^{+1}}\}^{k(Z\pm S\pm(N\pm j\pm 1)\pm(p\pm j\pm 0))/t}$$
$$=(1/C_{(S\pm(N\pm j\pm 1)\pm(p\pm j\pm 1))})^{K}\sum_{(i=S)}\{(x_1+x_2+\ldots)^{+1}\}\}^{k(Z\pm S\pm(N\pm j\pm 1)\pm(p\pm j\pm 1))/t}$$
$$=\{X_0\}^{k(1)/t}=\{D_0\}^{k(1)/t};$$

Prove:
Prove the reciprocity of K(j)/t order value and term order of calculus:
Suppose:
the calculus function raises and lowers the power oforder-term order $\{X_0\}^{k(Z\pm S\pm N\pm P)/t}$ using the basic modulus$\{X_0\}^{k(Z\pm S\pm(N\pm j)\pm(p\pm j))/t}$

$$\{X_{\Theta}\}^{kj}=\prod_{(i=(N\pm j)\pm(p\pm j))}\{X_0\}^{k(Z\pm S\pm(N\pm j)\pm(p\pm j))/t}$$
$$=\prod_{(i=(p\pm j)}\{X_{\Theta}\}^{k1}\cdot\{X_{\Theta}\}^{k1}\cdot\ldots\cdot\{X_{\Theta}\}^{k1};$$

heve： $\{X_0\}^{k(Z\pm S\pm N\pm P)/t}=[\{X_0\}^{k(Z\pm S\pm N\pm P)/t}/\{X_{\Theta}\}^{+Kj}]\cdot\{X_{\Theta}\}^{+Kj}$
$$=[\{X_{\Theta}\}^{Kj}/\{X_0\}^{k(Z\pm S\pm N\pm P)/t}]^{-1}\cdot\{X_{\Theta}\}^{+Kj}$$
$$=(1/C_{(Z\pm S\pm(N-j)\pm(p-j))})^{k}\prod_{(i=(p-j)}\{x_{(p-j)}{}^{k(Z\pm S\pm(N-j)\pm(p-j))/t}\}^{-1}\cdot\{X_{\Theta}\}^{+Kj}$$
$$=[\{X_0\}^{k(Z\pm S\pm(N-j)\pm(p-j))/t}\cdot\{X_{\Theta}\}^{k(Z\pm S\pm(N+j)\pm(p+j))/t}$$
$$=\{X_{\Theta}\}^{-Kj}\cdot\{X_0\}^{+Kj};$$

$$(2.2)\qquad \{X_{\Theta}\}^{k(Z\pm S\pm N\pm p)/t}=\{X_{\Theta}\}^{k(Z\pm S\pm(N-j)\pm(p-j))/t}\cdot\{X_{\Theta}\}^{k(Z\pm S\pm(N+j)\pm(p+j))/t}$$

Formula (2.2)$\{X_{\Theta}\}^{k(Z\pm S\pm(N-j)\pm(p-j))/t}and\{X_{\Theta}\}^{k(Z\pm S\pm(N+j)\pm(p+j))/t}$respectively represent differential Reciprocity with integral order value and term order.In particular, here there are two states of symmetry and asymmetry $\{X_{\Theta}\}^{k(Z\pm S\pm(N-j)\pm(p-j))/tj}=\{X_{\Theta}\}^{k(Z\pm S\pm(N+j)\pm(p+j))/t}$and $\{X_{\Theta}\}^{k(Z\pm S\pm(N-j)\pm(p-j))/tj}\neq\{X_{\Theta}\}^{k(Z\pm S\pm(N+j)\pm(p+j))/t}$is the completeness of reciprocity. The geometric space representation is used, which are the central ellipse and the eccentric ellipse.
The introduction of traditional mathematics: Calculus emphasizes symmetry, which is "finding infinite infinite divided by zero to find the limit", eliminating error approximation calculation. Pattern recognition introduces the axiomatic hypothesis to emphasize symmetry: "divided by itself is equal to 1" for discrete calculations. Number theory requires integer expansion. There are also logical calculations using group theory. One expects four operations in number theory (arithmetic) regression arithmetic.

The traditional habit of mathematics so far has emphasized the "symmetry" for discussion and derivation, and deliberately avoided the fact that asymmetry exists, because of the "asymmetry" characteristic that appears in combinations that are not understood. Shows the weakness of the mathematical foundation.

For example, the British mathematician Wiles introduced the periodic elliptic function in the proof of the reciprocity of "Fermat's Last Theorem" to prove the existence of reciprocity (note: this involves the central ellipse of symmetry). Say "the central ellipse is not equal to the eccentric ellipse". The conclusion is that the Fermat theorem inequality holds. The fact is: Fermat's Great Theorem inequality can become a relativity equation.

Fermat's theorem: xn + yn ≠ zn introduces the logarithm of the circle into xn + yn = (1-η2) nzn. (Keeping the dimension and elements unchanged) shows that Fermat's theorem can be established or not, and the two states can be unified. Wiles is at least incomplete in this proof. Including the current series of functions involving many BSD conjectures, and the proof of symmetry involved in the proof of all mathematical problems is also incomplete.

[Proof 2] The reciprocity theorem and the logarithm of the circle:
The law of second reciprocity first originated in Fermat's time in the 17th century, and Gauss gave his first proof in 1801. A question often mentioned in number theory is: When two prime numbers are divided, is the remainder completely square? The law of quadratic reciprocity reveals the wonderful connection between two seemingly unrelated problems about prime numbers p and q.

Solve Gushan-Shicun-Wei's conjecture. The conjecture reveals the relationship between elliptic curves and modular forms, the former being geometric objects with profound arithmetical properties, and the latter being highly periodic functions derived from distinct fields of mathematical analysis.

The Langlands program proposes a network of relationships between the Galois representation in number theory and the self-defense type in analysis. The law of second reciprocity is still one of the most amazing facts in number theory.

The crux of the problem: since the universality of the combination function exists "symmetry and asymmetry", that is, the "center ellipse and eccentric ellipse" of the geometric figure. So can "symmetry and asymmetry" be described uniformly? It also involves whether Fermat's Last Theorem holds. People have been arguing.

The reality is that asymmetry becomes relative symmetry through the logarithm of the circle. "Symmetry and asymmetry", "center ellipse and eccentric ellipse", and "center circle and eccentric circle" can be labeled qualitatively and quantitatively through the logarithm of the two. Unified values and relationships.

Proof:
Reciprocity Theorem and Circular Logarithm
Let:
Reciprocal function or calculus element variable be $\{X_\Theta\}^{k(Z\pm S\pm(N-j)\pm(p-j))/t} \neq \{X_\Theta\}^{k(Z\pm S\pm(N+j)\pm(p+j))/t}$
Let:
$(1-\eta^2)^{k(Z\pm S\pm(N\pm j)\pm(p\pm j))/t}=\{X_\Theta\}^{k(Z\pm S\pm(N-j)\pm(p-j))/t} / \{X_\Theta\}^{k(Z\pm S\pm(N+j)\pm(p+j))/t}$;
Proof:
Introduce formula
(2.2) $\{X_\Theta\}^{k(Z\pm S\pm N\pm p)/t}= \{X_\Theta\}^{k(Z\pm S\pm(N-j)\pm(p-j))/t} \cdot \{X_\Theta\}^{k(Z\pm S\pm(N+j)\pm(p+j))/t}$
$= \{X_\Theta\}^{k(Z\pm S\pm(N-j)\pm(p-j))/t} / X_\Theta\}^{k(Z\pm S\pm(N+j)\pm(p+j))/t}$
$\cdot\{X_\Theta\}^{k(Z\pm S\pm(N+j)\pm(p+j))/t} \cdot \{X_\Theta\}^{k(Z\pm S\pm(N+j)\pm(p+j))/t}$
Move a $\{X_\Theta\}^{k(Z\pm S\pm(N+j)\pm(p+j))/t}$ to the left of the formula to get
(3.1) $\{X_\Theta\}^{k(Z\pm S\pm(N-j)\pm(p-j))/t}= (1-\eta^2)^{k(Z\pm S\pm(N\pm j)\pm(p\pm j))/t}\{X_\Theta\}^{k(Z\pm S\pm(N+j)\pm(p+j))/t}$;
And vice versa;
(3.2) $\{X_\Theta\}^{k(Z\pm S\pm(N+j)\pm(p+j))/t}=(1-\eta^2)^{k(Z\pm S\pm(N\pm j)\pm(p\pm j))/t}\{X_\Theta\}^{k(Z\pm S\pm(N-j)\pm(p-j))/t}$;
The formulas (3.1) and (3.2) prove that the asymmetry is treated by the logarithm of the circle, and the qualitative and quantitative values and relationships between the two are marked.Make the inequality a relative one. Why is the relativity equation? Because under the condition of interaction, the combination of asymmetry becomes a relatively

symmetrical combination. Once the interaction is eliminated, the asymmetry is restored. This form is called relative symmetry.

[Proof 3] Circular log normalization and isomorphism:
Can various combinations of infinite points be normalized to a linear factor expansion of a power function? This is very important for simplifying arithmetic calculations and chip design. Infinite program topologies reflected as logarithms of circles can all be normalized to the arithmetical superposition of linear factors.

Proof:
Circular logarithmic normalization, which proves that there is a normalization of isomorphism in various combinations.
Card:
Quote [Card 1], [Card 2]:
Suppose:
for convenience of derivation, the combination function is mutually inversely written as: $G(\cdot)=\{X_0\}^{k(Z\pm S\pm N-p)/t}$, $F(\cdot)=\{X_0\}^{k(Z\pm S\pm N+p)/t}$; represents the change of the term order of the calculus combination.
prove the necessity of normalization:
Application formula (2.1)

$$\{X_\Theta\}^{kj}=\prod_{(i=(p\pm j\pm 1))}\{X_0\}^{k(Z\pm S\pm(N\pm j)\pm(p\pm j))/t}=\prod_{(i=(p\pm j\pm 1))}\{X_\Theta\}^{k1}\cdot\{X_\Theta\}^{k1}\cdot\ldots\cdot\{X_\Theta\}^{k1} ;$$

sequential iterative method.

(4.1) $G(\cdot)=\{X_0\}^{k(Z\pm S\pm N+p)/t}/\{X_0\}^{+K(p+1)}=\{X_0\}^{k(Z\pm S\pm N-1)/t}$;

(4.2) $G_0(\cdot)F_0(\cdot)=\{X_0\}^{k(Z\pm S\pm N-1)/t}\cdot\{X_0\}^{k(Z\pm S\pm N+1)/t:}$;

Reflects that the basic feature module contains integral elements, and eliminates (increases) repeated combination elements in order of continuous division (multiplication), thereby obtaining the integral necessity expansion of the power function, and achieving normalization with zero errors.
prove the adequacy of normalization:
Defining the combination repetition rate: It is the combination of point infinite elements and non-repetition. There is a repetition(p-1) in the combination of elements p. The number of occurrences is called the combination repetition rate fp. The calculus function is:F_p= (N-1)±(p-1)
Proof: According to the reciprocity, the multiplication can be converted into the inverse eigenmode (that is, the mean of the reciprocal function is superimposed), so there is

$$\begin{aligned}\{X_0\}^{k(Z\pm S\pm N\pm p)/t}&=\sum_{(i=S)}(1/C_{(S\pm N\pm p)})^k[\{x_a x_{b\ldots} x_p)^k+\{x_a x_{c\ldots} x_p)^k+\ldots]\}^{k(Z\pm S\pm N\pm p)/t}\\&=\sum_{(i=S)}(f_p/C_{(S\pm N\pm 1)})^k\sum_{(i=p)}[f_p\{x_a)^k+f_p\{x_b)^k+\ldots]\}^{k(Z\pm S\pm N\pm 1)/t}\\&=\sum_{(i=S)}(f_p/C_{(S\pm N\pm 1)})^k\sum_{(i=p)}f_p[\{x_a)^k+\{x_b)^k+\ldots]\}^{k(Z\pm S\pm N\pm p)/t}\end{aligned}$$

Elimination of combined repetition ratesf_p

$$f_p=\sum_{(i=S)}(1/C_{(S\pm N\pm 1)})^k\sum_{(i=p)}[\{x_a)^k+\{x_b)^k+\ldots]\}^{k(Z\pm S\pm N\pm 1)/t:} ;$$

(4.3) $G(\cdot)F(\cdot)=\!\longrightarrow\{X_0\}^{k(Z\pm S\pm N-1)/t}\cdot\{X_0\}^{k(Z\pm S\pm N+1)/t:}$;

(4.4) $\{X_0\}^{k(Z\pm S\pm N\pm p)/t}=\!\longrightarrow\{X_0\}^{k(Z\pm S\pm N\pm 1)/t}$;

(4.5) $(1-\eta^2)^{K(Z\pm S\pm N\pm P)}=\!\longrightarrow(1-\eta^2)^{K(Z\pm S\pm N\pm 1)}$;

(4.6) $(1-\eta^2)^{K(Z\pm S\pm N\pm P)}=\!\longrightarrow(1-\eta^2)^{K(Z\pm S\pm N+1)}+(1-\eta^2)^{K(Z\pm S\pm N-1)}$;

Proof of isomorphism:
Since the iterative method is selected for the combination of arbitrary (p) combination sub-items and basic feature modules, the method is also satisfied for other combination forms, which proves that the normalization process of reciprocity proves isomorphism. By the same token, the corresponding logarithm of the circle is also isomorphic.

(4.7) $(1-\eta^2)^{K(Z\pm S\pm N\pm P)}=G(\cdot)/F(\cdot)$

$$=\!\longrightarrow\{X_0\}^{k(Z\pm S\pm N-1)/t}/\{X_0\}^{k(Z\pm S\pm N+1)/t:}= (1-\eta^2)^{K(Z\pm S\pm N\pm 1)} ;$$

The complete problem of isomorphism is called "P=NP complete problem", which means: any combination of points is infinite, and the set becomes a polynomial, which is called a simple polynomial and a complex polynomial, respectively. It is required to have the same and consistent calculation time and method in the calculation time. It is called isomorphic circle logarithm, and it is supplemented to prove the integrality of the expansion of the eigenmodule and the power function of the circle logarithm to ensure the linear expansion of the power function.

In the formula: $\{fx_a\}$ represents the number of times (f_p) occurs in the combination (x_a), eliminating the element combination repetition rate (f_p), which is normalized. Normalization proves that each linear combination of "single element and whole element" or a round logarithmic power function factor has synchronized linear expansion.

[Proof 4] Unity of symmetry and asymmetry of reciprocity theorem:

The symmetry and asymmetry of the reciprocity theorem is a very important issue in the fields of mathematics and science. The symmetry and asymmetry of universality in its reciprocity theorem are reflected in the center point $\{X\}^{k(Z/t)}$and the infinite points of the boundary line $\{x_a^k,x_b^k,\ldots x_p^k,\ldots\}^{k(Z/t)}$The distance, value, and measure of have symmetry and asymmetry. The geometry is called "central ellipse and eccentric ellipse". This is a problem that must be faced in any field of science and mathematics.

Central elliptic function:

Closed elliptic curve, two and two functions$\{x_a^k,x_b^k,\ldots x_p^k,\ldots\}^{k(Z/t)}$ and the center equilibrium point$\{X\}^{k(Z/t)}$The points above the (tangent) distance and value are symmetrical. It is called "central symmetric ellipse circle function" or "central symmetric circle function" for discrete calculation.

(5.1) $(1-\eta^2)^{K(Z\pm S\pm N\pm P)}=\longrightarrow(1-\eta^2)^{K(Z\pm S\pm N+1)}+(1-\eta^2)^{K(Z\pm S\pm N-1)}=\{0 \text{ or } 1\}$;

Eccentric elliptic function: closed asymmetric elliptic curve, function $\{x_a^k,x_b^k,\ldots x_p^k,\ldots\}^{k(Z/t)}$, (tangent to the center point$\{X\}^{k(Z/t)}$Distance and numerical points are asymmetric, which is called "eccentric asymmetric elliptic function" for entanglement calculation.

(5.2) $(1-\eta^2)^{K(Z\pm S\pm N\pm P)}=\longrightarrow(1-\eta^2)^{K(Z\pm S\pm N+1)}+(1-\eta^2)^{K(Z\pm S\pm N-1)}=\{0 \text{ to } 1\}$;

In particular, the so-called "asymmetry" has two other states: under the condition that the characteristic modulus form (boundary) is constant: the position of the center function (equilibrium point)$\{X\}^{K(Z/t)}$ numerical changes, and the boundary The shape of the curve and the function $\{x_a^k,x_b^k,\ldots x_p^k,\ldots\}^{K(Z/t)}$ change ", these two changes have reciprocal symmetry and equivalence, which reflects the re-proof of the regularized distribution.

[Proof 5] The maximum value of the relative symmetry of the reciprocity theorem:

If the comparison is based on the "center symmetric perfect circle function", the "center ellipse function" is a special case of "eccentric ellipse function". Furthermore, the "central elliptic function" is a special case of the perfect circle function.

The logarithm of a circle based on a perfect circle curve appears: the area surrounded by any arbitrary curve (the positive circumference is $2\pi R$ constant, the algebraic constant characteristic modulus, and the arithmetically constant constant arithmetic mean) are compared with the perfect circle as the base Make up the logarithmic value of the circle. Get the real value of the unified metric. Reflects the relationship between the perfect circle function, the central ellipse function, and the eccentric ellipse function, which are unified as: the superposition of the eccentric movement of the perfect circle function center based on the perfect circle function $\{R_\Theta\}$.

Assume: $\{R_\Theta\}^K=(X_0)^{+1}(X_0)^{-1}=g_0(\cdot)\, f_0(\cdot)$;

$$(1-\eta_\Theta^2)^{K(Z\pm S\pm N\pm 1)}=g_0(\cdot)/\, f_0(\cdot)$$

$$\begin{aligned}(6.1)\ (1-\eta^2)^{K(Z\pm S\pm N\pm 1)}&=[g_1(\cdot)f_1(\cdot)/g_2(\cdot)\, f_2(\cdot)]\\ &\quad\cdot[g_2(\cdot)\, f_2(\cdot)/g_3(\cdot)\, f_3(\cdot)]\cdot\ldots\cdot[g_p(\cdot)f_p(\cdot)/g_0(\cdot)\, f_0(\cdot)]\\ &= [(1-\eta_p^2)\cdot(1-\eta_2^2)\cdot\ldots\cdot(1-\eta_p^2)/(1-\eta_\Theta^2)]^{K(Z\pm S\pm N\pm p)}\\ &= [(1-\eta_p^2)+(1-\eta_2^2)+\ldots+(1-\eta_p^2)]^{K(Z\pm S\pm N\pm p)}\\ &=\textstyle\sum_{(i=S)}(1-\eta_i^2)^{K(Z\pm S\pm N\pm p)}\\ &=\{0 \text{ to } 1\}^{K(Z\pm S\pm N\pm p)} \ ;\end{aligned}$$

Minimum combination coefficient values

(6.2) $\{1/C_{(S\pm N\pm p)}\}^{K(Z\pm S\pm N\pm p)/t}=\longrightarrow\{1/C_{(S\pm N\pm 1)}\}^{K(Z\pm S\pm N\pm 1)/t}=(1/S)^K$;

Logarithmic circle maximum

(6.3) $(1-\eta_\Theta^2)^{K(Z\pm S\pm N\pm 1)}=\{1\}\geq(1-\eta^2)^{K(Z\pm S\pm N\pm p)}=\{0 \text{ to } 1\}$;

Formula (6.3) represents the logarithm of the circle corresponding to the arithmetic mean of the "1-1" combination. The logarithm of a circle is called a mathematical field, and it is also called a maximum "mathematical field", which is reflected as the position and maximum {1} value of the geometric space (0_Θ) of a perfect circle (sphere, torus) or symmetrical geometric center. In the "logarithm-mathematical field", it is expressed that the forward eigenmode is equal to the reverse eigenmode.

[Proof 6], logarithmic circular equation and expansion

Suppose: the unknown variable element of the calculus reciprocity combination function is the "sum of the reciprocals of the Riemann function and then the inverse number" is the inverse characteristic modulus$\zeta(x_h)^{K(Z/t)}$; the known variable element is the "Riemann function" The sum of positive numbers and then positive numbers is the forward characteristic mode $\zeta(D_H)^{K(Z/t)}$

Probability term:

Define the logarithm of the probability circle: the combination of unknown variable elements divided by unknown variable elements. Adapt to discrete statistics.

$$(7.1)\zeta(x_h)^{K(Z/t)}/\zeta(D_H)^{K(Z/t)}=\zeta[(x_h)/(D_H)]^{K(Z/t)}$$
$$=\{(1-\eta_a{}^2)+(1-\eta_b{}^2)+\ldots+(1-\eta_p{}^2)+\ldots\}\}^{K(Z/t)}$$
$$=(1-\eta_H{}^2)^{K(Z/t)}$$
$$\leq\{1\}^{K(Z/t)};$$

Topological terms:

Define the topological circle logarithm: the combined mean of the unknown variable elements combined function divided by the combined mean of the unknown variable elements. Adapt to entangled analysis.

$$(7.2)\zeta(x_0{}^{-1})^{K(Z/t)}\cdot\zeta(D_0{}^{+1})^{K(Z/t)}=\zeta(x_0{}^{-s})^{K(Z/t)}\cdot\zeta(D_0{}^{+s})^{K(Z/t)}$$
$$=\{(1-\eta_1{}^2)+(1-\eta_2{}^2)+\ldots+(1-\eta_p{}^2)+\ldots\}^{K(Z/t)}$$
$$=(1-\eta^2)^{K(Z/t)}$$
$$=\{0\text{ to}1\}^{K(Z/t)};$$

The factor superposition of the logarithm of the circle:

Probability term:

$$(7.3)(\eta_H{}^2)^{K(Z/t)}=\{(\eta_a{}^2)+(\eta_b{}^2)+\ldots+(\eta_p{}^2)+\ldots\}\}^{K(Z/t)}\ ;$$
$$(7.4)(\eta_H)^{K(Z/t)}=\{(\eta_a)+(\eta_b)+\ldots+(\eta_p)+\ldots\}\}^{K(Z/t)}\ ;$$

Topological terms:

$$(7.5)(\eta^2)^{K(Z/t)}=\{(\eta_1{}^2)+(\eta_2{}^2)+\ldots+(\eta_p{}^2)+\ldots\}\}^{K(Z/t)}\ ;$$
$$(7.6)(\eta)^{K(Z/t)}=\{(\eta_1)+(\eta_2)+\ldots+(\eta_p)+\ldots\}\}^{K(Z/t)}\ ;$$

In the formula: the combination coefficient represents the square of the P combination of the elements in the multifunction, and the element body element$[g_0(\cdot)f_0(\cdot)]$ has the duality of one-dimensional linearity and two-dimensional planarity. Physics calls wave-particle duality.

The circular logarithm has the same form and isomorphic consistency of the power function linear expansion, that is, the same calculation time, so that any nonlinear calculus can be converted into linear calculus calculation and become a unified circular logarithmic algorithm

As mentioned above, the combinative mathematical reciprocity theorem proves that it involves mathematical problems such as the unitary logarithm of Hodge's Conjecture, the isomorphism of the P=NPcomplete problem, and satisfies the linear expansion of the power function of calculus-polynomials. With the same calculation time, any nonlinear calculus can be converted into linear calculus calculation and become a unified circular logarithmic algorithm.

Mathematical combination and calculus:

So far, the traditional algorithm for the "univariate or homogeneous (S)ary(Z±S±N)degree equation" originally belonged to entangled calculations. But traditional calculus has no way to deal with it directly, or use error analysis to obtain approximate solutions. Not even a solution. It can be seen that clarifying the relationship between the calculus variable combination and the characteristic modulus is an indispensable theory and concept. The key point is that we do not understand the key problems of calculus with $({}^{K(S\pm N)}\sqrt{x})=(D_0)$ and no$({}^{K(S\pm N)}\sqrt{x})\neq(D_0)$ That is, the condition of symmetry and asymmetry in the condition of the "center combination" term$({}^{K(S\pm N)}\sqrt{x})=(D_0)$ of the characteristic mode of the unknown variable and the "boundary combination"(D_0) characteristic mode of the known variable does not exist. Figure it out.

(1), Balance of symmetry: refers to symmetry with discrete conditions. Relative symmetry converted to reciprocity by the logarithm of the circle equal to "1".

(2), Asymmetry balance: refers to the asymmetry with entanglement conditions. The relative relativity is coordinated as reciprocity through the logarithm of the circle not equal to "1".

(8.1) $\{D_0\}^{K(Z\pm S+N+p)/t}=\{{}^{K(S\pm N)}\sqrt{x}^{K(Z\pm S-N-p)/t}\}$

$=(1/C_{(S+N-p)})\sum_{(i=s)}\prod_{(i=p)}(x_1x_2\ldots x_p)\}^{K(Z\pm S-N-p)/t}$

$=(1/C_{(S+N+p)})\sum_{(i=s)}\prod_{(i=p)}(D_1D_2\ldots D_p\}^{K(Z\pm S+N+p)/t}$

$=\{X_0\}^{K(Z\pm S-N-p)/t}$

$=\{R_0\}^{K(Z\pm S\pm N\pm p)/t}$;

(8.2) $0\leq(1-\eta^2)^{K(Z\pm S\pm N\pm p)/t}=\{({}^{K(S\pm N)}\sqrt{D})/D_0\}^{K(Z\pm S\pm N\pm p)/t}$

$=\{({}^{K(S\pm N)}\sqrt{x})/D_0\}^{K(Z\pm S\pm N\pm p)/t}$

$=\{0\text{ to }1\}^{K(Z\pm S\pm N\pm p)/t}\leq 1$;

(8.3) $({}^{K(S\pm N)}\sqrt{x})^{K(Z\pm S\pm N\pm p)/t}=(1-\eta^2)^{K(Z\pm S\pm N\pm p)/t}\{D_0\}^{K(Z\pm S\pm N\pm p)/t}$;

Why is it called relative relativity? Because $\{({}^{K(S\pm N)}\sqrt{x})\}^{K(Z\pm S\pm N\pm p)/t}\neq\{D_0\}^{K(Z\pm S\pm N\pm p)/t}$, if the interaction is cancelled The logarithmic state of the circle is still an inequality. This $\{({}^{K(S\pm N)}\sqrt{x})\}^{K(Z\pm S\pm N\pm p)/t}\approx\{D_0\}^{K(Z\pm S\pm N\pm p)/t}$must apply the average value for the round logarithm Processing, formula (8.3), is called the relative symmetry equation (the same applies hereinafter).

(8.4) $(1-\eta^2)^{K(Z\pm S\pm N\pm p)/t}=\sum_{(i=S)}(1-\eta_i^{\,2})^{K(Z\pm S\pm N\pm p)/t}$;

(8.5) $(\eta)^{K(Z\pm S\pm N\pm p)/t}=\sum_{(i=S)}(\eta_i)^{K(Z\pm S\pm N\pm p)/t}$; or $(\eta^2)^{K(Z\pm S\pm N\pm p)/t}=\sum_{(i=S)}(\eta_i^{\,2})^{K(Z\pm S\pm N\pm p)/t}$;

Formulas (8.1)-(8.5) describe the asymmetry changes of non-linear functions that can be converted to superposition calculations of linear functions. See also the circular log normalization proof. It reflects that mathematical combination is the core theory of calculus.

In particular, the eigenmodes of the infinite set of calculus combinations are the average value of the combination function, fulfilling the "probability-topology" consistent concept, the combination coefficients of the equilibrium equation, and still meeting the Yang-hui Pascal triangle distribution rule of regularized symmetrical distribution.

Mathematical combination and calculus order value, term order:

The "one-ary or homogeneous(S)-ary(Z±S±N)degree equation" of traditional calculus is an unknown variable(x^S) and a known variable$({}^{K(S\pm N)}\sqrt{D})^{K(Z\pm S-N-p)/t,}$, which contains$(x_1,x_2,\ldots x_S)$ and $(D_1,D_2,\ldots D_S)$the respective uncertainty multiplication (addition) combination elements. The eigenmodes of their respective combined averages$({}^{K(Z\pm S)}\sqrt{x})^{K(Z\pm S-N-p)/t}\neq\{D_0\}^{K(Z\pm S+N+p)/t}$. After extracting the logarithm of the circle, the symmetry expansion of the corresponding order and term can be obtained.

For the multiplication of S elements of finite elements, the coefficient of the first term of the calculus equation $A=1,C_{(S\pm N\pm p\pm 0)}=1$. Has a regularized distribution under boundary conditions, so that the calculus-polynomial forward(p+1) term combination coefficient$(1/C_{(Z\pm S-N-p)/t)})^{-1}$corresponds to the reverse (p-1) The term combination coefficient$(1/C_{K(Z\pm S+N+p)/t)})^{+1}$. And transform the traditional calculus sign into a linear expansion of the power function. There are "p-p" combination function sub-items:

(9.1) $(1-\eta^2)^{K(Z\pm S-N-p)/t}= d^nf(x_p)/(D_0^{\,+1})\}^{K(Z\pm S-N-p)/t}$

$=\sum_{(i=s)}\{(1/C_{(S-N-p)})^{-1}({}^{K(S-N)}\sqrt{x})(/D_0^{\,+1})\}^{K(Z\pm S-N-p)/t}$;

(9.2)$(1-\eta^2)^{K(Z\pm S+N+p)/t}=\int^n f(x_p)dx/(D_0^{\,-1})\}^{K(Z\pm S-N-p)/t}$

$=\sum_{(i=s)}\{(1/C_{(S+N+p)})^{+1}({}^{K(S+N)}\sqrt{x})/(D_0^{\,-1})\}^{K(Z\pm S+N+p)/t}$;

In view of the fact that traditional calculus has not found any "asymmetry" or found no way to deal with it, the relationship between the mathematical combination of calculus and the order and terms only emphasizes the symmetry of calculus (including the logical algebra of existing pattern recognition) , Limited to$({}^{K(Z\pm S)}\sqrt{x})=(D_0)$for discrete data statistical calculations, and for entangled analysis calculations, it is also limited to simple calculations. The "i" imaginary number proposed in calculus cannot solve the calculation of the rotating ring at all. It reflects that the gap between traditional calculus and reality science is very large, and it is not qualified for the development of contemporary science.

The following proves why calculus polynomials and power functions in differential geometric spaces are integer expansion? It is also a matter of concern with the Hodge Conjecture.

The reciprocity of the combination function proves that it has involved the combination of calculus order values and term order.

Define calculus order and term order: is the number of finite elements (j) and the entire calculus function$({}^{K(Z\pm S)}\sqrt{x})^{K(Z\pm S\text{-}N\text{-}p)/t}$ or $\{D_0\}^{K(Z\pm S+N+p)/t}$ each element is recombined, and(S±j), (N±j), (P±j)appear. (Z±j)=(Z) where the infinite number plus the infinite number is still infinite. Its power function is written as K(Z±S±N±p)/t↔K(Z±(S±j)±(N±j)±(P±j))/t。 . (J = 1,2,3 ... natural numbers). (K=+1,0,-1)
Where (S±j) provides parallel calculus applications. (The same applies hereinafter).

In January 2020, the author has proved the infinite point of each combination function in "Exploring the Science, Philosophy and Application of the Langlands Program" in the International Journal of Advanced Research(IJAR)[p466-500], and chapters 4 and 5 The average value $\{R_0\}^{K(Z\pm S\pm N\pm p)/t}$has reciprocity isomorphism, unity, and relative symmetry, and there is universal “symmetry and asymmetry”. Here, the combination with the calculus order value and the term order is specifically demonstrated.
Verify: the relationship between mathematical combinations and calculus.
Proof: The combination of basic eigenmodes in order values and term order is still used, and has synchronous combination.

Let: the power function K(Z±S±N±p)/t in the eigenmode and the logarithm of the circle. Step by step consists of the original function (zero order) (±j=0), the order value(N±0)(j=0)and the term order(p±0).(j=0)) The integer (combining the average value of the subitems divided by the average value) is used to obtain the rise and fall of zero error（ε=0） as(j≠0), the order value (N±j), and the term order(p±j). It is K(Z±(S±j)±(N±j)±(P±j))/t It is called iterative proof.

(10.1) $\sum_{(i=S)}(1/C_{(S\pm N\pm p)})^K\{({}^{K(S\pm N)}\sqrt{\prod_{(i=p)}}(x_1x_2\ldots x_P)^K+\ldots\}^{k(Z\pm S\pm N\pm p)/t}$
$=\longrightarrow\sum_{(i=S)}(1/C_{(S\pm N\pm 1)})^K\{x_1{}^K+x_2{}^K+\ldots+x_P{}^K+\ldots\}^{k(Z\pm S\pm N\pm 1)/t}$
$\in\{X_0\}^{k(Z\pm S\pm N\pm p)/t}=\{D_0\}^{k(Z\pm S\pm N\pm p)/t}=\{R_0\}^{k(Z\pm S\pm N\pm p)/t}$;

Calculus (j) function (j-th order): : K(Z/t)=K(Z±(S±j)±(N±j)±(P±j))/t

(10.2) $\sum_{(i=S)}(1/C_{(Z\pm(S\pm j)\pm(N\pm j)\pm(P\pm j))})^K\{({}^{K(S\pm N)}\sqrt{\prod_{(i=p)}}(x_1x_2\ldots x_P)^K+\ldots\}^{K(Z\pm(S\pm j)\pm(N\pm j)\pm(P\pm j))/t}$
$=\longrightarrow\sum_{(i=S)}(1/C_{(Z\pm(S\pm j)\pm(N\pm j)\pm(P\pm j)\pm 1)})^K\{x_1{}^K+x_2{}^K+\ldots+x_P{}^K+\ldots\}^{K(Z\pm(S\pm j)\pm(N\pm j1)\pm(P\pm j\pm 1))/t}$
$\in\{X_0\}^{K(Z\pm(S\pm j)\pm(N\pm j)\pm(P\pm j))/t}=\{D_0\}^{K(Z\pm(S\pm j)\pm(N\pm j)\pm(P\pm j))/t}=\{R_0\}^{K(Z\pm(S\pm j)\pm(N\pm j)\pm(P\pm j))/t}$;

In particular, when adding and subtracting finite elements (j) for(±j≤S)combination(N±j≤S)、(p±j≤S), the combination of any finite calculus function sub-items is gradually increased and decreased, The order value and the change of the item order still maintain the regularized distribution principle. Among them: differential and integral have relatively symmetrical reciprocity.

Order value changes of calculus function:
The prerequisites for the proof of the order change of the calculus function are:
(1), The total number of elements (dimensions) is unchanged;
(2), Invariance of forward characteristic mode (arithmetic mean);
(3), Meet the regularized distribution.

The order change is defined as the combination of(N±j)≤S elements in the calculus with the original combination form of the calculus function. The calculus order and term order are still reflected in the linear change of the calculus power function. The traditional calculus symbol is transformed into a polynomial power function.

For example: (S±j)changes are parallel, the order value of the calculus function, and the order change are(M±N±j)±(P±j)under(S±j), get$\{R_0\}^{K(Z\pm(S\pm j)\pm(N+j)\pm(p+j))/t}$; （$j=m_1+m_2+m_3\ldots$）;

Sum of eigenmode combination coefficients:
(11.1)$\{R_0\}^{K(Z\pm(S\pm j)\pm(N\pm j)\pm(P\pm j))/t}=\{2\}^{K(Z\pm(S\pm j)\pm(N\pm j))/t}-1$;

Sum of equation combination coefficients:
(Belonging to calculus multidimensional rings)
(11.2)$\{X_0\text{-}R_0\}^{K(Z\pm(S\pm j)\pm(N\pm j)\pm(P\pm j))/t}for\{0\}^{K(Z\pm(S\pm j)\pm(N\pm j))/t}$;
(Belonging to calculus multidimensional sphere)
(11.2)$\{X_0+R_0\}^{K(Z\pm(S\pm j)\pm(N\pm j)\pm(P\pm j))/t}for\{2\}^{K(Z\pm(S\pm j)\pm(N\pm j))/t}$;

When the total elements of the entire calculus function remain unchanged (N±j=0)combination, it belongs to the calculus original function, which is called 0th order calculus. The order of the combination of the entire order value and the item order. For example, the (S) constant calculus order changes are(S±0), (N±0), (P±j), , and $\{R_0\}^{K(Z\pm S\pm N\pm p)/t}$ is obtained

When the total element (S) of the calculus function is unchanged for (±j) combination, it is the sub-item combination form and (±j) combinations of the entire order value and item order. For example: the changes of the calculus order are(S±0), (N±j), (P±j), and we get $\{R_0\}^{K(Z\pm S\pm(N+j)\pm(p+j))/t}$.

When the total elements of the calculus function and the order value (S±N) are not changed, and (±j)combination is performed, it is the combination of the total term order child items and(±j)combinations. For example: Calculus term sequence combination(S±0), (N±0), (P±j), and we get $\{R_0\}^{K(Z\pm S\pm N\pm(p+j))/t}$

When: The total element of the calculus function is variable (S ± j) combination, which belongs to the parallel calculation$(\pm j=m_1^k+m_2^k+m_3^k+\dots)^k$ which is a combination of subitem elements of the entire calculus order value and term The form is recombined with the increased (j) number. For example: (S) is variable, and the calculus order changes are(S±j), (N±j), (P±j), and we get $\{R_0\}^{K(Z\pm(S\pm j)\pm(N\pm j)\pm(p\pm j))/t}$。

(A), Differential: Reduced orde(N-j)±(P-j):

(11.3) $d^n f(x)^{K(Z\pm S\pm N\pm p)/t}=d^n\{R_0\}^{K(Z\pm S\pm N\pm p)/t}$
$=\{R_0\}^{K(Z\pm S\pm N\pm p)/t}/\{R_0\}^{K(Z\pm S+N+j)/t}$
$=\{R_0\}^{K(Z\pm S\pm(N-j)\pm(p-j))/t}$;

(B), integral: upgrade(N+j)±(P+j)

(11.4) $\int^n f(x)^{K(Z\pm S\pm N\pm p)/t}d^n x=\int^n\{R_0\}^{K(Z\pm S\pm N\pm p)/t}d^n R_0$
$=\{R_0\}^{K(Z\pm S\pm N\pm p)/t}/\{R_0\}^{K(Z\pm S-N-j)/t}$
$=\{R_0\}^{K(Z\pm S\pm(N+j)\pm(p+j))/t}$;

(C), Calculus sign combination (N±j)±(P±j):

(11.5) $d^{(j)}f(x)\cdot\int^{(j)}f(x)d^{(j)}x=\{R_0\}^{K(Z\pm S-N-p)-j)}\cdot\{R_0\}^{K(Z\pm S+N+p)+j)}$
$=\{R_0\}^{K(Z\pm S\pm(N\pm j)\pm(p\pm j))}$;

(D), the asymmetric calculus is converted into a relative symmetric calculus by the logarithm of the circle

(11.6) $\{X\pm R\}^{K(Z\pm(S\pm j)\pm(N\pm j)\pm(P\pm j))/t}=(1-\eta^2)^{K(Z\pm(S\pm j)\pm(N\pm j)\pm(P\pm j))/t}\{X_0\pm R_0\}^{K(Z\pm(S\pm j)\pm(N\pm j)\pm(P\pm j))/t}$;

In the formula: $\{X\neq R\}^{K(Z\pm(S\pm j)\pm(N\pm j)\pm(P\pm j))/t}$; the qualitative and quantitative difference of circular logarithm {X≠R}: $\{X_0=R_0\}^{K(Z\pm(S\pm j)\pm(N\pm j)\pm(P\pm j))/t}$;

Where: Discrete:$(1-\eta^2)^{K(Z\pm(S\pm j)\pm(N\pm j)\pm(P\pm j))/t}$=(0 or 1);

Entanglement type:$(1-\eta^2)^{K(Z\pm(S\pm j)\pm(N\pm j)\pm(P\pm j))/t}$=(0 to 1);

The combination of various forms of point infinite elements has reciprocal symmetry and relative symmetry. For ease of understanding, the asymmetry is emphasized here as "relative symmetry" to distinguish the traditional symmetry.

Proof: Integerity of Calculus Polynomial Order Value Change:

Based on the proven reciprocity of the mathematical combination, the proof of the change of order value and term order adopts the integer iteration method, that is, the multi-element stepwise takes the combination average of an integer(j=1)as the order value and term of the calculus element Order combination changes.

Suppose:$R_O$is the characteristic mode (positive, intermediate, and inverse function average) of the combination of variable elements in the total elements. Under the condition that the total elements are unchanged, the average value of the eigenmode function in the various combinations(K=±0,+1)is not equal to the mean value of the eigenmode function in the reverse direction. In the comparison of the combination items, The average value is constant, which is called the invariant characteristic mode.

The calculus order value change is given by: "Basic eigenmode$\{X_0\}^{K(1)}$"" iterative proof.

(1), (0st order) calculus and basic characteristic modules (basic modules)**;**

The first type of basic module$\{X_0\}^{K(0)}$**:**

The original function (S) dimension multiplicative term is the first term(K=+1,0,-1)(the same applies hereinafter).

(a) For the finite calculus function (S), the dimension is constant(N=0)±(p=0): power function feature: $\{X_0\}^{k(S\pm N\pm 1)/t}$,

(0st order S-0 times) the first kind of basic module: (the first term of the original function forward and reverse):

The first term(P=0)(0-0 combination) is called the average value of the multiplication combination; the combination coefficient$(1/C_{(S+N+0)})^{\pm 0}=1$.

(12.2) $\{X_0\}^{K(0)}=(1/C_{(Z\pm S\pm(N\pm0)\pm0)})^K\{(^{K(S\pm N)}\sqrt{\prod_{(i=p)}}(x_1x_2\ldots x_P)^K\}^{k(Z\pm S\pm(N\pm0)\pm0)/t}$;

(b) For the infinite calculus function(Z±S), the dimension is variable(N=0)±(p=0): power function feature: $\{X_0\}^{k(Z\pm S\pm(N\pm0)\pm0)/t}$,

The first term (p = 0) is generally the multiplication (addition) combined average, and the combination coefficient$(1/C_{(Z\pm S\pm(N\pm0)\pm0)/t)})^K\neq1$;

(12.1) $\{R_\Theta\}^{k(Z\pm S\pm N\pm0)/t}=\sum_{(i=S)}(1/C_{(S\pm N\pm p)})^k[(^{K(S\pm N)}\sqrt{\prod_{(i=p)}}(x_1\ldots x_P)_1{}^k$
$+(^{K(S\pm N)}\sqrt{\prod_{(i=p)}}(x_1x_2\ldots x_P)_2{}^k+\ldots+(^{K(S\pm N)}\sqrt{\prod_{(i=p)}}(x_1x_2x_3\ldots x_P)_p{}^K+\ldots\}]^{k(Z\pm S\pm N\pm1)/t}$;

(0st order S-1 order) the second kind of basic module $\{X_0\}^{K(1)}$: the original term of the calculus (S) dimension is the second term (P ± 1) of forward and reverse (P±1)(1-1 combination) (K=+1,0) arithmetic mean and reciprocal mean(K=-1).

The second type of basic module $\{X_0\}^{K(1)}$

Original function (S) dimension(p±1) characteristic mode of the second term $\{X_0\}^{K(1)}=(1/C_{(S\pm N\pm1)})^K\{\sum_{(i=S)}x_1{}^K\}^{K(Z\pm S\pm N\pm1)/t}$(1-1 combination) combination coefficient$(C_{(S+N+1)})^{\pm1}=S$; called positive and negative continuous average or arithmetic mean.

(12.3) $\{R_\Theta\}^{k(Z\pm S\pm N\pm1)/t}=\sum_{(i=S)}(1/C_{(S\pm N\pm1)})^K\{x_1{}^K+x_2{}^K+\ldots+x_P{}^K+\ldots\}^{K(Z\pm S\pm N\pm1)/t}$
$=[\{^{K(S\pm N)}\sqrt{X}\}^{k(Z\pm S\pm N\pm1)/tt}\approx\{^{K(S\pm N)}\sqrt{D}\}^{k(Z\pm S\pm N\pm1)/t}]$
$=[\{D_0\}^{k(Z\pm S\pm N\pm1)/t}\approx\{X_\Theta\}^{\pm1}]$;

(12.4) $0\leq(1-\eta_\Theta{}^2)^{K(Z\pm S\pm N\pm1)/t}=\sum_{(i=S)}\{X_0\}^{K(Z\pm S\pm N\pm1)/t}/\{R_\Theta\}^{K(Z\pm S\pm N\pm1)/t}\leq1$;

Given that the characteristic modes$\{X_0\}^{K(0)}=\{^{K(S\pm N)}\sqrt{X}\}^{k(Z\pm S\pm N\pm0)/t}\}$ and $\{X_0\}^{K(1)}=(1/C_{(S\pm N\pm1)})^K\{\sum_{(i=S)}x_1{}^K\}^{K(Z\pm S\pm N\pm1)/t}$, a combination of all the variables with the basic characteristic mode as the base to multiply the uncertainty , Is integer. In this way, all can be converted to relative certainty through the logarithmic processing of the circle. In solving the calculus equation, these two kinds of average values have their own applications. The former deals with unknown variables and the latter deals with known variables. This known variable is included in the combination coefficient. It is easy to get and easy to solve the calculus equation. (The same below).

The forward and reverse second term order of the original function is used as the forward and reverse eigenmodes $\{X_0\}^{K(1)}=\{D_0\}^{k(Z\pm S\pm N\pm1)/t}$ is the average value of the basic unit, It is called the "0th order 1-1 combination" basic mode

First-order calculus:

The first-order calculus power function is expressed as "N=±1 combination is the original function and(j=±1)" elements are then combined to become differential,Set of integrals (orders 0 and 1). That is: the second term or penultimate term of the original calculus function (0th order): the order and term of the combination(j=±1),(N=±1)±(p+1).

Suppose: power function change characteristics:(j=±1),(N±j)±(p±j)=(N±1)±(p±1)combination",

(1st order S-0 times) the first kind of basic module: (the first term of the original function forward and reverse):$(1/C_{(Z\pm S\pm(N\pm1)\pm0)})^k=(1/1)^k$:

$$\{X_0\}^{K(0)}=(1/C_{(Z\pm S\pm(N\pm1)\pm0)})^K\{(^{K(S\pm N)}\sqrt{\prod_{(i=p)}}(x_1x_2\ldots x_P)^K\}^{k(Z\pm S\pm(N\pm1)\pm0)/t}$$

(1st order S-1 times) the second type of basic module: (the original function forward and reverse second term):$(1/C_{(S\pm N\pm1)})^k=(1/S)^k$:

$$\{R_\Theta\}^{K(1)}=\{(1/C_{(Z\pm S\pm(N\pm1)\pm(p\pm1))})^k\sum_{(i=S)}(x_i)^k\}^{K(Z\pm S\pm(N\pm1)\pm(p\pm1))/t}$$
$$=\sum_{(i=S)}(1/C_{(Z\pm S\pm(N\pm1)\pm(p\pm1))})^k\{x_1{}^k+x_2{}^k+\ldots+x_P{}^k+\ldots\}^{K(Z\pm S\pm(N\pm1)\pm(p\pm1))/t}$$
$$=\{X_0\}^{K(1)}\ ;$$

Note: the anti-symmetry of the regularization coefficient: (function forward second term combination coefficient = reverse second term combination coefficient)

$(1/C_{(Z\pm S-N-1)})^{-1}=(1/C_{(Z\pm S\pm(N-1)\pm(p-1))})^{-1}$;
$|(1/C_{(Z\pm S-N-1)})^{-1}|=|(1/C_{(Z\pm S+N+1)})^{+1}|$;
$|\{X_0\}^{-1}|\approx|\{D_0\}^{+1}|$;

First-order differential proof: Iterate with forward fundamental module $\{X_\Theta\}^{+1}$:—

have: : $[\{X_0\}^{k(Z\pm S\pm N\pm p)/t}=[\{X_0\}^{k(Z\pm S\pm N\pm p)/t}/\{X_0\}]^{+1}\cdot\{X_0\}^{+1}$
$=[\{X_0\}^{k(Z\pm S\pm(N+1)\pm(p+1)}/\{X_0\}^{k(Z\pm S\pm N\pm p)/t}]^{-1}\cdot\{X_0\}^{+1}$
$=\{[(1/C_{(S\pm(N-1)\pm(p-1))})^{-1}\prod_{(i=(p-1)}\{x_i\}^{-1}]^{k(Z\pm S\pm(N-1)\pm(p-1))/t}\cdot\{X_0\}^{+1}$
$=[\{X_0\}^{-k(Z\pm S\pm(N-1)\pm(p-1))/t}\cdot\{X_0\}^{+1}$

Move $\{X_0\}^{+1}$ to the left of the equal sign to achieve first order differentiation(13.1) $d\{X_0\}^{k(Z\pm S\pm N\pm p)/t}=\{X_0\}^{k(Z\pm S\pm N\pm p)/t}/\{X_0\}^{+1}$

$$=(1/C_{(Z\pm S\pm(N-1)\pm(p-1))})^{-1}\{\prod_{(i=(p-1)}(x_i)^{-1}\}^{k(Z\pm S\pm(N-1)\pm(p-1))/t}$$
$$=\{X_0\}^{k(Z\pm S\pm(N-1)\pm(p-1))/t}=\{X_0\}^{-1};$$

(13.2) $0\le(1-\eta^2)^{K(Z\pm S\pm(N-1)\pm(p-1))/t}=\{X_0\}^{k(Z\pm S\pm(N-1)\pm(p-1))/t}/\ \{X_0\}^{k(Z\pm S\pm(N+1)\pm(p+1))/t}\le1$

Conversely, the integral is raised to the first order and iterated with the inverse basic module $\{X_\Theta\}^{-1}$ it also holds:

(13.3) $\int\{X_0\}^{k(Z\pm S\pm N\pm p)/t}dx=\{X_0\}^{k(Z\pm S\pm N\pm p)/t}/\{X_0\}^{-1}$

$$=\{X_0\}^{+k(Z\pm S\pm(N+1)\pm(p+1))/t}=\{X_0\}^{+1};$$

(13.4) $0\le(1-\eta^2)^{K(Z\pm S\pm(N+1)\pm(p+1))/t}=\{X_0\}^{k(Z\pm S\pm(N+1)\pm(p+1))/t}/\{X_0\}^{k(Z\pm S\pm(N-1)\pm(p-1))/}\le1$;

Merge: a collection of the above calculus

First order calculus characteristic modulus function:

(13.5) $\{R_\Theta\}^{K(Z\pm S\pm(N\pm1)\pm(p\pm1))/t}=\{R_\Theta\}^{K(Z\pm S\pm(N\pm1)\pm\pm(p\pm1\pm0))/t}+\{R_\Theta\}^{K(Z\pm S\pm(N\pm1)\pm(p\pm1\pm1))/t}+\ldots+\{R_\Theta\}^{K(Z\pm S\pm(N\pm1)\pm(p\pm1\pm p))/t}$;

First order calculus circle logarithmic equation:

(13.6) $(1-\eta^2)^{K(Z\pm S\pm(N\pm1)\pm(p\pm1))/t}=(1-\eta^2)^{K(Z\pm S\pm(N\pm1)\pm((p\pm1\pm0))/t}+(1-\eta^2)^{K(Z\pm S\pm(N\pm1)\pm(p\pm1\pm1))/t}+\ldots+(1-\eta^2)^{K(Z\pm S\pm(N\pm1)\pm(p\pm1\pm p))/t}$;

(3) Second-order calculus

That is, the third or last term of the original function: (j=±2),"(N=±2),(p±j =p+2)combination", (k=+1,0):

The second-order calculus power function is expressed as "N=±1 combination is the original function and(j=±1)" elements and then combined to become a set of differentiation and integration (0st order + 1st order + 2st order).

Let: change characteristics of power function(j=2)"(N±j)±(p±j)=(N±2)±(p±2)combination",

(2st order (S±0) order) basic module (the first term of the original function's forward and reverse):

$$\{X_0\}^{K(0)}=(1/C_{(Z\pm S\pm(N\pm2)\pm0)})^K\{\prod_{(i=(N\pm p))}(x_i\,x_j)^K\}^{k(Z\pm S\pm(N\pm2)\pm0)/t}$$

(1st order(S±1)degree) basic mode (positive and reverse second term of the original function):

$$\{X_0\}^{K(1)}=\{D_0\}^{k(Z\pm S\pm(N\pm2)\pm1)/t}\approx\{X_0\}^{k(Z\pm S\pm(N\pm2)\pm1)/t};$$
$$=\sum_{(i=S)}(1/C_{(Z\pm S\pm(N+2)\pm1))})^k\{x_1{}^k+x_2{}^k+\ldots+x_P{}^k+\ldots\}^{k(Z\pm S\pm(N\pm2)\pm1)/t}=\{X_\Theta\}^{+1}$$

(2st order(S±2) times) basic module (the third term of the original function's forward and reverse directions):

$$\{X_0\}^{K(2)}=\prod_{(i=(p\pm2))}\{X_0\}^{+1}\{X_0\}^{+1}$$
$$=(1/C_{(Z\pm S\pm(N\pm2)\pm2)})^{+1}\{\prod_{(i=(p\pm2))}(x_i\,x_j)^{+1}\}^{k(Z\pm S\pm(N\pm2)\pm2)/t}$$

In particular:

(1), anti-symmetry of regularization coefficient (forward third term combination coefficient = reverse third term combination coefficient)

$$|(1/C_{(Z\pm S\pm(N+2)\pm2)})^{-1}|=|(1/C_{(Z\pm S\pm(N+2)\pm2)})^{+1}|\ ;$$

(2), $\{X_0\}^{K(2)}=\prod_{(i=(p\pm2))}\{X_0\}^{K(1)}\{X_0\}^{K(1)}$ represents two basic feature mode sets, namely: calculus function The "2-2 combination" of two elements is different from the element's multiplicative quadratic$(X_0)^{K2}$, $\{X_0\}^{K(2)}\neq(x_0)^{K2}$. Note: The symbols are different.

Proof: Second-order differential proof:

There are two equivalent methods to prove the second-order rise and fall of calculus:

(1) 、Calculus function $\{X_0\}^{K(1)}=\{X_0\}^{k(Z\pm S\pm(N\pm1)\pm(p\pm1))/t}$ and (0th order 1 item order) Combination of raising and lowering of the basic module $\{X_0\}^{K(1)}=\{X_0\}^{k(Z\pm S+N+1)/t}$.

$$\{X_\Theta\}^{K(1)}/\ \{X_0\}^{k(Z\pm S\pm(N\pm1)\pm(p\pm1))/t}=\{X_0\}^{k(Z\pm S\pm(N\pm2)\pm(p\pm1))/t}=\{X_\Theta\}^{K(1)}\{X_\Theta\}^{K(1)}=\{X_\Theta\}^{K(2)};$$

(1) 、The original function $\{X_0\}^{K(0)}=\{X_0\}^{k(Z\pm S\pm(N\pm0)\pm(p\pm1))/t}$and (2nd-order 1-term order) at The combination of module $\{X_\Theta\}^{K(2)}$ lifting;

$$\{X_\Theta\}^{K(0)}/\{X_0\}^{k(Z\pm S\pm(N\pm2)\pm(p\pm2))/t}=\{X_0\}^{k(Z\pm S\pm(N\pm2)\pm(p\pm2))/t}=\{X_\Theta\}^{K(1)}\{X_\Theta\}^{K(1)}=\{X_\Theta\}^{K(2)};$$

heve: Differential second order

$$[\{X_0\}^{k(Z\pm S\pm(N\pm0)\pm(p\pm1))/t}=[\{X_0\}^{k(Z\pm S\pm(N\pm0)\pm(p\pm1))/t}/\{X_0\}^{+(1)}]^{+(1)}\cdot\{X_\Theta\}^{+(1)}$$
$$=[\{X_0\}^{k(Z\pm S\pm(N-1)\pm(p-1))/t}$$
$$=[\{X_0\}^{k(Z\pm S\pm(N-1)\pm(p-1))/t}/\{X_0\}^{+(1)}]^{+(1)}\cdot\{X_\Theta\}^{+(1)}$$
$$=[\{X_0\}^{+(1)}/\ \{X_0\}^{k(Z\pm S\pm(N-1)\pm(p-1))/t}]^{-1}\cdot\{X_\Theta\}^{+(1)}\{X_\Theta\}^{+(1)}$$
$$=[\{X_\Theta\}^{k(Z\pm S\pm N\pm p))/t}/\ \{X_\Theta\}^{+(2)}]^{\pm1}\cdot\{X_\Theta\}^{+(2)}$$
$$=\{\sum_{(i=S)}(1/C_{(S\pm(N-2)\pm(p-2))})^{-1}\prod_{(i=(p-2))}(x_1x_2)^{-1}+\ldots\}^{-1}\cdot\{X_\Theta\}^{+(2)}$$
$$=[\{X_\Theta\}^{k(Z\pm S\pm(N-2)\pm(p-2))/t}\cdot\{X_0\}^{k(Z\pm S+(N+2)\pm(p+2)/t}$$

Move$\{X_\Theta\}^{+(2)}=\{X_0\}^{k(Z\pm S+(N+2)\pm(p+2)/t}$to the left of the equal sign, and note the anti-symmetry of the regularized combination coefficients: get the second-order calculus function.

(14.1) $\{X_0\}^{k(Z\pm S\pm N\pm p)/t}/\{X_0\}^{k(Z\pm S+(N+2\}\pm(p+2)/t}$
$=\sum_{(i=S)}(1/C_{(Z\pm S\pm(N-2)\pm(p-2))})^{-1}\{\prod_{(i=(p-2))}(x_1x_2)^{-1}+\dots\}^{k(Z\pm S\pm(N-2)\pm(p-2))/t}$
$= \{X_0\}^{k(Z\pm S\pm(N-2)\pm(p-2))/t}= \{X_0\}^{-(2)}$;
(14.2) $0\le(1-\eta^2)^{K(Z\pm S\pm(N-2)\pm(p-2))/t}=\{X_0\}^{-2}/\{X_0\}^{k(Z\pm S+N+2)/t}\le1$;
Conversely, the second-order integral also holds:
(14.3)$\{X_0\}^{k(Z\pm S\pm N\pm p)/t}/ \{X_0\}^{K(Z\pm S\pm(N-2)\pm(p-1))/t}=\{X_0\}^{k(Z\pm S\pm(N+2)\pm(p+2))/t}$;
(14.4) $0\le\sum_{(i=S)}(1-\eta^2)^{K(Z\pm S\pm(N+2)\pm(p+2))/t}=\{X_0\}^{-(2)}/\{X_0\}^{+(2)}\le1$;
Merge: the collection of the individual subitems
Second-order calculus characteristic modulus function:二
(14.5) $\{X_0\}^{K(Z\pm S\pm(N\pm2)\pm(p))/t}=\{X_0\}^{K(Z\pm S\pm(N\pm2)\pm(p\pm0))/t}+\{X_0\}^{K(Z\pm S\pm(N\pm2)\pm(p\pm1))/t}+\dots+\{X_0\}^{K(Z\pm S\pm(N\pm2)\pm(p\pm2))/t}+\dots$;
Second order calculus circle logarithmic equation:
(14.6) $(1-\eta^2)^{K(Z\pm S\pm(N\pm2)\pm(p))/t}=(1-\eta^2)^{K(Z\pm S\pm(N\pm2)\pm(p\pm0))/t}+(1-\eta^2)^{K(Z\pm S\pm(N\pm2)\pm(p\pm1))/t}+\dots$
$+(1-\eta^2)^{K(Z\pm S\pm(N\pm2)\pm(p\pm p))/t}+\dots$;

Order value calculus:

The (j) -order calculus usesN=±j. The combination is the original function and(j=≤S)elements, and then combined to become differential and integral.

The (j) -order calculus power function is expressed as"N=±1 combination is the original function and(j=±1)"" elements and then combined to be differential and integral (0st order + 1st order + 2st order + ... + (jst Order).

Let: change characteristics of power function(j=≤S)"(N=≤S),(N±≤S)±(p±≤S)=(N±j)±(p±j)combination

Note: the anti-symmetry of the regularization coefficients

$(1/C_{(Z\pm S\pm(N-j)\pm(p-j))})^{-1}= (1/C_{(Z\pm S-N-j)})^{-1}$; $|(1/C_{(Z\pm S-N-j)})^{-1}|=|(1/C_{(Z\pm S+N+j)})^{+1}|$:

Proof:(±Kj)order calculus proof (K=+1,0,-1):

Prove the combined rise and fall of K (j) order value and term order of calculus:

Let:(N=±j)order adopt the basic mode.iterating up and down in sequence$\{X_0\}^{k(Z\pm S\pm(N\pm j\pm1)\pm(p\pm j\pm1))/t}=\{X_0\}^{k(Z\pm S\pm N+1))/t}=\{X_0\}^{k(1)}$;

$\{X_\Theta\}^{k(j)}=\{X_0\}^{k(Z\pm S\pm(N\pm j)\pm(p\pm j))/t}=\prod_{(i=(p-j)}\{X_\Theta\}^{k(1)}\cdot\{X_\Theta\}^{k(1)}\cdot\dots\cdot\{X_\Theta\}^{k(1)}$;

Similarly, there is
$[\{X_0\}^{k(Z\pm S\pm(N\pm0)\pm(p))/t}/\{X_0\}^{k(j)}]^{\pm1}\cdot\{X_0\}^{Kj}$
$= [\{X_0\}^{k(j)}/\{X_0\}^{k(Z\pm S\pm(N\pm0)\pm(p))/tt}]^{-1}\cdot\{X_0\}^{k(j)}$
$= (1/C_{(Z\pm S\pm(N\pm j)\pm(p\pm j))})^{k}\prod_{(i=(N\pm j)}\{x_{(p-j)}{}^{k(Z\pm S\pm(N\pm j)\pm(p\pm j))/t}\}^{-1}\cdot\{X_0\}^{k(j)}$
$= [\{X_0\}^{k(Z\pm S\pm(N-j)\pm(p-j))/t}\cdot\{X_0\}^{k(j)}$
$= \{X_0\}^{k(Z\pm S\pm(N-j)\pm(p-j))/ttj}\cdot\{X_0\}^{k(Z\pm S\pm(N+j)\pm(p+j))/t}$
$= \{X_0\}^{+k(j)}\cdot\{X_0\}^{-k(j)}$;
(15.1) $\{X_0\}^{k(Z\pm S\pm(N-j)\pm(p-j))/t}= (1-\eta_j{}^2)^{K(Z\pm S\pm(N\pm j)\pm(p\pm j))/t}\cdot\{X_0\}^{k(Z\pm S\pm(N+j)\pm(p+j))/tj}$
(15.2) $0\le\sum_{(i=S)}(1-\eta_j{}^2)^{K(Z\pm S\pm(N-j)\pm(p-j))/t}= [\{X_0\}^{k(Z\pm S\pm(N\pm j)\pm(p\pm j))/t}/\{X_0\}^{K(j)}]\le1$;
Combining the various calculus orders and terms into a set of (j) order calculus characteristic modules and circle logarithms:
(15.3) $\{X_0\}^{K(Z/t)}= \{X_0\}^{K(Z\pm S\pm(N\pm0)\pm(p\pm0))/t}+\{X_0\}^{K(Z\pm S\pm(N\pm1)\pm(p\pm1))/t}+\dots+\{X_0\}^{K(Z\pm S\pm(N\pm j)\pm(p\pm j))/t}$;
(15.4) $(1-\eta^2)^{K(Z/t)}=(1-\eta^2)^{K(Z\pm S\pm(N\pm j)\pm(p\pm j))/t}$
$=(1-\eta^2)^{K(Z\pm S\pm(N\pm0)\pm(p\pm0))/t}+(1-\eta^2)^{K(Z\pm S\pm(N\pm1)\pm(p\pm1))/t}$
$+(1-\eta^2)^{K(Z\pm S\pm(N\pm2)\pm(p\pm2))/t}+\dots+(1-\eta^2)^{K(Z\pm S\pm(N\pm j)\pm(p\pm j))/t}$;

The logarithmic value of the combination function with the most positive authentic circle "p-p" (geometric representation of perfect circle, sphere (ring), curve, surface) is:
(15.5) $\{R_\Theta\}^{K(Z/t)}=\{R_\Theta\}^{K(Z\pm(S\pm j)\pm(N\pm0)\pm(p\pm0))/t}+\{R_\Theta\}^{K(Z\pm\pm(S\pm j)\pm(N\pm1)\pm(p\pm1))/t}+\dots+\{R_\Theta\}^{K(Z\pm\pm(S\pm j)\pm(N\pm j)\pm(p\pm j))/t}$;
(15.6) $(1-\eta_\Theta{}^2)^{K(Z/t)}=\{X_0\}^{K(Z/t)}/\{R_\Theta\}^{K(Z/t)}=(1-\eta^2)^{K(Z/t)}/(1-\eta_\Theta{}^2)^{K(Z/t)}$
$=(1-\eta_0{}^2)^{K(Z\pm\pm(S\pm j)\pm(N\pm0)\pm(p\pm0))/t}+(1-\eta_1{}^2)^{K(Z\pm\pm(S\pm j)\pm(N\pm1)\pm(p\pm1))/t}$
$+(1-\eta_2{}^2)^{K(Z\pm(S\pm j)\pm(N\pm2)\pm(p\pm2))/t}+\dots+(1-\eta_p{}^2)^{K(Z\pm\pm(S\pm j)\pm(N\pm j)\pm(p\pm j))/t}$;
(15.7) $(\eta_\Theta)^{K(Z/t)}=\sum_{(i=S)}[(\eta)^{K(Z/t)}/(\eta_\Theta{}^2)]^{K(Z/t)}$
$=(\eta_0{}^2)^{K(Z\pm\pm(S\pm j)\pm(N\pm0)\pm(p\pm0))/t}+(\eta_1)^{K(Z\pm\pm(S\pm j)\pm(N\pm1)\pm(p\pm1))/t}$
$+(\eta_2)^{K(Z\pm(S\pm j)\pm(N\pm2)\pm(p\pm2))/t}+\dots+(\eta_p)^{K(Z\pm\pm(S\pm j)\pm(N\pm j)\pm(p\pm j))/t}$;

The formulas (15.6) and (15.7) reflect the movement and superposition of the center of a perfect sphere (ring), curve, or surface with a perfect logarithm of the perfect circle. It is called eccentric elliptic curve (function) or topological circle logarithm.

For the change of the total number of calculus elements(S±N±j)(j=1,2,3 ... natural numbers), it becomes parallel calculus, which produces various invariant characteristic modules of parallel real infinite combinations and parallel Logarithm of latent infinite combination circle: $\sum_{(i=(S\pm N\pm j))}\{R_{\Theta}\}^{K(Z/t)}$; $\sum_{(i=(S\pm N\pm j))}(1-\eta_{\Theta}{}^{2})^{K(Z/t)}$, $K(Z/t)=K(Z\pm(S\pm j)\pm(N\pm j)/t$

In the above proof process, the traditional calculus and pattern recognition features are still maintained and transformed:

Reconstruction of the concept of the change of the order value of the traditional calculus function is a combination of "infinite small division infinity and limit" as a basic characteristic mode as a unit body, which is raised and lowered according to order value and term order, linear with integer (zero error) Expansion eliminates the traditional "error analysis term" to ensure linear expansion of the calculus power function.

The axiomatization of the traditional logical algebra concept assumes that "divided by itself must be 1" as "divided by itself is not necessarily 1", using the characteristic mode of integer meaning as the unit body, and still maintaining the power of calculus Expand linearly.
(3) The above proof process: the polynomial-calculus-logical algebra-algebraic integer equations are integrated into a characteristic module and a logarithm of a circle with isomorphism, unity, and relative symmetry.

Higher-order calculus equations and circular logarithmic algorithms:
The point infinity is a set of higher-order "univariate or homogeneous (j≤S) -element S-order" calculus equations of any finite (Z ± S) -dimensional combination of unknown and known variables. Two of these variables form a relatively symmetrical real infinite characteristic mode (average of positive, medium, and inverse combination functions), establish an integer logarithm with "basic characteristic mode" as the base, and become a logarithm of latent infinite circle in a finite area. . In this way, the two "infinite" of calculus variables (note: under the condition of finite elements, traditional calculus is called "indefinite integral and definite integral" or "series" expansion) are normalized into a unified, linear power function (Path integration) to realize the arithmetic superposition of the logarithm of the circle and the logarithmic factor of the circle. In other words, the calculation of the calculus equation is changed to the arithmetic calculation of the logarithmic factor of the circle, which realizes that there is no "error analysis" and the irrelevant mathematical model is accurately solved in the interval [0 to 1].

So far, traditionally polynomials—calculus equations—pattern recognition consisting of a limited number of unknown and known variable elements have all avoided asymmetry and emphasized symmetrical balance. among them:

Polynomial equations (zero-order calculus equations): Abel's impossible theorem states that "equalities above 5th order cannot obtain root solutions. At present, only discrete statistical calculations are performed based on Galois group theory and logical algebra, which plays a very good role in big data calculations. But the calculation procedure is complicated, and the logical symbols are difficult to grasp. It shows that their mathematical foundation is not strong, and there is still room for improvement. Mathematicians expect four convenient mathematical operations to be performed. When an arbitrary high-dimensional polynomial becomes a zero-order calculus equation here, it still satisfies the integer solution of the polynomial, and can substitute logical algebra by itself. When the polynomial equation emphasizes symmetry, it is suitable for discrete calculations. Such as: pattern recognition calculations (explained later).

Higher-order calculus equations: Most calculus equations are entangled-discrete polynomials. There is nothing they can do about them. There are many algorithms to solve, almost all of them are calculated by processing "error analysis". Basically, the traditional concept of calculus is incomplete. It becomes an calculus equation of any order here, which still satisfies the integer solution of the polynomial, and can replace logical algebra. When the asymmetry of the equation is emphasized, the entangled calculation is adapted.

Pattern recognition (that is, the point-infinite calculus equation of homogeneous binary (Z ± S ± N) times): their center is called the “weighted average”, which is actually a discrete calculation of the second-order calculus equation. The power function is $K(Z\pm(S\pm j)\pm(N\pm j)\pm(P\pm j))/t$; (j≥2), (N=2).

In other words, pattern recognition can also be converted into circular logarithmic and linear logarithmic factor linear calculations, which complements the mathematical foundation of the computer, and is conducive to simplifying the design of the program and architecture of the chip and building higher computing capabilities.
Point infinity takes any finite K(Z±S±N) unknown and known variable elements in an infinite, and performs a unique combination of infinite programs to form a polynomial—calculus characteristic module. (Unknown±known) variable elements Polynomials-calculus equations, which are collectively referred to as one-ary higher-order calculus equations. Calculus equations have partial calculus equations and a separate chapter is explained (omitted).

Higher-order calculus equation(N=±j),(P=±j)is a set of formulas (5.8.1)-(5.8.6). The simplified description is written as:

(16.1) $\{X\pm D\}^{K(Z\pm S\pm N\pm P)/t}=(1-\eta^2)^{K(Z\pm S\pm N\pm P)/t}\{X_0\pm D_0\}^{K(Z\pm S\pm N\pm P)/t}$
$=(1-\eta^2)^{K(Z\pm S\pm N\pm P)/t}\{0,2\}^{K(Z\pm S\pm N\pm P)/t}\{D_0\}^{K(Z\pm S\pm N\pm P)/t}$;

The logarithm of the unit circle deals with the value of the element distribution in the same level,

(16.2) $(1-\eta_H^2)^{K(Z)/t}=[(1-\eta_{H1}^2)+(1-\eta_H^2)+\ldots+(1-\eta_H^2)+\ldots+(1-\eta_{Hq}^2)]^{K(Z)/t}$;

Odd circle logarithm

(16.3) $(1-\eta^2)^{K(Z)/t}=(1-\eta^2)^{+K(Z)/t}+(1-\eta^2)^{0K(Z)/t}+(1-\eta^2)^{-K(Z)/t}$;

Even circle logarithm

(16.4) 、 $(1-\eta^2)^{K(Z)/t}=(1-\eta^2)^{+K(Z)/t}+(1-\eta^2)^{-K(Z)/t}$;

3D Cartesian Coordinate circle Logarithm

(16.5) 、$(1-\eta^2)^{K(Z)/t}=(1-\eta_x^2)^{K(Z)/t}\mathbf{i}+(1-\eta_y^2)^{K(Z)/t}\mathbf{j}+(1-\eta_z^2)^{K(Z)/t}\mathbf{k}$;

Circle Coordinates Circle Logarithm

(16.6) 、 $(1-\eta^2)^{K(Z)/t}=(1-\eta_{【yz】}^2)^{K(Z)/t}\mathbf{i}+(1-\eta_{【zx】}^2)^{K(Z)/t)}\mathbf{j}+(1-\eta_{【xy】}^2)^{K(Z)/t}\mathbf{k}$;

Circular logarithm of the spin equation (electromechanical-electromagnetic equation)

(16.7) 、$(1-\eta^2)^{K(Z)/t}=(1-\eta_{【y-z】}^2)^{K(Z)/t}\mathbf{i}+(1-\eta_{【z-x】}^2)^{K(Z)/t}\mathbf{j}+(1-\eta_{【x-y】}^2)^{K(Z)/t}\mathbf{k}$;

Logarithm of circle in Hilbert space

(16.8) 、$(1-\eta^2)^{K(Z)/t}=(1-\eta^2)^{K(Z\pm S\pm N\pm P)/t}$
$=(1-\eta^2)^{K(Z\pm S\pm N\pm 0)/t}+(1-\eta^2)^{K(Z\pm S\pm N\pm 1)/t}+\ldots+(1-\eta^2)^{K(Z\pm S\pm N\pm P)/t}$;

Area value of logarithm of circle

(16.9) 、$0\leq(1-\eta^2)^{K(Z\pm S\pm N\pm P)/t}=\!\!\to(1-\eta^2)^{K(Z\pm S\pm N\pm 1)/t}\leq 1$;

In the formula: $=\to$ means "normalization", that is, any non-linear combination is converted into a linear superposition combination.

The application of the circular logarithmic algorithm can integrate (linear and non-linear, continuous and discontinuous, symmetric and asymmetry, random and regular, probability and topology) polynomials-calculus equations, and perform "irrelevant mathematical models" uniformly. , Traditional arithmetic solution between [0 to 0]. That is to say, from the one-variable linear equation to any higher-order calculus equation are all root solutions using the same algorithm.

(5), The calculation steps are briefly as follows:

(1), According to the password notification (for the information transmission of multi-element password labeling): the number of elements (S = 1,2, ... natural numbers) (dimensional power), calculus order value (±N=0,1,2,…≤S); the corresponding boundary conditions $\{X\}^{K(Z\pm S\pm N\pm P)/t}=D$; get $\{D_0\}^{K(Z\pm S\pm N\pm P)/t}$ according to the equation coefficient. In other words, with the above basic values, you can easily (manually, simple computer calculations) solve the elements.

(2) Obtain the logarithmic equation of the unit circle:

(17.1) $(1-\eta_H^2)^{K(Z\pm S\pm N\pm P)/t}=[(1-\eta_{ah}^2)+(1-\eta_{bh}^2)+\ldots+(1-\eta_{ph}^2)]^{K(Z\pm S\pm N\pm P)/t}=\{1\}^{K(Z\pm S\pm N\pm P)/t}$;

(3) Calculate the logarithmic field value of the circle:(3)、计算圆对数域值：

(17.2) $0\leq(1-\eta^2)^{K(Z\pm S\pm N\pm P)/t}=[{}^{K(S\pm N)}\sqrt{D}/\{D_0\}^{K(Z\pm S\pm N\pm P)/t}=({}^{K(S\pm N)}\sqrt{X})/\{D_0\}^{K(Z\pm S\pm N\pm P)/t}\leq 1$;

(4) Discriminant equation properties:

(a),Discrete calculation:

(17.3) $(1-\eta^2)^{K(Z\pm S\pm N\pm P)/t}=[{}^{K(S\pm N)}\sqrt{D}/\{D_0\}^{K(Z\pm S\pm N\pm P)/t}=1$;

(b),Entanglement analysis:

(17.4) $(1-\eta^2)^{K(Z\pm S\pm N\pm P)/t}=[{}^{K(S\pm N)}\sqrt{D}/\{D_0\}^{K(Z\pm S\pm N\pm P)/t}\leq 1$;

(5)、Conventional discrete calculations:

(17.5) $(1-\eta^2)^{K(Z\pm S\pm N\pm P)/t}=(1-\eta_H^2)^{K(Z\pm S\pm N\pm P)/t}=1$;

(6)、Calculate the correspondence between discreteness and entangled elements

(17.6) $\{X\}=(1-\eta^2)(1-\eta_H^2)\{D_0\}$;

(7)、Calculate the logarithmic equation factor elements:

(17.7)$\{X_a\}=(1-\eta^2)(1-\eta_a^2)\{D_0\}$;

$\{X_b\}=(1-\eta^2)(1-\eta_b^2)\{D_0\};\ldots;$

$\{X_p\}=(1-\eta^2)(1-\eta_p^2)\{D_0\}$;

(8)、Correspondence between the logarithmic factor of the circle and the coefficient of the calculus equation:

(17.8)$\{D_0\}^0=(A)/C_{(Z\pm S\pm N\pm 0)}$;

$\{D_0\}^1=(B)/C_{(Z\pm S\pm N\pm 1)},\ldots$;

$\{D_0\}^p=(P)/C_{(Z\pm S\pm N\pm P)}$;

Where: Apply discrete$(1-\eta^2)=(0 \text{ or } 1)$ to calculate specific elements:

[1] , For the original setting of step (5)$(1-\eta^2)^{K(Z\pm S\pm N\pm P)/t}=(1-\eta_H^2)^{K(Z\pm S\pm N\pm P)/t}=1$

Discrete Type calculation.$(1-\eta^2)^{K(Z\pm S\pm N\pm P)/t}=(1-\eta_H^2)^{K(Z\pm S\pm N\pm P)/t}=1$

The circular logarithmic factor"$(1-\eta_i^2)$-(η_i)" corresponds to the numerical elements with regular arrangement, and the corresponding {D0} characteristic mode (positive, middle, and inverse function averages) and dynamic calculation. The (D0) eigenmode depends on the calculus coefficients (A), (B), ..., (P) on the regularized combination coefficients, that is, the subterms of the individual repeated averages of infinite points. Entanglement calculations based on logarithms of circles can be quickly solved. For example: logarithm of unit circle:

$(1-\eta_H^2)=(1-\eta_a^2)+(1-\eta_b^2)+\ldots+(1-\eta_p^2)=(0 \text{ or } 1)$;

Infinite "characteristic mode" corresponding to open points: (average of positive, middle, and inverse functions)

The logarithmic factor "$(1-\eta^2)$-(η_i)"corresponds to specific objects (including random and regular, continuous and discontinuous, sparse and non-sparse, and various events of the same type and different types) Parallel / serial numerical and dynamic simulations are performed, and the entangled-discrete calculation of the logarithm of the circle can also be used to obtain the element numerical solution.

For example: Topological circle logarithm:$(1-\eta^2)=(1-\eta_0^2)+(1-\eta_1^2)+\ldots+(1-\eta_p^2)=(0 \text{ to } 1)$;
corresponding closed latent infinite "round logarithm".

[2], For step (6), the relationship between the discrete type and the entangled type is processed. (1-ηH2) Discrete circle logarithm;$(1-\eta_H^2)$ Entanglement circle logarithm. There are: $\{X_a\}=(1-\eta^2)(1-\eta_a^2)\{D_0\}$. The logarithm of the topological circle is calculated first, and then the discrete calculation is performed to find the element values, positions, and density. Called the circular logarithmic algorithm. (8) Provide the mathematical basis for making a real quantum computer.

If you want to make a real quantum computer, you just need to add a new generation of "topological circular logarithm $(1-\eta^2)$ Procedure ". Among them, the basis of computer mathematics in the traditional sense is here, and further proof of completeness is obtained.

(9) Establish the basis of graph algorithm.

The above$\{X_a\}=(1-\eta^2)(1-\eta_H^2)\{D_0\}$ calculation ideas: In May 1984, the author attended a speech at the Fourth National Conference on Map Computing in Qingdao, Shandong Province, and proposed the above algorithm as a "graph algorithm" It was called 'coefficient' at the time). Title: "Calculation of Reinforcing Graph Algorithm for Reinforced Concrete Flexural Members", the content is to construct "graphical model of reinforced concrete members subjected to bending moment, concrete section stress and reinforced section" (the manuscripts have been kept). The traditional verification calculation is highly consistent with the computer. "The concept of stress on the reinforced concrete members of the textbook was reformed. It was well received by the chairman of the meeting and experts, and signed a note. It still has positive significance. The textbook is still the theoretical concept at that time without substantial progress.

At that time, he thought that the above algorithm might be a special case without submission. In the future, we continued to explore in depth, trying to expand the special case into today's general circular logarithm, and qualitative and quantitative progress occurred. And give a more complete mathematical logic and proof. Realize the traditional arithmetic four arithmetic algorithms to accurately (zero error) solve arbitrary high-order polynomial equations, higher-order calculus equations, and expand logical algebra to obtain a unified algorithm. Greatly enriched the connotation of contemporary mathematics.

Mathematical Relativity: Summary and End of Mathematics:
So far, the development history of human mathematics has experienced more than 5000 years. The sudden development started from the 17-18th century Napier-Euler logarithm and Newton polynomial-calculus, and entered the construction of mathematical analysis and logical calculation in the 19-20th century In the 21st century, mathematicians are still studying the basic problems of mathematics, and a large number of century-old mathematical problems have not been solved.

Mathematics has gone through calculus analysis and group theory, and has proposed various algorithms and big data statistics, pattern recognition, blockchain, and exploring artificial intelligence engineering. For example, pattern recognition commonly used in computers is the application of "homogeneous finite finite multiple (big data) equations" in computer program design. Today's computer giants try to make quantum computers with universal calculations, that is, "equal infinite arbitrarily infinite multivariate entangled equations", and find that mathematics is not enough.

At present, computers are called novel quantum computers, which can handle 56 qubits to 72 qubit calculations. The computing power is that ordinary computer calculations take many days of calculations and can be solved in 20 seconds, but these calculations are actually adapted to discrete equations Calculate the total combination coefficient {2} p (p = 56-72) qubits. Can it be improved again? It is difficult, and it is restricted by the bottleneck of the theory and structure of chip manufacturing. For example, the 2nm process has been reached, and the optical quantum process has also been proposed. However, none of them has entered into the entangled calculations with "mutual restraint, mutual fusion, and interaction". The concept of "quantum entanglement" as a theory of computer mathematics has not reached true integrity.

Today, scientific development has put forward the idea that there is an inherent close connection and interaction between "micro quantum-macro universe-human brain (thinking and information)". Looking at the various functions and equation algorithms of existing mathematics, they are inadequate. Mathematics has become a shackle for the continued development of science. Mathematicians have proposed that polynomial-calculus-pattern recognition should be reformed and colorful mathematics should be integrated. For hundreds of years, I don't know how many mathematicians have been struggling to pursue, and even their whole lives are still fruitless.

Mathematical reform is like the theme song of the Chinese TV series "Journey to the West", "Dare to ask where is the road? The road is at the foot." It is said that Sun Wukong in "Journey to the West" did not believe in the Emperor and the ghosts, "heaved the heavenly palace" and disturbed the order of the heavenly palace. Similarly, there are all kinds of schools, axiomatics, hypotheses, and authorities in the palace of mathematics. They each occupy a certain field, and no one is compatible with them. The contradiction is very sharp. The existing mathematical ideas and habits are hard to break through.

In 1967, the American mathematician Langlands and others discovered that mathematical algorithms in many fields have close correlations and commonality with each other. They proposed to try to unify algebra, number theory (arithmetic), geometry, and group theory, and required the application of "the simplest The "formula" is limited to [0 to 1] for infinite arithmetic calculations and is called the Langlands program. The Langlands program was proved here, and the unity of the point infinite calculus equation and the logarithmic circular equation was obtained.

(17.1) $\{X\pm D)^{k(Z\pm S\pm(N\pm j)\pm(p\pm j))/t}=Ax^{k(Z\pm S\pm(N\pm j)\pm(0\pm j))/t}\pm Bx^{k(Z\pm S\pm(N\pm j)\pm(1\pm j))/t}+\dots$
$\pm px^{k(Z\pm S\pm(N\pm j)\pm(p\pm j))/t}+D$
$= (1-\eta^2)^{k(Z\pm S\pm(N\pm j)\pm(p\pm j))/t}\{X_0\pm D_0)^{k(Z\pm S\pm(N\pm j)\pm(p\pm j))/t}$
$=(1-\eta^2)^{k(Z\pm S\pm(N\pm j)\pm(p\pm j))/tt}\{0,2\}^{k(Z\pm S\pm(N\pm j)\pm(p\pm j))/t}\{D_0)^{k(Z\pm S\pm(N\pm j)\pm(p\pm j))/t}$
$\Longrightarrow(1-\eta^2)^{k(Z\pm S\pm(N\pm 1)\pm(p\pm 1))/tt}\{0,2\}^{k(Z\pm S\pm(N\pm 1)\pm(p\pm 1))/t}\{D_0)^{k(Z\pm S\pm(N\pm 1)\pm(p\pm 1))/t}$;
(17.2) $0\le(1-\eta^2)^{k(Z\pm S\pm(N\pm j)\pm(p\pm j))/t}=[(\sqrt[K(S\pm N)]{D})/\{D_0\}^{k(Z\pm S\pm(N\pm j)\pm(p\pm j))/t}\le 1$;
(17.3) $\{\sqrt[K(S\pm\pm(N\pm j))]{X}\}^{k(Z\pm S\pm(N\pm j)\pm(p\pm j))/t}=\{D_0\}^{k(Z\pm S\pm(N\pm j)\pm(p\pm j))/t}$;
(17.4) $\{X_0\}^{k(Z\pm S\pm(N\pm j)\pm(p\pm j))/t}=(1/C_{(Z\pm(S\pm j)\pm(N\pm j)\pm(p\pm j))})^k\prod_{(i=(p\pm j)}\{x_{(p\pm j)}{}^t\}$;
(17.5) $\{2\}^{k(Z\pm S\pm(N\pm j)\pm(p\pm j))/t}$: Sum of combined coefficients (qubits);

That is, an arbitrary calculus equation with infinite points needs only to know that$(\sqrt[K((S\pm j)\pm(N\pm j))]{D})\neq\{D_0\}$; (K=+1,0,-1) ; Logarithmic processing of asymmetric values between them makes$(\sqrt[K((S\pm j)\pm(N\pm j))]{D})=\{D_0\}$, and further describes the corresponding value of each element by the round logarithmic factor. Can be solved.

The continuous and discontinuous (non-linear) multiplication of point infinite k(Z±S) elements can be converted into continuous and discontinuous (matrix) or calculus equations.

(1), Zero-order calculus equation, which belongs to "polynomial or primitive function", , (j=0,N±0,p±0) The sum of their corresponding coefficients (qubits): $\{2\}^{p}(p\leq S)$; Characteristic mode $\{X\}^{k(Z\pm S\pm(N\pm j)\pm(p\pm j))/t}$and circle logarithm$(1-\eta^2)^{k(Z\pm S\pm(N\pm j)\pm(p\pm j))/t}$.

(2), First-order calculus equation, which belongs to the "linear matrix, the speed of physics, the" 1-1 combination "in the second term order of the polynomial, (j=1,N±1,p±1) ; Respectively corresponding :

Sum of coefficients (qubits):$\{0,2\}^{K(Z\pm S\pm(N\pm1)\pm(P\pm1))/t}$;

Characteristic mode:$\{X\}^{K(Z\pm S\pm(N\pm1)\pm(P\pm1))/t}$;

logarithm of circle:$(1-\eta^2)^{K(Z\pm S\pm(N\pm1)\pm(P\pm1))/t}=\{^{K(S\pm1)}\sqrt{D}/\{D_0\}^{K(Z\pm S\pm(N\pm1)\pm(P\pm1))/t}$;

(2) , Second-order calculus equations and pattern recognition, which belong to "non-linear matrix, physical acceleration," 2-2 combination "in the third-term polynomial order, (j=2,N±2,p±2)Corresponds to:

Sum of coefficients (qubits) $\{0,2\}^{K(Z\pm S\pm(N\pm2)\pm(P\pm2))/t}$;

Characteristic mode$\{X\}^{K(Z\pm S\pm(N\pm2)\pm(P\pm2))/t}$;

logarithm of the circle: $(1-\eta^2)^{K(Z\pm S\pm(N\pm2)\pm(P\pm2))/t}=[\{^{K(S\pm2)}\sqrt{D}/\{D_0\}]^{K(Z\pm S\pm(N\pm2)\pm(P\pm2))/t}$;

(4), (j) Calculus equations, blockchain, artificial intelligence, real super quantum computers (including discrete, entangled, and parallel computing), which belong to "super nonlinear changes (physical super acceleration), polynomials(j-j)the combined(j+1) th item order ", [(j=j,S±j,N±j,p±j)≤S] (j = number of parallel calculations); corresponding to

Coefficient sum (qubit): Coefficient sum (qubit):

Serial computingl : $\{0,2\}^{K(Z\pm(S\pm j)\pm(N\pm j)\pm(P\pm j))/t}$;

Parallel computing : $\{0,2\}^{K(Z\pm(S)\pm(N)\pm(P))/t}+\{0,2\}^{K(Z\pm(j)\pm(N\pm j)\pm(P\pm j))/t}$;

Feature mode : $\{R_0\}^{K(Z\pm(j)\pm(N\pm j)\pm(P\pm j))/t}$;

Logarithm of circle and discriminant : $(1-\eta^2)=\{^{K((S\pm j)\pm(N\pm j))}\sqrt{D}/\{D_0\}^{K(Z\pm(S\pm j)\pm(N\pm j)\pm(P\pm j))/t}$;

Normalized circle logarithm: $(1-\eta^2)^{K(Z\pm(S\pm j)\pm(N\pm j)\pm(P\pm j))/t}=\leftrightarrow(1-\eta^2)^{K(Z\pm(S\pm j)\pm(N\pm1)\pm(P\pm1))/t}$;

Two kinds of calculation results of point infinite calculus equation:$\{0,2\}^{K(Z\pm(S\pm j)\pm(N\pm j)\pm(P\pm j))/t}$;

Senior mathematicians put forward a lot of algorithm research experience and experimental results, which gave us a good source of inspiration and induction. As a result, "Mathematics of Relativity" naturally appeared, which could integrate a series of functions and equations such as polynomials, calculus, pattern recognition, blockchain, quantum computers, etc., and infinitely closed between [0 to 1] Hierarchical arithmetic calculations are called circular logarithmic algorithms. Satisfy the Langlands program, or show what people call "the last rules of nature that humans may not have discovered." The logarithm of the circle proves that the world that Einstein said during his lifetime will eventually return to the circle. The theory of mathematical relativity is expected to achieve the conclusion and the end of mathematics.

The laws of science are summarized as mathematics, which in turn guides the development of science. The theory of mathematical relativity will solve a large number of century-old mathematical problems and greatly promote the unlimited development of contemporary science. Various scientific fields await people to explore in depth. Develop and solve.（end）.

References:-

1. [to] E AMaor by Zhou Changzhi, etc. Translated "e: The Storg of Number" People's Posts and Telecommunications Publishing House October 2011
2. [US] M. Klein, translated by Deng Dongsun and others, "Ancient and Modern Mathematical Thoughts" (Vol. 1, 2, 3) Shanghai Science and Technology Press August 2014
3. "Langlands Outline by Deng Dongsun and other translations of" Leadership in Mathematics Thoughts of Ancient and Modern Times "," 100 Scientific Problems of the 21st Century "p793-p798Min Publishing House Third Edition, January 2000
4. Xu Lizhi, Selected Lectures on Mathematical Methodology, p47-p101, Huazhong Institute of Technology Press, April 1983
5. Editor-in-Chief, Yang Guilin, etc. "Modern Physics" p155-189 Beijing Science Press (www.sciencep.com), the third Indian drama in 2006.

6. John Derby Hill, Chen Weipeng translated "The Love of Prime Numbers-the biggest unsolved mystery in Riemann and mathematics" published by Shanghai Science and Technology Education Press in December 2008.
7. John Stahl, "Einstein's Miracle Year-Five Essays Changing the Face of Physics", Fan Yanian, etc. Shanghai Science and Technology Education Press November 20012
8. [US] by M. Livio, translated by Huang Zheng, "Mathematics Contemplation", Beijing People's Posts and Telecommunications Publishing House, September 2011
9. Wang Yiping, "On Light · Polynomials · Relativity · Circular Network Isomorphic Mapping- Commemorating the 100th Anniversary of Einstein's General Relativity and 2015-International Light Year" [United States] "MATTER REGULARITY" (Grid) 2015/3 p46 -61 (Chinese and English) Published June 2015
10. Wang Yiping, "NP-P and Relativity Construction" [US] "Journal of Mathematical and Statistical Sciences" ((JCCM) 2018/9 p1-14 September 2018 edition
11. Wang Yiping, "Riemann Function and Relativity Construction" [United States] "Journal of Mathematical and Statistical Sciences" (JMSS) 2018/1 p55-67 January 2018
12. Wang Yiping, "NS Equation and Relativity Construction" [US] "Journal of Mathematical and Statistical Science" (JMSS) 2018/5 p55-67 May 2018.