Analysis of Arbitrary High Power Polynomials Based on Circular Logarithmic Equations

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Abstract

The mathematician Abel decided that it is impossible to have a root solution for five or more equations. This "impossible" theorem has been affecting today, and Galois uses set theory to solve more than five equations, called near-generation algebra. Mathematical methods of other nonlinear equations cannot avoid "error approximation." Mathematicians expect an accurate solution to zero error in traditional mathematical calculations. Arbitrary polynomial (numerical, spatial, function, big data) equations (including calculus dynamics equation) are proposed.

Under equilibrium (closed domain) conditions, the principle of relativity is transformed into: reciprocity, isomorphism, The unitary three is a norm-invariant, an abstract circular logarithmic equation with no specific element content. According to the polynomial coefficient and the known boundary conditions, the arithmetic operation of the logarithm of the circle is performed to realize the exact solution of the zero error.

Keywords: high power polynomial, combination coefficient, average, norm invariance, circular logarithmic equation

1. Introduction

The development of human mathematics experienced the Napier logarithm of 1614, the Bayesian probability formula of British mathematicians in 1763, and the Newton-Leibnitz calculus of the same period, the logarithm of Euler's circle, and Ein in 1905–1915, Stan's special theory of relativity and general relativity and the mathematical results of Legendre (Adrien-Marie) elliptic function lay the foundation of contemporary mathematics. The rapid development in physics, astronomy, geography, chemistry, life sciences, etc. has changed people's worldview.

However, the mathematician Abel concluded that it is impossible to have a root solution for more than five equations. This theorem has been affecting today. Galois solved the equations more than five times with set theory, using four arithmetic symbols of difficult to understand logic, called near-generation algebra. Due to inconvenient application, many mathematicians are cautiously looking for other methods, such as functional analysis, finite
element method, iterative method, error approximation, and so on. So that the mainframe computer is also based on a large number of linear equations, the speed of the solution is the difference between computer performance, such as the Chinese supercomputer has reached a computing speed of 300 billion times per minute.

American mathematician Klein pointed out that since 1930, mathematics has not made substantial progress. That is to say, people have not found a new calculation method, and can solve the arbitrary high-order equation accurately by applying the mathematical four-step operation. Mathematicians have speculated that humans may not have discovered a new and final rule of change in nature.

Circular logarithm comes into being, arbitrary polynomial equations (including calculus equations, dynamic equations), equations with equilibrium and relative equilibrium, and circular logarithmic equations are transformed by the principle of relativity. Because the boundary conditions are known (numerical, spatial, function), the calculation of the polynomial at this time is converted into an abstract circular logarithmic equation with no specific element content. The unknown elements and the corresponding known boundary conditions are solved by the four arithmetic operations of the logarithm of the circle.

2. Calculus dynamic equations and polynomials

Traditional calculus (dynamic equation) is transformed into a polynomial calculus power function by the \((N)\) order value symbol.

There are: differential dynamic equation \(\{x^S\}\) of the block (differential order conversion power function: \(\partial(N)\)):
\[
\partial(N)\frac{f(x)}{t} = \partial(N-1)\frac{f(x)}{t} + \partial(N-2)\frac{f(x)}{t} + \ldots + \partial(N-p)\frac{f(x)}{t} + \ldots + \partial(N-q)\frac{f(x)}{t} = A(x) + B(x) + \ldots + P(x) + Q(x)
\]

Integral dynamic equation \(\{D^S\}\) (integral order conversion power function: \(\int\)):
\[
\int (D^S)dt = \int (D^{N})dt + \int (D^{N-1})dt + \ldots + \int (D^{N-p})dt + \ldots + \int (D^{N-q})dt = A(D) + B(D) + \ldots + P(D) + Q(D)
\]

The above combination is written as a point polynomial general formula (calculus order \(\pm N\)):
\[
\{R\} = A\{R\} + B\{R\} + \ldots + P\{R\} + Q\{R\}
\]

Where \(\{X\}\), \(\{D\}\) represent closed curves of blocks, graphic elements, and boundaries, respectively.

Where: power function \(Z=K(Z=S\pm N\pm P)\) (called path integral, history, calculation time); \(Z\) infinite polynomial power function; \(S\) element composition polynomial dimension; \(\pm N\geq P\geq 0\); \(K= (+1, -1)\) block or expansion, or reduction property: shorthand: \(K(Z=S\pm N\pm P)\); \(Z\) polynomial \(\{\}\) polynomial The block combination term (increasing or decreasing); \((t)\) represents the dynamic equation (the general formula does not mark \(t\)); \{\} represents the point group combination and set. The introduction of two "......" in the polynomial \((Z)\) means an infinite tile, which is different from the traditional "...." finite calculation. (the same class)
3. Polynomial coefficients and logarithm of the circle

3.1. Polynomial coefficients and logarithm of the circle

According to the Brouwer Center fixed point theorem [3] \( \{D\}^Z \), \( \{X\}^Z \in \{R\}^Z \) element combination (function, numerical, geometric space) is equivalent.

Definition: Polynomial various combination coefficients, which is the number of combinations divided by the corresponding unknown or known average function, called the average function becomes the basis of calculation. In polynomials, the average block (function, geometric space, numerical value) is often used as the basis for calculation.

\[
(1/C_{S(N)}) \cdot (R_a, R_b, \ldots, R_p, \ldots, R_q) \in \{R_0\}_{K(Z \pm S \pm N)}
\]

hence:

\[
\{R_0\}_{K(Z \pm S \pm N)} = \sum (1/C(S \pm 0)) \{R_i\}_{K(Z \pm S \pm N)}
\]

Eq. (2)

\[
C_{Z \pm S \pm N} = S(S-1)\ldots(S-P) / P(P-1)\ldots(2)(1) = S! / P!
\]

(3)

\[
C_{Z \pm S \pm N} = C_{Z \pm S \pm 0} + C_{Z \pm S \pm 1} + \ldots + C_{Z \pm S \pm P} + \ldots + C_{Z \pm S \pm q} = \{2\} K_{Z \pm S \pm N};
\]

(4)

where: \( C_{K(Z \pm S \pm N)} \) polynomial P term regularization coefficient; coefficient subscript letter: polynomial element combination form. ! factorial.

3.2. Polynomial equations and circular logarithmic equations

Equation (4) satisfies the polynomial regularization equation, where \( \{x\}^Z = \{D\}^Z \); when \( \{x\}^Z \neq \{D\}^Z \), the principle of relativity is applied [6], and the unknown and known functions are one by one. Corresponding ratios achieve a relative symmetrical balance. Obtain a relative equilibrium equation—a dimensionless function with no specific element content, called the logarithm of the circle (relativistic construction).

Assume:

\[
(1 - \eta^2)^Z \sim (\eta)^Z = \{x\}_{K(Z \pm S \pm N)} / \{D\}_{K(Z \pm S \pm N)}
\]

get:

\[
\{X \pm D\}_{K(Z \pm S \pm N)} = \{x\}_{K(Z \pm S \pm N)} / \{D\}_{K(Z \pm S \pm N)} + \{x\}_{K(Z \pm S \pm N)} / \{D\}_{K(Z \pm S \pm N)} + \ldots + \{x\}_{K(Z \pm S \pm N)} / \{D\}_{K(Z \pm S \pm N)} + \ldots + \{x\}_{K(Z \pm S \pm N)} / \{D\}_{K(Z \pm S \pm N)}
\]

\[
= [(1 - \eta^2)^K_{Z \pm S \pm N}) + (1 - \eta^2)^K_{Z \pm S \pm N}) + \ldots + (1 - \eta^2)^K_{Z \pm S \pm N}) + \ldots + (1 - \eta^2)^K_{Z \pm S \pm N})] \{X \pm D\}_{K(Z \pm S \pm N)}
\]

\[
= (1 - \eta^2)^K_{Z \pm S \pm N}) \{X \pm D\}_{K(Z \pm S \pm N)};
\]

(5.1)

\[
0 \leq (1 - \eta^2)^K_{Z \pm S \pm N}) \leq 1;
\]

(5.2)

Under equilibrium conditions: \( \{x_0\}^Z = \{D_0\}^Z \);

(1)

\[
\{X \pm D\}_{K(Z \pm S \pm N)} = (1 - \eta^2)^K_{Z \pm S \pm N}) \{x_0\}_{K(Z \pm S \pm N)} / \{D_0\}_{K(Z \pm S \pm N)};
\]

(5.3)

(2)

\[
\{X \pm D\}_{K(Z \pm S \pm N)} = (1 - \eta^2)^K_{Z \pm S \pm N}) \{D_0\}_{K(Z \pm S \pm N)} / \{x_0\}_{K(Z \pm S \pm N)};
\]

(5.4)

of which: In the logarithmic equation, \( (1 - \eta^2)^Z \sim (\eta)^Z \) indicates that the valence and the second order are equivalent.

Formula (5.4) \( \{2\} K_{Z \pm S \pm N} \) replaces the “imaginary number” in traditional mathematics, reflecting the actual conditions of realistic mathematics.

4. Calculation equation of the fifth-order equation

There are many calculation examples for the quintic equation. Three-dimensional vortex motion as produced by humans. Under ideal conditions (not considering other viscous, friction, temperature, etc.), the fluid molecules simultaneously perform three-dimensional
gyro and three-dimensional spin motion, in which one-dimensional coincidence, that is, five unknown and known element composition equilibrium equations, \( \{x_1, x_2, x_3, x_4, x_5,\} \in \{x\} \), form the combined root of the five-dimensional equation. These five elements interact in the vortex motion and constrain each other to become a five-dimensional equation. Where \( \{x_1, x_2, x_3\} \) is the Cartesian three-dimensional Cartesian coordinates \( \{x_4, x_5,\} \) which are the spherical coordinates of the spin.

heve: \[
\{x \pm D\}^5 = Ax^5 + Bx^4 + Cx^3 + Dx^2 + Ex + D = 0; \tag{6.1}
\]
or: \[
\{x \pm D\}^{K(Z \pm S \pm N \pm 5)} = Ax^{K(Z \pm S \pm N \pm 0)} + Bx^{K(Z \pm S \pm N \pm 1)} + Cx^{K(Z \pm S \pm N \pm 2)} + Dx^{K(Z \pm S \pm N \pm 3)} + Ex^{K(Z \pm S \pm N \pm 4)} + D = 0; \tag{6.2}
\]

Under equilibrium conditions, \( \{x\} \) and \( \{D\} \) form a balance \( \{x\} = \{D\} \) (called discrete state) or relative equilibrium \( \{x\} \neq \{D\} \) (called entangled state). The coefficients of this five-dimensional equation contain a regularization coefficient that can be converted to a binomial of the power function of the fifth power. (Infinitely any arbitrary 5th order equation, the power function general formula is written as: \( Z = K(Z \pm S \pm N \pm 5) \). Where: \( Z \) polynomial power function means infinity, \( k \) element (topological) variation property, any finite \( _N \) in \( S \) infinite is gradation or calculus order, \( \partial = _N \) means differential order \( \int = _N \) means integral order, \( P = 5 \) Represents the fifth-order equation, (including various combinations of five elements, "1, 2, 3, 4, 0" respectively denote 1 and 1; 2 and 2; 3 and 3; 4 and 4; Combination, the coefficient indicates the number of combinations thereof, and the coefficient is according to the regularization distribution rule:

\[
C(5 \pm 5) = 1 + 5 + 10 + 10 + 5 + 1 = \{2\}^5 = 32;
\]

Calculation: set the arithmetic mean \( D_0 \) of various combinations of equations of 5 times; heve:

\[
(x_0)^5 = (D_0)^5 = A/C(5; 0) = \left[ 5 \sqrt[5]{\Pi (x_1 \cdot x_2 \cdot x_3 \cdot x_4 \cdot x_5)} \right] = (5 \sqrt[5]{D})^5; C(5; 0) = 1;
\]

\[
(x_0)^4 = (D_0)^4 = B/C(5; 1) = B/C(5; 1) = \left( \sum (1/5)(x_1 + x_2 + x_3 + x_4 + x_5) \right)^4; C(5; 1) = 5;
\]

\[
(x_0)^3 = (D_0)^3 = C/C(5; 2) = C/C(5; 1) = \left( 2 \sqrt[5]{\sum (1/10)(\Pi x_1 x_2 + x_2 x_3 + \ldots + x_4 x_5)} \right)^2; C(5; 2) = 10;
\]

\[
(x_0)^2 = (D_0)^2 = D/C(5; 3) = D/C(5; 1) = \left( \sum (1/10)(\Pi x_1 x_2 x_3 + x_2 x_3 x_4 + x_3 x_4 x_5 + \ldots) \right)^3; C(5; 3) = 10;
\]

\[
(x_0)^1 = (D_0)^1 = E/C(5; 4) = E/C(5; 1) = \left( \sum (1/5)(\Pi x_1 x_2 x_3 x_4 + x_2 x_3 x_4 x_5 + \ldots) \right)^4; C(5; 4) = 5;
\]

of which:

\[
\left( \sum (1/5)(\Pi x_1 x_2 x_3 x_4 + \Pi x_2 x_3 x_4 x_5 + \ldots) \right) = \sum (1/5)(\Pi x_1 x_2 + \Pi x_2 x_3 + \ldots + x_4 x_5));
\]

\[
\left( \sum (1/10)(\Pi x_1 x_2 + \Pi x_2 x_3 + \ldots + x_4 x_5)); \right) = \left( \sum (1/10)(\Pi x_1 x_2 x_3 + \Pi x_2 x_3 x_4 + \Pi x_3 x_4 x_5 + \ldots) \right)
\]

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\[ (1 - \eta^2)^{5} \binom{0.2}{D_0}^{5}; \]

Under balanced or relative equilibrium conditions \( \{x_0\} = \{D_0\} \):

In particular, polynomials often appear \( \{x\} \neq \{D\}^{5} \), and after extracting \( (1 - \eta^2) \), we get \( \{x_0\} = \{D_0\} \), which is called relative balance. Formula (4) is converted into

\[ \{x \pm D\}^{5} = (1 - \eta^2)^{5} \binom{x_0 \pm D_0}{D_0}^{5}; \]

among them:

\[ \{x - D\}^{5} = (1 - \eta^2)^{5} \binom{0}{D_0}^{5}; \]

\[ \{x + D\}^{5} = (1 - \eta^2)^{5} \binom{2}{D_0}^{5}; \]

Equation (6.8) cancels the "imaginary number i" symbol of traditional mathematics and satisfies the existence of reality. Moreover, \( \{x_0\} \) and \( \{D_0\} \) have isomorphic reciprocity, which makes the calculation of arbitrary polynomial uniform, that is to say, the calculation method of any higher-order equation is consistent.

Under equilibrium conditions, the two values \( \{B\} \) and \( \{D\} \) are known in any polynomial, and any higher-order equation has \( \{B\}^{K(Z \pm S \pm N \pm P)} \) and \( \{D\} \), which can accurately solve the combination of equations. root. Further, the values of the respective elements are separately calculated from the combined roots.

get:

\[ \{x\}^{5} = (1 - \eta^2)^{5} \binom{0.2}{D_0}^{5}; \]

when:

\[ (1 - \eta^2)^{K(Z \pm S \pm N \pm S)} = (\sqrt[5]{D}) / \binom{D_0}{D} = (0, 1); \quad K = 0; \]

represents a combination of discrete states that is applied to statistical calculations.

\[ (1 - \eta^2)^{K(Z \pm S \pm N \pm S)} = (\sqrt[5]{D}) / \binom{D_0}{D} \leq 1; \quad K = +1; \]
represents an entangled state convergence topology combination applied to mathematical calculations.

\[(1-\eta^2)^K(Z\pm S\pm N\pm 5) = (5 \sqrt{D}) / (D_0) \geq 1; \quad K = -1; \quad (6.11)\]

represents an entangled state diffusion topology combination applied to mathematical calculations.
The subscripts in the formula indicate the position, value, and space of each element, which is generally \(P=5\) (5 represents the fifth-order equation, and \(P\) represents an arbitrary \(P\)-order equation, so the abstract circular logarithmic equation becomes the specific calculation of the analytical polynomial.

(1), the unit circle logarithm processing the value of the distribution of internal elements in the same level,

\[(1-\eta^2)^K(Z\pm S\pm N\pm 5) = (1-\eta^2) + (1-\eta^2) + \cdots + (1-\eta^2); \quad (6.10)\]

(2), the isomorphic circle logarithm processing the value of the distribution of internal elements in the same level, (for odd functions)

\[(1-\eta^2)^K(Z\pm S\pm N\pm 5) = (1-\eta^2) + (1-\eta^2) + (1-\eta^2) + (1-\eta^2) = 1; \quad (6.11)\]

The above fifth-order equation belongs to the (public and spin) even function.

(1), The equation of revolution in Cartesian Cartesian coordinates

\[(1-\eta^2)^0(Z\pm S\pm N\pm 5) = (1-\eta^2)^i + (1-\eta^2)^j + (1-\eta^2)^k; \quad (6.13)\]

or: Surface rotation equation

\[(1-\eta^2)^0(Z\pm S\pm N\pm 5) = (1-\eta^2)^x + (1-\eta^2)^y + (1-\eta^2)^z; \quad (6.13)\]

or:

\[
\begin{align*}
(1/5)(\eta_1+\eta_2+\eta_3+\eta_4+\eta_5) &= \eta_1 &= 1; \\
\{x_{hi}\} &= (1-\eta^2)^x(Z\pm S\pm N\pm 5)/((1-\eta^2)^x(Z\pm S\pm N\pm 5)); \quad (i=1,2,3,4,5); \\
(7.3)
\end{align*}
\]

Discuss

(1) In quantum theory, it is assumed that the quantum is uniform and isotropic. Quantum discrete statistics

where:

\[\{x\pm D\}^{K(Z\pm S\pm N\pm 5)} = (0,1)\; (D_0): \quad 5 \sqrt{D} = (D_0); \quad (7.1)\]

The unit log logarithm is equal to the isomorphic logarithm:

\[\{x\pm D\}^{K(Z\pm S\pm N\pm 5)} = (1-\eta^2)^x(Z\pm S\pm N\pm 5); \quad (0.2) \; K(Z\pm S\pm N\pm 5); \quad (D_0)^{K(Z\pm S\pm N\pm 5)}; \quad (7.1)\]

or:

\[
\begin{align*}
(1-\eta^2)^x(Z\pm S\pm N\pm 5) &= (1-\eta^2)^x(Z\pm S\pm N\pm 5); \\
(1-\eta^2) &= (1-\eta^2) + (1-\eta^2) + (1-\eta^2) + (1-\eta^2) = 1; \\
\end{align*}
\]

or:

\[
\begin{align*}
(1/5)(\eta_1+\eta_2+\eta_3+\eta_4+\eta_5) &= \eta_1 &= 1; \\
\{x_{hi}\} &= (1-\eta^2)^x(Z\pm S\pm N\pm 5)/((1-\eta^2)^x(Z\pm S\pm N\pm 5)); \quad (i=1,2,3,4,5); \\
(7.3)
\end{align*}
\]

If: the definition \(\{D_0\}\) is equal to one qubit,
The five photons of the above fifth-order equation yield \(0.2^5=32\) qubits.

(2) In fluid theory, the particles are assumed to be non-uniform and anisotropic. Particle entanglement calculation

\[
0 \leq |(1-\eta^2)^K(Z\pm S\pm N\pm 5)| \leq 1; \quad \{X\} = (\sqrt{D}) \neq (D_0);
\]

get:

\[
\{x_\pm D\}^5 = (1-\eta^2)^5 \{0.2\}^5 \{D_0\}^5; \tag{8.1}
\]

The unit log logarithm is not equal to the isomorphic logarithm:

\[
(1-\eta^2)^K(Z\pm S\pm N\pm 5)/ (1-\eta^2)^K(Z\pm S\pm N\pm 5) \neq 1;
\]

heve:

\[
(1/5)(\eta_{h1}^2+\eta_{h2}^2+\eta_{h3}^2+\eta_{h4}^2+\eta_{h5}^2) = \eta_{h^2} = 1
\]

(accommodating the five-element equation, scalar) \((i=1,2,3,4,5)\);

or:

\[
(1/10)(\eta_{h1} \cdot \eta_{h2} + \eta_{h3} \cdot \eta_{h4} + \cdots + \eta_{h1} \cdot \eta_{h5}) = \eta_{h^2} = 1
\]

(accommodating the five-element quadratic equation, vector) \((i=1,2,3,4,5)\);

get separately:

\[
\{x_{h1}\} = (1-\eta^2)^K(Z\pm S\pm N\pm 5) (1-\eta^2)^K(Z\pm S\pm N\pm 5)/ (1-\eta_{h1}^2)^K(Z\pm S\pm N\pm 5) \cdot \{D_0\}; \tag{8.2}
\]

Similarly, any finite finite equation in infinite can be calculated according to the above five (more than five) equations. And the logarithmic property of the isomorphic circle, so that the nonlinear combination of any order can use the arithmetic calculation of linear combination to get the exact equation solution. Or break through the Abelian impossible theorem.

5. Conclusion

In 1983, Chinese mathematician Xu Lizhi said in the "Selection of Mathematical Methodology" that the main point of the calculus polynomial is continuous regularization [4]. If anyone can make a very useful relationship structure \(S\), it is very useful to introduce it, and \(G(\cdot)\) and \(F(\cdot)\) can perform important inversions [5].

The circular logarithm is a novel, independent mathematical computing system that adapts to any high power polynomial with the following highlights:

(1) In the Einstein theory of relativity, the "invariance of the speed of light" is used as a reference value for speed comparison to a relatively variable "polynomial (function, space, algebra, prime, statistical) mean" as a reference value. Make sure that the logarithm of the circle is three invariant, and ensure that the zero logarithm of the circular logarithm equation is expanded.

(2) Transforming the traditional calculus symbol into an arbitrary high power polynomial, and then converting it into a circular logarithmic equation, successfully combining "mathematical analysis (entangled state) with statistical calculation (discrete state)".

(3) It clarifies the relationship between the "multiple-form internal item-sequence combination" and the "multi-dimensional level". Ensure that the logarithmic calculation method is unitary, isomorphic, and reciprocal. Achieve stable zero error and accuracy of arithmetic calculations.

Science has no borders. Here, the author sincerely invites the world's mathematics research enthusiasts and engineering application enthusiasts to work together to develop and perfect the round logarithm theory, and truly become an independent and novel computing system. (proof)
References

[1] [2] [3] Kline (M) "Ancient and Modern Mathematical Thoughts" (Volume 1, Volume 2, Book 3) (the number of pages listed in the text, such as 3-p287-307 indicates Three volumes p 287-307) Shanghai Science and Technology Press 2014.8 second print drama


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