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Journal of Mathematics and Statistical Science, 210-233 | Science Signpost Publishing

N-S Equations and Relativistic Structures and Engineering Applications

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Abstract

It is proposed that the Navier-Stokes (NS) equation is a high-power dynamic equation of infinite multiscale vortex flow and strong nonlinearity. It is a description of the stochastic parallel, serial, equilibrium, transformation and transformation of infinitesimal fluid elements. Defining a point state is a circular function of an infinite set of fluid elements and an infinite combination, establishing a logarithm of a dimensionless quantity that has a monotonicity, reciprocity, and isomorphism at the end of the state of the point, and constructs the theory of relativity (Logarithmically) . Perform circular log-power equations without exact fluid elements and solve them accurately. Engineering Applications: Solving the design and manufacture of long vortex vanes; creating a thermodynamic machine with bi-directional vortex internal vacuum negative pressure six programs to produce super-symmetrical new energy sources, physics called "vacuum energy" . There are 13 invention patents in China, such as "Engine", "Generator" and "Vortex rotary machine".

Keywords: Fluid mechanics, Point-state, Relativistic structure (Logarithmically), Swirl vane, Supersymmetric energy.

1. Introduction

In My Hometown - Haining, Zhejiang, China Every day has a given moment, Qianjiang estuary tide, from the word east and west, lifted up layers of waves, jumped across the river barrage, to the tide whistling whistling, and some continue to Hangzhou Some went to the berm at the foot of the influx of tiders and splattered the horror of countless fragments of countless highsters. The natural spectacle of "one tide and three times watching" was the fluid dynamics of nature in Qianjiang wonderful perfomance.

Mathematicians and physicists are convinced that no matter the wave or the sea waves, no matter vortex or turbulent flow, they are all infinite scale swirling flows, with the random parallel, serial, phase transition of infinitesimal fluid point elements and parameters, Balance, transition, etc., interpret and predict them by understanding the solutions of the Navier-Stokes equations, and engineering applications. In most cases, theoretical experiments and numerical simulations are difficult to solve. The challenge is to make a substantive development of the traditional mathematical theory [1], so as to understand and control the basic laws of nature's activities and extend it to other fields of science.

A circular function with infinite set and infinite combination of arbitrary functions as a unit body is proposed, and a dimensionless quantity logarithm, which is synchronized with a power function at the end of states, is established. The theory of relativity (or a Logarithmically supersymmetric unit matrix) .And has a monotonous, reciprocal, isomorphic point state Logarithmically dynamic equation, the fluid flow conditions, to achieve simple, self-consistent, uniform description and accurate solution.

Engineering Applications: Through the novel mathematical model making machinery, the unsteady flow of fluid flow artificially converted to constant flow of fluid movement. Successfully solved the design and manufacture of continuous compression and reverse expansion vanes of various high dimensional continuous strips, and proposed the fluid rotating power machinery and bidirectional continuous vane low temperature, negative pressure and six program controlled supersymmetric thermal internal combustion engine , With a novel thermodynamic principle, stimulate the generation of super symmetric heat. The series won the national invention patents: "internal cooling negative pressure hydrogen-powered aeroengine", "internal cooling negative pressure engine", "a direct control of multi-phase environmentally friendly nuclear power engine" and various industrial and household vortex Leaves rotating machinery 13 items. Widely used and researched.

It is hoped that this can provide useful help to scientists and fluid engineers who are concerned with theoretical research. Inappropriate, welcome criticism, earnestly teach and cooperation.

2. Basic definition

In fluid (water, oil, gas, steam, powder particles), the vortex / turbulence / mixed flow is the first, second, and high energy-velocity- density- thermodynamics-space- The polynomial dynamic equation of order has the common features of parallel, serial, phase transition, balance and substitution of multivariable elements, and converts the point state concept-circular logarithm model into a dimensionless quantity circle with no specific elemental content Logarithmic dynamic equations, the introduction of known boundary conditions, easy to use mathematical four arithmetic methods to solve.

2.1. Define the concept of point state

(1) Definition of fluid point states: Infinitely high power, multivariable, multiparameter in fluid elements with same direction and non-same direction, uniform and non-uniform, symmetrical and asymmetrical, continuous and discontinuous, Constant flow, etc., to form an infinite set of polynomials and infinite set, called "point state $\{x\}^{(Z)}$".

Applying the principle of relativity of pod states, all of them are equivalently replaced by the corresponding first-order, second-order and high-order abstraction states at every level, and become the abstract point state fluid dynamic equation of dimensionless quantity. The content includes infinite combination and infinity Set of parallel, serial, hybrid, bifurcation flow and other complex multi-level eddy current, shear flow, eddy current, turbulence [1].

heve： $\{x\}^{(Z)} = Ax^{K(Z±S±N±0)} + Bx^{K(Z±S±N±1)} +\ldots+ Px^{K(Z±S±N±P)} +\ldots+Qx^{K(Z±S±N±Q)}$; (1)

In the formula, $\{x\}^{Z}$, $x^{K(Z±S±N±P)}$ denote the unit point states of any finite element, respectively, K=(+1,0,-1): power function of the polynomial (exponential function): Z=K(Z±S±N±P) infinite element combination, S: infinite finite element combination, p: polynomial element combination order Order from small to large, -P order (natural number) from big to small); N: Calculus order (natural number) (- N: differential, + N integral).

(2) Define the flow of steady flow: the internal fluid is viscous, friction and other force greater than the orderly and disorderly external forces, as well as other external influence, in the same axis of movement or center point or level. The two combined forces and directions can be the same or different, forming a polynomial relative equilibrium dynamic equation, resulting in generally ordered branch flow, steady flow and advection.

(3) Definition of steady flow Shear flow: The internal fluid is viscous, frictional and other forces greater than order and disorder external forces, as well as other external influence, in the same axis of rotation or center of rotation or rotation, the two combined Can be the same or different from the opposite direction, the composition of polynomial relative equilibrium power rotation equation, resulting in roughly ordered shear flow, vortex flow phenomenon.

(4) The definition of unsteady flow: the fluid is viscous, friction and other force is less than random and disorderly external force and other external influence, at the same and different axis or center of motion or

spin level, composed of polynomial random power Equilibrium kinetic equations produce random and disordered mixed vortex / turbulence, uncertain multipoint flow states.

2.2. Define the point state combination

2.2.1. The definition of fluid mechanics point state elements

Commonly used fluid point state multivariable elements {(R (x, y, z), ν, a, ρ, υ, λ, μ, ω, φ, θ, T, (PV/T), (mv^2+2mv+C),…;{$X^{(Z / t)}$} is an unknown element (known as a posteriori condition); {$\mathbf{D}^{(Z/t)}$} is a known element (known as an a priori condition). Under the same total elements, various combinations and sets of "S and S" and "0 and S" from "1 and 1" to the non-repetition are performed: By the power function K = (+1,0，-1); The mechanical properties that add or multiply the positive or reciprocal elements of a point state and the values of a combination and a set.

2.2.2. Define the mean value of elemental hydrodynamic point states

(R_0 (x, y, z), $ν_0$, a_0, $ρ_0$, $υ_0$, $λ_0$, $ω_0$, $μ_{0,}$ $φ_0$, $θ_0$, T_0, (P_0V_0 / T_0) and (mv_0^2 + $2mv_0$ + c_0^2) of the hydrodynamic element combination and the set value + c), ..., and the search for various big data, the value ...) / t} ∈ {X_0 $^{(Z / t)}$}. The performance of the total elements of the same, various combinations of values divided by the regularized combination of its average.

$$\{x_0\}^{(z)}=C_{S\pm0}x^{K(Z\pm S\pm N-0)}+C_{S\pm1}x^{K(Z\pm S\pm N-1)}+\ldots+ C_{S\pm p}x^{K(Z\pm S\pm N-P)}+\ldots+C_{S\pm q}Qx^{K(Z\pm S\pm N-Q)}; \qquad (2.1)$$

$$\{D_0\}^{(z)}= \{D_0\}^{K(Z\pm S\pm N-0)}+ \{D_0\}^{K(Z\pm S\pm N-1)}+\ldots+\{D_0\}^{K(Z\pm S\pm N-P)}+\ldots+\{D_0\}^{K(Z\pm S\pm N-Q)}; \qquad (2.2)$$

Where: Element has 1 and 1 elements combined to p and p elements of the non-overlapping combination of coefficients $C_{(S \pm p)}$ reflect the number of points in various combinations of forms.

2.2.3. The definition of elements does not repeat the combination of coefficients

Finite element elements in hydrodynamics have infinite combination elements. Under the equilibrium condition, the polynomial regularization combination coefficient $C_{（Z\pm S)}$ is formed according to the triangular distribution principle of Yang-Pascal polynomial.

heve： $C_{（Z\pm S)}= S_{(S\pm P)}!\ / (P)!\ = S(S-1)(S-2)\ldots! /p(p-1)(p-2)\ldots1!$ (3)

Where: $C_{（Z\pm S)}$ reflects the number of any combination of finite S elements in infinite, $S_{(S \pm P)}$! Represents the combination and set of S elements, (P)! The form representing the various combinations of S elements becomes a polynomial order.

2.2.4. Define the Logarithmically

The theory of Logarithmically set theory of relativity is between point state and point state. According to the sequence of each element (value, function, space), the abstract logarithm of circularity is obtained, which is called relativistic structure, supersymmetric unit matrix.

Definition: Under the condition of multi-element invariant, the set of its own elements divided by its own set of elements is equal to "0 ~ 1", and the theory of relativity (circular logarithm, super symmetric element matrix) is defined. In this paper, we write down the matrix.

heve： $|(1-\eta^2)\sim(\eta)|^{(Z/t)} = |\{ X_0^2\}/\{D_0^2\}|^{(Z/t)} \sim |\{ X_0\}/\{D_0\}|^{(Z/t)}$

$$= |\{ D_0^2 - X_0^2\}/\{D_0^2\}|^{(Z/t)} \sim |\{ D_0 - X_0\}/\{D_0\}|^{(Z/t)}$$

$$= [\sum(1/S)^{-1}(r_i^{-})^1]^{-(Z/t)}/[\sum(1/S)^{+1}(r_i^{-2})^{+1}]^{+(Z/t)} \sim [\sum(1/S)^{-1}r_i^{-1}]^{-(Z/t)}/[\sum(1/S)^{+1}r_i^{+1}]^{+(Z/t)}$$

$$= |\{A-B\}/\{A+B\}|^{(Z/t)} \quad (4)$$

Among them: $(1-\eta^2)^{(Z/t)}$, $(\eta)^{(Z/t)}$: The logarithm of the circle and the logarithm of the circle, have the equivalence, namely the wave particle duality, the former represents the vector, $[\sum(1/n)^{-1}r^{-1}]^{-(Z/t)}$: reciprocal average (k=-1); $[\sum(1/s)^{+1}r^{+1}]^{+(Z/t)}$: positive average (k=+1); $[\sum(1/s)^{+1}r^{+1}]^{0(Z/t)}$: Neutral average value (k = (± 0,0)); $|\{A-B\}/\{A+B\}|^{(Z/t)}$: The relative incidence of events before and after each level cf.

Where: "~": that equivalent; {} said the set; {x}, $\{x^2\}$ that the fluid point state corresponding to the linear and nonlinear state point.

3. The logarithm of the three norms invariance and limit

The logarithm of the circle is an abstract state-of-the-art model, with [0] and [1], and three normative invariance theorems and limits.

Theorem 1*: *The first normative invariance (with the same Logarithmically):

$\mathbf{\Sigma}\{x_h\}^{(Z/t)}$ divided by the total set $\{x_H\}^{(Z/t)}$ of its own elements must be equal to $\{1\}^{(Z/t)}$, that is, the homology, that is, As a unit state of the point, to ensure that the same level of state of the point of permissive point state features, with the unit quantum, and polynomial power, the table for the elements, space, location, the value of the natural state to expand.

Image metaphor, the state of mind as the melody composed of invariance of the beats, the beats have their own unchanging notes, which form a variety of wonderful melody. Music is the embodiment of the state of mind in mathematics.

heve： $(1-\eta_H^2)^{K(Z/t)}=\mathbf{\Sigma}\{x_h\}^{(Z/t)}/\{x_H\}^{(Z/t)}$

$$= \{[\mathbf{\Sigma}(\prod x_{h1}+\prod x_{h2}+\ldots+\prod x_{hp}+\ldots+\prod x_{hq})]/\{x_H\}\}^{(Z/t)}$$

$$= \{(1-\eta h12)+(1-\eta h22) +\ldots+(1-\eta p2)+\ldots+(1-\eta q2)\}(Z/t) = \{1\}(Z/t); \quad (5)$$

Based on the homology of "itself divided by itself" based on the states of pointwise, the characteristic of each state of the state of points is retained. During the logarithm expansion, the power function and the logarithm of the power function are synchronized with each other and the "zero error" is automatically realized. Ensures the smoothness and stability of dynamic equations, limits and solutions.

In particular, the traditional mathematical calculation method is based on a fixed numerical logarithm expansion, inevitably can not eliminate the "error, residual," all kinds of "approximation method" can only be approximated. This is a fatal flaw in traditional mathematics, leaving behind a host of mathematical difficulties that have Hampered the substantive progress of mathematics since 1930 [2] and impeded the development of contemporary science.

Theorem 2*: *The second norms (reciprocal Logarithmically):

Each sub-item $\{x_H\}^{k(Z/t)}$ of the self-element set is divided by its own sub-item average value $\{x_{0H}\}^{k(Z/t)}$ Equal to $\{1\}^{k(Z/t)}$,

heve： $(1-\eta^2)^{K(Z/t)}=\Sigma\{x_H\}^{(Z/t)}/\{x_{0H}\}^{(Z/t)}$

$$= [\{\Sigma(\prod x_{h1}+\prod x_{h2}+\ldots+\prod x_{h2}+\ldots+\prod x_{h2})\}/\{\Sigma(\prod x_{0h}\}]^{(Z/t)}$$

$$= (1-\eta_{h1}^2)^{+(Z/t)}+(1-\eta_{h2}^2)^{0(Z/t)}+(1-\eta_{hp}^2)^{-K(Z/t)} = \{1\}^{(Z/t)}; \text{ (Odd function)} \quad (6.1)$$

(or)： $(1-\eta^2)^{0(Z/t)}=[\{\Sigma(\prod x_{-h1}+\prod x_{-h2}\ldots)\}/\{\boldsymbol{\Sigma}(\prod x_{-0h}\}]^{(Z/t)}$

$$= (1-\eta^2)^{+(Z/t)}+(1-\eta^2)^{-K(Z/t)} = \{1\}^{(Z/t)}; \text{ (Even function)} \quad (6.2)$$

Among them: Forward convergence function: K = +1; Neutral flat function: K = 0; Reverse spread function: K = -1;

In particular, through the reciprocity of the logarithm of the logarithm and the nature of the power function, the Lapida rule breaks through the forbidden zone where the denominator can not be zero. The symmetry of its logarithm turns the uncertainty of element multiplication into relative certainty. In other words, the distribution of different elements of the state through the logarithm of different "density", so that they produce a relatively symmetrical and unified [3].

Theorem 3*: *The third standard unchanged (isomorphic Logarithmically)

Under the equilibrium condition, the average of the reciprocal states of the reciprocal states of the total elements is one-to-one correspondence, and the states of the polynomial elements (numerical, space, big data) are obtained. The topologies formed by various combinations are isomorphic , Making a variety of random state topology with the location, value, space, time and so there is no necessary link.

heve： $(1-\eta_H^2)^{K(Z/t)}=\boldsymbol{\Sigma}\{x_{0h}\}^{(Z/t)}/\{x_{0H}\}^{(Z/t)}$

$$= [\{\Sigma(\prod x_{0h1}+\prod x_{0h2}+\ldots+\prod x_{0h2}+\ldots+\prod x_{0h2})\}/\{\Sigma(\prod x_{0H}\}]^{(Z/t)}$$

$$= (1-\eta_{h1}^2)^{+(Z/t)}+(1-\eta_{h2}^2)^{0(Z/t)}+(1-\eta_{hp}^2)^{-K(Z/t)}=\{1\}^{(Z/t)}; \text{ (Odd function)} \quad (7.1)$$

(and): $(1-\eta^2)^{0(Z/t)}=[\{\Sigma(\prod x_{-h1}+\prod x_{-h2}\ldots)\}/\{\Sigma(\prod x_{-0H}\}]^{(Z/t)}$

$$= (1-\eta^2)^{+(Z/t)}+(1-\eta^2)^{-K(Z/t)}=\{1\}^{(Z/t)}; \text{ (Even function)} \quad (7.2)$$

heve： $$(1-\eta^2)^{K(Z/t)}=\{C_{(s+p)}x^{K(Z\pm S\pm N-p)/t}\cdot D_0^{K(Z\pm S\pm N+p)/t}\}$$

$$= \{x_0^{K(Z\pm S\pm N-p)/t}\cdot D_0^{K(Z\pm S\pm N+p)/t}\}= \{x_0 / D_0\}^{K(Z\pm S\pm N+p)/t} ; \quad (7.3)$$

In particular, the isomorphism circle logarithmic table is a polynomial-time algorithm in which the various combinations of the states of states form a consensus [4] [5].

Theorem 4*: *Theory of Relativity (Logarithmically) Limit

Isomorphism polynomial or geometrical topological space $(1-\eta^2)^{K(Z/t)}$ connotation, get the infinite point state of each level of the additive and even multiply, attributed to the logarithmic topology isomorphism and unity and point The smoothness and stability of state limits,

heve：： $$(1-\eta^2)^{(Z/t)} =\prod(1-\eta^2)^{-(Z/t)} =\Sigma (1-\eta^2)^{(Z/t)}; \quad (8.1)$$

and： $$(1-\eta^2)^{+(Z/t)} + (1-\eta^2)^{-(Z/t)} = 1; \quad (8.2)$$

$$(1-\eta^2)^{+(Z/t)}\cdot(1-\eta^2)^{-(Z/t)}= 1; \quad (8.3)$$

Solution (8.2), (8.3) simultaneous equations,

Obtained: Infinite point state infinite combination of various levels of circle garithmic limit, the critical value, the boundary point.

$$|(1-\eta^2) \sim (\eta)|^{K(Z/t)} =(0,1/2,1)^{K(Z/t)} =\{0,1/2,1,2\}^{K(Z/t)}; \quad (9.1)$$

$$\text{(or): } |(1-\eta_{(r,\varphi,\theta,\ x,y,z)}{}^2) \sim (\eta_{(r,,\varphi,\theta,x,y,z)})|^{K(Z/t)}$$

$$\eta_{(x,y,z)} =(0,1/2,1,2)^{K(Z/t)} \text{ (Cartesian coordinate system)}; \quad (9.2)$$

$$\text{(or): } \eta_{(r,\varphi,\theta)} =(0,k\pm(\pi/4),\pi,2\pi,4\pi,8\pi)^{K(Z/t)} \text{ (Ball coordinate system)}; \quad (9.3)$$

Derivation 1*: *The expansion of the theory of relativity (Logarithmically)

The steady-state flow and unsteady flow of fluid mechanics can be decomposed into all levels of stochastic and non-stochastic state of motion: The basic elements of logarithm of circle are:

Precession Logarithmically:

$$(1-\eta_{(x,y,z,)}{}^2)^{K(Z/t)} = [(1-\eta_x{}^2)\mathbf{i} +(1-\eta_y{}^2)\mathbf{j} +(1-\eta_z{}^2)\mathbf{k}]^{K(Z/t)} ; \quad (10.1)$$

$$\eta^2{}_{(x,y,z)}{}^{K(Z/t)} = (\eta_x{}^2 \mathbf{i} +\eta_y{}^2\mathbf{j} +\eta_z{}^2\mathbf{k})^{K(Z/t)} \quad (10.2)$$

Rotate Logarithmically:

$$(1-\eta_{(r,\varphi,\theta)}{}^2)^{K(Z/t)} = [(1-\eta_{[yz]}{}^2)\mathbf{i}+(1-\eta_{[zx]}{}^2)\mathbf{j}+(1-\eta_{[bc]}{}^2)\mathbf{k}]^{K(Z/t)} \quad (10.3)$$

$$\eta_{(x,y,z)}{}^{2K(Z/t)} = (\eta_{[yz]}{}^2\mathbf{i}+\eta_{[zx]}{}^2\mathbf{j}+\eta_{[xy]}{}^2\mathbf{k})^{K(Z/t)} \quad (10.4)$$

Tensor Logarithmically:

$$(1-\eta_{(x,y,z)}{}^2)^{K(Z/t)} = \{(1-\eta_{[y-z]}{}^2)\mathbf{i}+(1-\eta_{[z-x]}{}^2)\mathbf{j}+(1-\eta_{[x-y]}{}^2)\mathbf{k}\}^{K(Z/t)}$$

$$= \{[(1-\eta_{[y]}{}^2)-(1-\eta_{[z]}{}^2)]\mathbf{i}+[(1-\eta_{[z]}{}^2)-(1-\eta_{[x]}{}^2)]\mathbf{j}+[(1-\eta_{[x]}{}^2)-(1-\eta_{[y]}{}^2)]\mathbf{k}\}^{K(Z/t)} \quad (10.5)$$

$$\eta^{2}{}_{(x,y,z)}{}^{K(Z/t)} = \{(\eta_{[y]}{}^{2}-\eta_{[z]}{}^{2})\mathbf{i}+(\eta_{[z]}{}^{2}-\eta_{[x]}{}^{2})\mathbf{j}+(\eta_{[x]}{}^{2}-\eta_{[y]}{}^{2})\mathbf{k}\}^{K(Z/t)} \quad (10.6)$$

Logarithmically Unity:

$$(1-\eta^{2})^{K(Z/t)} = (1-\eta_{(r,x,y,z,\boldsymbol{\varphi},\boldsymbol{\theta})}{}^{2})^{K(Z/t)}=(1-\eta_{(r,x,y,z,\boldsymbol{\varphi},\boldsymbol{\theta})}{}^{2})^{K(Z/t)}$$

$$= (1-\eta_{(r,x,y,z,\boldsymbol{\varphi},\boldsymbol{\theta})})^{2K(Z\pm S\pm N\pm 0)/t}+(1-\eta^{2}{}_{(r,x,y,z,\boldsymbol{\varphi},\boldsymbol{\theta})})^{K(Z\pm S\pm N\pm 1)/t}+ \ldots$$

$$+ (1-\eta_{(r,x,y,z,\boldsymbol{\varphi},\boldsymbol{\theta})}{}^{2})^{K(Z\pm S\pm N\pm p)/t} + \ldots+(1-\eta_{(r,x,y,z,\boldsymbol{\varphi},\boldsymbol{\theta})}{}^{2})^{K(Z\pm S\pm N\pm q)/t}; \quad (10.7)$$

$$0\leq |(1-\eta_{(r,x,y,z,\boldsymbol{\varphi},\boldsymbol{\theta})}{}^{2}) \sim (\eta_{(r,x,y,z,\boldsymbol{\varphi},\boldsymbol{\theta})})|^{(Z/t)}\leq 1; \quad (10.8)$$

where: Power series (Z/t)= K(Z±S±N±0)/t+K(Z±S±N±1)/t+…+K(Z±S±N±p)/t+…+K(Z±S±N±q)/t，which respectively represent the combination and set of the sub-items of each point state of the fluid polynomial dynamic equation.

The above three normative invariance and limit proof: the point state of the point state unit has its own function except that the total term of its own function is not necessarily equal to "1", and the assumption of axiomatic set theory axiom is "1".

Derivation 2*: *Get the polynomial as follows two key results:

(1), The non-overlapping combination coefficient $C_{(S\pm p)}$ of p and p elements; the non-overlapping combination coefficient $C_{(S\pm q)}$ of q and q elements; Poor sequence:

heve：

$$\{(1/C_{S\pm p})x_{0p}\}^{K(Z\pm S\pm N\pm p)}- \{(1/C_{S\pm q})x_{0q}\}^{K(Z\pm S\pm N\pm q)}$$

$$= \{x_{0}\}^{K(Z\pm S\pm N\pm p)} - \{x_{0}\}^{K(Z\pm S\pm N\pm q)}$$

$$= [\sum(1/C_{S\pm N})\sum(\prod(x_{1}\ldots x_{N})+\ldots]^{K(Z\pm S\pm N\pm p)} - [\sum(1/C_{S\pm N})\sum(\prod(x_{1}\ldots x_{N})+\ldots]^{K(Z\pm S\pm N\pm q)}; \quad (11.1)$$

(2), The sum of the combination coefficients generated by N power-dimensional and integral calculus: $\sum C_{(S\pm N)}=\{2\}^{K(Z\pm S\pm N)}$; M power and the sum of the integrals produces the sum of the combination coefficients: $\sum C_{(S\pm M)}=\{2\}^{K(Z\pm S\pm M)}$, the relationship is expressed as power-dimensional or partial differential equations: Differential) A combination of elements forms a change of order, the coefficient changes across terms to $\{2\}^{K(Z\pm S\pm M\pm(N\pm M)}$,

Relationships are expressed as power-dimensional or partial differential equations: Each element increases or decreases (differentiates) by a factorial combination to form a stepwise change in coefficient across the term $\{2\}^{K(Z\pm S\pm(N\pm M)}$:

Power Dimension Difference:

$$\{x_{N}\}^{K(Z\pm S\pm N)}\cdot\{2\}^{K(Z\pm S\pm(N\pm M)}=\{x_{M}\}^{K(Z\pm S\pm M)}; \quad (11.2)$$

4. Fluid polynomial dynamic equation

Existing fluid mechanics or Navier-Stokes equations, equations of motion and thermodynamic equations are formulated in addition to using various algorithms including low-order (low-power, low-order combination terms) including mainframe computers, Less than the ideal value

4.1. Steady flow fluid polynomial dynamic equation

$$\{x\pm D\}^{(Z/t)}= Ax^{K(Z\pm S\pm N-0)/t}\pm Bx^{K(Z\pm S\pm N-1)/t}+\ldots$$

$$\pm Px^{K(Z\pm S\pm N-)/t}+\ldots Qx^{K(Z\pm S\pm N-q)/t}\pm D^{K(Z\pm S\pm N-0)/t}$$

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

$$\pm C_{(s+p)}x^{K(Z\pm S\pm N-p)/t}\cdot D_0^{K(Z\pm S\pm N+p)/t}+\ldots+C_{(s+q)}x^{K(Z\pm S\pm N-q)/t}\cdot D_0^{K(Z\pm S\pm N+q)/t}\pm C_{(s+0)}D_0^{K(Z\pm S\pm N+0)/t}$$

$$=(1-\eta^2)^{(Z/t)}F\{x_0\pm D_0\}^{(Z/t)}$$

$$= (1-\eta^2)^{(Z/t)}\{0,2\}^{(Z/t)}\{D_0\}^{(Z/t)}; \qquad (12.1)$$

$$(1-\eta^2)^{(Z/t)}=\{x_0\}^{(Z/t)} / \{D_0\}^{(Z/t)}; \qquad (12.2)$$

$$0\leq (1-\eta^2)^{(Z/t)}\leq 1; \qquad (12.3)$$

get: $$\{x_0-D_0\}^{(Z/t)}=\{0\}^{(Z/t)}; \{x_0\pm D_0\}^{(Z/t)}=\{2\}^{(Z/t)}; \qquad (12.4)$$

After extracting the Logarithmically, the various functions of symmetry and asymmetry form a relative equilibrium, and its limit value is:

$$(1-\eta^2)^{(Z/t)}=(0,1)^{K(Z/t)}, \quad \{x_0\}^{(Z/t)}=\{D_0\}^{(Z/t)}; \qquad (12.5)$$

$$(1-\eta^2)^{(Z/t)}=(1/2)^{K(Z/t)}, \quad \{x_0\}^{(Z/t)}=\{(1/2)D_0\}^{(Z/t)}; \qquad (12.6)$$

In the formula: the average $C_{(s+p)}x^{K(Z\pm S\pm N-p)/t}=x_0^{K(Z\pm S\pm N-p)/t}$, $(1-\eta^2)^{(Z/t)}$; Reflect the same power of asymmetric ratio between the ratio of the relative balance of the coefficient. The probability of a change between random changes is reflected.

4.2. Fluid polynomial equation of motion solution

Solve: Apply Logarithmically of three norms invariance and formula

heve：

$$(1-\eta^2)^{(Z/t)} = \{x_0\}^{(Z/t)} / \{D_0\}^{(Z/t)},$$

$$(1-\eta_H^2)^{(Z/t)}= \{D_h\}^{(Z/t)} / \{D_H\}^{(Z/t)};$$

$$(1-\eta_H^2)^{K(Z/t)}= \{[\Sigma(\prod x_{h1}+\prod x_{h2}+\ldots+\prod x_{h2}+\ldots+\prod x_{h2})]/[\Sigma(\prod x_H)]\}^{(Z/t)}$$

$$= \{(1-\eta_{h1}^2)+(1-\eta_{h2}^2)+\ldots+(1-\eta_p^2)+\ldots+(1-\eta_q^2)\}^{(Z/t)}= \{1\}^{(Z/t)}, \qquad (13)$$

where: $(1-\eta^2)^{K(Z/t)}$ can also represent the relationship between unsteady flow and steady flow. $\{X\}^{(Z/t)}=(1-\eta^2)^{(Z/t)}\{D_0\}^{(Z/t)}$, $\{X_h\}^{(Z/t)}= (1-\eta_h^2)^{(Z/t)}\{D_0\}^{(Z/t)}$; Retrieve the value of each element.

get: $$x_1=(1-\eta_{h1}^2)\{D_H\}^{K(Z\pm S\pm N)/t}= (1-\eta^2)^{(Z/t)}/(1-\eta_{h1}^2)\cdot\{D_0\}^{K(Z\pm S\pm N)/t},$$

$$x_2=(1-\eta_{h2}^2)\{D_H\}^{K(Z\pm S\pm N)/t}=(1-\eta^2)^{(Z/t)}/(1-\eta_{h2}^2)\cdot\{D_0\}^{K(Z\pm S\pm N)/t}, \quad \ldots,$$

$$x_P=(1-\eta_{hP}^2)\{D_H\}^{K(Z\pm S\pm N)/t}=(1-\eta^2)^{(Z/t)}/(1-\eta_{hp}^2)\cdot\{D_0\}^{K(Z\pm S\pm N)/t}, \quad \ldots,$$

$$x_q=(1-\eta_{hq}^2)\{D_H\}^{K(Z\pm S\pm N)/t} = (1-\eta^2)^{(Z/t)}/(1-\eta_{hq}^2)\cdot\{D_0\}^{K(Z\pm S\pm N)/t}, \quad (14)$$

4.3. Parallel kinetic equation

The multi-parameter multi-level dynamic equations usually form multi-level dynamic equations with multi-level parallel equations with different element parameters. To clarify the multi-level parallel equation is an important calculation method. Based on the random movement of fluid decomposition into parallel state elements or merging into a serial state element,

there are: Parallel kinetic equation: $\{D\}^{(Z/t)}$ or element $\{x\}^{(Z/t)}$,

$$\{D^{(Z/t)} = \sum\{D_A + D_B+\ldots+ D_P+\ldots+D_Q\}^{(Z/t)}; \quad (15.1)$$

if: Serial kinetic equation:

$$\{D\}^{(Z/t)} = \prod\{D_A\cdot D_B\cdot\ldots\cdot D_P\cdot\ldots\cdot D_Q\}^{(Z/t)},$$

$$= \prod\{D_A\cdot D_B\cdot\ldots\cdot D_P\cdot\ldots\cdot D_Q\}^{(Z/t)}/\{D_H\}^{(Z/t)}\cdot\{D_H\}^{(Z/t)}$$

$$= [\{D_H\}^{(Z/t)}/\prod\{D_A\cdot D_B\cdot\ldots\cdot D_P\cdot\ldots\cdot D_Q\}^{(Z/t)}]^{-1}\cdot\{D_H\}^{(Z/t)}$$

$$= [\sum\{D_A^{-1}+D_B^{-1}+\ldots+ D_P^{-1}+\ldots+ D_Q^{-1}\}^{(Z/t)}]^{-1}\cdot\{D_H\}^{(Z/t)} \quad (15.2)$$

The power function is the same as S =S(A+B+P+Q); (S is the level of the elemental composition, the order of the N calculus, represented by the variant n, the original function(N = 0), (K =(±1,0,+1,-1);

are satisfied:

$$(1-\eta_H^2)^{K(Z/t)} = \sum\{D_A^{(\pm1)}+ D_B^{(\pm1)}+\ldots+D_P^{(\pm1)} +\ldots+D_Q^{(\pm1)}\}^{K(Z/t)}/\{D_H^{(\pm1)}\}^{K(Z/t)}$$

$$= (1-\eta_{Ah}^2)^{K(Z/t)}+ (1-\eta_{Bh}^2)^{K(Z/t)} +\ldots+(1-\eta_{Ph}^2)^{K(Z/t)} +\ldots+ (1-\eta_{Qh}^2)^{K(Z/t)} \quad (15.3)$$

relative equilibrium conditions:

$$\{D_{0H}\}^{(Z/t)}=\{\sum(1/C_{(Z\pm S)})^{(\pm1)} (\prod x_H^{(\pm1)})\}^{(Z/t)}$$

$$= [D_{0A}^{K(Z\pm S\pm A)/t} +D_{0B}^{K(Z\pm S\pm A)/t} +\ldots+D_{0p}^{K(Z\pm S\pm P)/t} +\ldots+D_{0q}^{K(Z\pm S\pm Q)/t}]^{(Z/t)} \quad (16.1)$$

get parallel kinetic equation:

$$\{x\pm D\}^{(Z/t)} =Ax^{K(Z\pm S\pm N-0)/t}+Bx^{K(Z\pm S\pm N-1)/t}+\ldots+Px^{K(Z\pm S\pm N-p)/t}+\ldots+ Qx^{K(Z\pm S\pm N-q)/t}+D$$

$$= (1-\eta^2)^{(Z/t)} \{ x_{0H}\pm D_{0H}\}^{(Z/t)}$$

$$= (1-\eta_A^2)^{K(Z\pm S\pm A)/t}\{x_{0A}\pm D_{0A}\}^{K(Z\pm S\pm A)/t}$$

$$+ (1-\eta_B^2)^{K(Z\pm S\pm B)/t}\{x_{0B}\pm D_{0B}\}^{K(Z\pm S\pm B)/t}+\ldots$$

$$+ (1-\eta_P^2)^{K(Z\pm S\pm P)/t}\{x_{0P}\pm D_{0p}\}^{K(Z\pm S\pm P)/t}+\ldots$$

$$+ (1-\eta_Q^2)^{K(Z\pm S\pm Q)/t}\{x_{0Q}\pm D_{0Q}\}^{K(Z\pm S\pm Q)/t}$$

$$= (1-\eta_A^2)^{K(Z\pm S\pm A)/t}\{0,2\}^{K(Z\pm S\pm A)/t}\{D_{0A}\}^{K(Z\pm S\pm A)/t}$$

$$+ (1-\eta_B^2)^{K(Z\pm S\pm B)/t}\{0,2\}^{K(Z\pm S\pm B)/t}\{D_{0B}\}^{K(Z\pm S\pm B)/t}+\ldots$$

$$+ (1-\eta_P{}^2)^{K(Z\pm S\pm P)/t}\{0,2\}^{K(Z\pm S\pm P)/t}\{D_{0P}\}^{K(Z\pm S\pm P)/t}+\dots$$

$$+ (1-\eta_Q{}^2)^{K(Z\pm S\pm Q)/t}\{0,2\}^{K(Z\pm S\pm Q)/t}\{D_{0Q}\}^{K(Z\pm S\pm Q)/t}$$

$$= (1-\eta^2)^{K(Z\pm S\pm A)/t}\{0,2\}^{K(Z\pm S\pm A)/t}\{D_{0H}\}^{K(Z\pm S\pm A)/t}; \quad (16.2)$$

$$(1-\eta^2)^{(Z/t)} =(1-\eta^2)^{K(Z\pm S\pm[A+B+P+Q])/t}$$

$$=(1-\eta_A{}^2)^{K(Z\pm S\pm A)/t}+(1-\eta_B{}^2)^{K(Z\pm S\pm B)/t}+\dots+(1-\eta_P{}^2)^{K(Z\pm S\pm P)/t}+\dots+(1-\eta_Q{}^2)^{K(Z\pm S\pm Q)/t}; \quad (16.3)$$

among them: $(1-\eta^2)^{K(Z\pm S\pm[A+B+P+Q]\pm N)/t}$ and $N\neq0$, there is infinite expansion of the states and calculus of each layer and.

$$\{D_0\}^{K(Z\pm H)/t}=\{ {}^{K(H)}\sqrt{D}\}^{K(Z\pm H)/t}=\{\sum(1/C_{(Z\pm H)})^{(\pm1)} (\prod D_H{}^{(\pm1)})\}^{(Z/t)}; \quad (16.4)$$

5. Point State Fluid Dynamic Equation Application

The Navier-Stokes equations (NS) show differential equations with equations of motion that are converted to polynomials and calmly incorporate a variety of steady-state flow motions to guide the fluid's steady-state fluid motion. Designed as a different "vortex machine", and the production of asymmetric energy "vortex engine."

5.1. The fluid's energy equation

The energy equation of the fluid is given by the space {x} as the unknown variable, D is the known variable, and the kinetic energy and the momentum are each composed of two point elements, unknown $\{x_Ax_B\}$, known$\{D_AD_B\}$;

Momentum: First order differential N=1；

$$\upsilon = \{\partial x/\partial t\}=\{x\}^{K(Z\pm S-1)/t}$$

Kinetic: 1st order differential N=1；

$$\upsilon^2= \{\partial x/\partial t\}^2=\{x^2\}^{K(Z\pm S-1)/t}+\{x\}^{K(Z\pm S-1)/t},$$

Acceleration: 2nd order differential N=2；

$$a = \{\partial^2x/\partial t^2\}=\{x^2\}^{K(Z\pm S-2)/t}+\{x^2\}^{K(Z\pm S-1)/t}, \ \dots\dots$$

Super acceleration: higher order differential (N≥3)；

$$a^n =\{\partial^nx/\partial t^n\}=\{x\}^{K(Z\pm S-n)/t}+\{x\}^{K(Z\pm S-(n-1)/t}+\dots+\{x\}^{K(Z\pm S-2)/t}+\dots+\{x\}^{K(Z\pm S-1)/t},$$

where： $\{x^2\}^{K(Z\pm S-1)/t}=\{x\}^{K(Z\pm S-1)/t}$。

that is to say, there is no difference in the performance of energy and force under high power(N≥3) .

heve： $U = mv2+2mv+D$

$$= m\{x\}^{K(Z\pm S-1-0)/t}+m\{x\}^{K(Z\pm S-1-1)/t}+D$$

$$= (1-\eta^2)^{K(Z\pm S-1)/t}m\{x_0\pm D_0\}^{K(Z\pm S-1)/t}$$

$$(or) := (1-\eta^2)^{K(Z\pm S-1)/t} m\{D_0^2\}^{K(Z\pm S-1)/t}$$
$$= (1-\eta^2)^{K(Z\pm S-1)/t}\{mD_0^2/mC^2\}^{K(Z\pm S-1)/t}$$
$$= (1-\eta C^2)^{K(Z\pm S-1)/t} mC^2; \quad (17.1)$$
$$(1-\eta^2)^{K(Z\pm S-1)/t} = \{x_0/D_0\}^{K(Z\pm S-1)/t} = \{x/D\}^{K(Z\pm S-1)/t}; \quad (17.2)$$
$$(1-\eta_C^2)^{K(Z\pm S-1)/t} = \{D_0/C\}^{K(Z\pm S-1)/t}; \quad (17.3)$$
get：
$$\{x_A\}= (1-\eta^2)^{+(Z\pm S-1)/t} \{x_{0A}\} = (1-\eta_{CA}^2)^{+(Z\pm S-1)/t}\{C_0^2\}^{+(Z\pm S-1)/t}; \quad (17.4)$$
$$\{x_B\}= (1-\eta^2)^{-(Z\pm S-1)/t} \{x_{0B}\} = (1-\eta_{CB}^2)^{-(Z\pm S-1)/t}\{C_0^2\}^{-(Z\pm S-1)/t}; \quad (17.5)$$

where: **m** is the mass of the point state; **$\{C_0^2\}$** is the average velocity of the light or the average sound velocity $\{x_0\}$[6];

5.2. Three-dimensional vortex mechanics equation

5.2.1. Eddy current characteristics

(1), **Forward vortex**: Ordered vortex in the external compression force (centripetal force) to carry out compression whirlpool. Features: Center force, the boundary force is small. The positive three-dimensional vortex is a continuous strip-shaped blade that is connected at multiple periods around the main shaft. The angle between the radial blades and the shaft increases from 90^0 to 0^0, and the radial radius of the blades increases from small to large Change production. Under the action of the blade, the fluid moves from a rotating state to a straight-eddy flow state. (K = +1), said the positive eddy current,

(2), **Reverse vortex**: Ordered vortex is under the expansion (centrifugal force) to expand the turbulent flow expansion. Features: The center force is small, the boundary force is big. Inverted three-dimensional vortex is a continuous strip of blades, multi-cycle around the radial blade and shaft tilt angle from small (0^0) to large (90^0), the blade radial radius from small to large changes made. (K = -1), said reverse vortex.

(3), **Neutral spiral flow:** Ordered eddy current is in the external force (centrifugal force) forced turbulence. Characteristics: The center force is the same as the boundary force. The three-dimensional vortex is a continuous strip-shaped vane that is surrounded by many cycles. The angle between the radial vane and the shaft does not change and the radial radius of the vane does not change. (K = 0), called the neutral eddy current. Dimension: Spin 2 + Span 3-dimensional composition of 5-dimensional equation, and then, external force limiting factors increase, dimension corresponding increase.

(4), **Unified (positive, middle, anti) vortex:** By the three-dimensional into the power + eight-dimensional spin force + other constraints external force, Composed of multi-element second-order high-dimensional (S≥2) multivariate (P≥2) . Dynamic equation $\{x^2\}^{K(Z\pm S\pm 2+P)/t}$ differential second order (N≥2)，the original function $\{x^2\}^{K(Z\pm S\pm 2+Q)/t}$ is restored by $\{2\}^{K(Z\pm S\pm 2+[Q-P])/t}$.

5.2.2, Multi-vector resultant force calculation

It is known that the multi-vector resultant $\{D\}^{K(Z\pm S\pm NQ)/t}$ balances the dynamic equation of $\{x^2\}^{K(Z\pm S\pm NQ)/t}$

heve： $\{x\pm D\}^{(Z/t)} = Ax^{K(Z\pm S\pm N-0)/t}+Bx^{K(Z\pm S\pm N-1)/t}+\ldots$

$$+ Px^{K(Z\pm S\pm N-p)/t}+\ldots+ Qx^{K(Z\pm S\pm N-q)/t}+D$$

$$=(1-\eta^2)^{(Z/t)} \quad \{0,2\}^{(Z/t)} \quad \{D_{0H}\}^{(Z/t)} ; \qquad (18.1)$$

$$(1-\eta^2)^{(Z/t)} = \{D_H\}^{(Z/t)}/\{D_{0H}\}^{(Z/t)}$$

$$= (1-\eta^2)^{+(Z\pm S\pm N)/t}+ (1-\eta^2)^{0(Z\pm S\pm N)/t}+(1-\eta^2)^{-(Z\pm S\pm N)/t}; \qquad (18.2)$$

are satisfied: high-power positive vortex + neutral spiral flow + reverse vortex flow.

$\{0,2\}^{(Z/t)}$ $\{D_{0H}\}^{(Z/t)}$ respectively means that there are "zero balance" with "0" and "large balance with 2".

5.3. Thermodynamics supersymmetric thermal energy equation

Engine, thermodynamic machines are mostly the change / combination / balance / exchange of thermal energy (PV / T) in all layers. The core of variable elements is the combination of mean value, which is difficult to control and the error is larger than the traditional one. (m、r)、(m、v)、(m、a)、(PV/T）. A lot of controversy. In fact, they are power series of multi-element, multi-level, multi-parameter polynomial equation, the traditional calculation can not be accurately solved.

The internal combustion engine and engine engineering are composed of the three thermodynamic equations mentioned above: forward vortex-reverse vortex-neutral vortex (explosion, phase change).

Heve: $U = \mu\,(PV/T)$

$$= (1-\eta_\mu^2)^{(Z/t)} (P_0V_0/T_0)^{(Z/t)}$$

$$= \mu\{ (1-\eta_\lambda^2)^{+(Z/t)}+ (1-\eta_\lambda^2)^{-(Z/t)} + (1-\eta_\lambda^2)^{0(Z/t)} \} (P_0V_0/T_0)^{(Z/t)}; \qquad (19.1)$$

$$(1-\eta^2)\sim (\eta) = (P_{max}V_{max}/T_{max})-(P_{min}V_{min}/T_{min})] / [(P_{max}V_{max}/T_{max})+(P_{min}V_{min}/T_{min})]$$

$$= [(P_0V_0/T_0)- (P_{min}V_{min}/T_{min})] / [(P_0V_0/T_0)]$$

$$= [(P_{max}V_{max}/T_{max})- (P_0V_0/T_0)] / [(P_0V_0/T_0)]; \qquad (19.2)$$

among them: Thermodynamic equation: (pressure • volume) / temperature = (PV / T). known threshold (P_0V_0/T_0) or thermodynamic characteristics.

where, μ and λ denote the mechanical constants, respectively; $(P_{max}V_{max} / T_{max})$, $(P_{min}V_{min} / T_{min})$ denote the maximum and minimum thermal states, respectively. $\{(1-\eta^2)^{-1}\}^{(Z\pm S\pm N)/t}$ belongs to the supersymmetric energy.

5.4. Abstract circular log dynamic equation

Positive direction of compressed fuel vortex + low temperature negative pressure explosion into an ultra-symmetrical energy + inverse supersymmetric energy vortex co-composed of high power multidimensional kinetic equation: called Abstract circular logarithm thermodynamic equation

$$\mathbf{E}=(1-\eta^2)^{(Z\pm S\pm N)/t}\,\mathbf{E}_0$$

$$=(1-\eta^2)^{(Z\pm S\pm N)/t}\{P_0V_0/T_0\}^{(Z\pm S\pm N)/t}$$

$$=\{(1-\eta^2)^{+1}+(1-\eta^2)^{01}+(1-\eta^2)^{-1}\}^{(Z\pm S\pm N)/t}\{P_0V_0/T_0\}^{(Z\pm S\pm N)/t} \quad (20.1)$$

$$0\le|(1-\eta^2)\sim(\eta)|^{(Z/t)}\le 1\ ;\ k=(+1,0,-1); \quad (20.2)$$

formula (20.1) is the thermal efficiency of the engine that excites the supersymmetric material energy. Abstract Logarithmically thermodynamic equation. E broadly expresses the various states of the states of the states.

6. engineering applications and invention patents

6.1. Background

Internal combustion engine is the power source of traffic machinery, also known as heat machine. The internal combustion engine is converted into mechanical energy by the thermal energy generated after the fuel explodes and burns. In 1876, the German Otto first proposed a reciprocating piston four-stroke car engine. After more than 140 years of development, the efficiency of internal combustion engines has always been less than 50%. It is close to its performance limit.

In 1928, Dirac, the first American scientist, put forward the concept of "vacuum sea", saying that "the vacuum sea has endless energy." International physical experiments show that the traditional positive physical energy can be expanded 40 times. Internationally renowned scientist Li Zhengdao said in the preface of the 100 scientific problems in the 21st century: The 21st century is a century of vacuum energy. To see that one country and that nation take the lead in breaking through, we can grasp the dominance of industrial development.

As the current energy crisis is pressing day by day, many countries in the world have invested a great deal of talent and financial resources to develop new internal combustion engines and develop new energy sources based on the three elements of (PV/T) internal combustion engine principle and its structure. Such as the United Kingdom nitrogen cryogenic aero-engine to liquid nitrogen to reduce the starting temperature of combustion as the starting point; Russian ion engine to change the nature of the amount as a starting point for entry; US X37 hydrogen low temperature engine, liquid hydrogen to reduce the starting point of combustion temperature as the starting point; China Yangzhou eccentric rotation engine to change the quality of inertia away from the change of distance into the starting point. In the vortex engine of the invention, the six-stroke working system with internal cooling and negative pressure is proposed, and the supersymmetric energy is realized by taking the rotational inertia of the vortex as the starting point and at the same time performing the spatial change of the low temperature and the low density as the starting point.

6.2.1. engine structure:

At present, the traditional engine thermal efficiency and structural development have reached the limit, to reform the internal combustion engine to develop new energy as the goal, put forward a new type of internal combustion engine. Including two long cylindrical bodies (**A, B**), respectively, there can be direct rotation of multiple continuous vortex; a spherical combustion chamber (**C**), with internal cooling negative six program control chip, followed by a spindle serial A, B, C). The front end (A, B) rotary cylinder structure has an odd number of multi-headed spiral blades arranged hydrodynamically and orderly around the main shaft or cylinder wall, and the adjacent spiral blades form an orderly changing pitch and The structure of the combustion chamber (C) is mainly composed of two semi-hollow balls, and the ends of the combustion chamber (C) are provided with dynamic and static control sheets capable of controlling six programs of work.

6.2.2. the engine works:

By the external force or its own power by the B reverse vortex blade **A** spindle start, the spindle drive rotating cylinder A positive vortex blade rotation, the mixed fuel pressure in the leaf Road; pressurized fuel through the control sheet into the combustion chamber **C**, at this time in the low-temperature combustion environment, the ignition explosion in the combustion chamber **C**, the gas thermal expansion high thermal efficiency of high temperature, high pressure, high thermal energy into the rotating cylinder **B**, thermal expansion airflow to promote reverse vortex vane rotation, Produce mechanical energy consists of three parts:

(1), The spindle is rotated and the spiral vortex pressure feed in the front end **A**;

(2), Spindle rotation gear transmission and mechanical work to do work;

(3), Tthe main shaft rotates the subsidiary generator to bring its own power. as a result, an internal combustion engine that can control the supersymmetry energy (called vacuum energy) is formed

6.2.3. Six program work system:

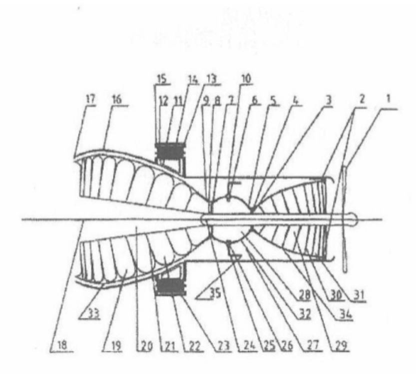


Figure 1

The internal combustion engine six-program work system to achieve a breakthrough in the internal combustion engine C low temperature vacuum state, the heat engine from the minimum value, that is, the lowest point of heat engine "pressure Pmin, volume Vmin, temperature Tmin", through the explosion "boundary change" The highest point "pressure Pmax, volume Vmax, temperature Tmax". The six program control chip is connected with the dynamic control chip through the spindle and the static control chip through the explosion chamber. Each control chip is provided with control points. In turn, the control chip is provided with holes and non-holes on the circumference to dynamically control the hole of the chip In the rotation, with the static control hole to achieve "Kai, closed" to achieve six procedures for the control of internal combustion engine work requirements, the implementation of the order of cold liquid into the gas (ef), fuel compression (fa), explosion (ab), rotating work bc), exhaust recovery (cd), suction negative pressure (de) (Figure 2).

In particular, a low-temperature, negative-pressure combustion environment creates an explosion of "positive vacuum" of positive material under vacuum conditions, resulting in the thermal energy efficiency effect of supersymmetric energy. Realize the traditional internal combustion engine structural reform and the use of controlled vacuum energy.

6.2.4, Thermal cycling performance diagram

The main highlight of the novel heat engine (engine) is "six-process control", which is the control of the super-symmetrical (vacuum energy) energy that enables controllable.

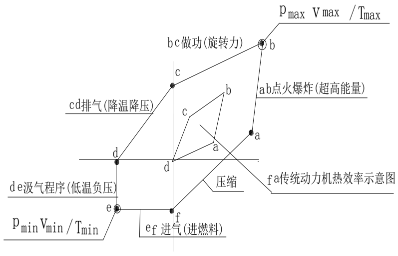


Figure 2

Workflow: ef - Forward Vortex Compressed Fuel (fa) - Combustion Explosion (ab) - High Energy Promote Reverse Vane Work (bc) - Exhaust (cd) - Suction Negative Pressure . It is shown that a new controllable energy source has been developed through the application of the ef negative pressure (de) process to generate supersymmetry and high energy.

6.2.5 , Vortex engine bright spot

(1) The new fluid mechanics model is applied to solve the design and manufacture of long continuous vanes, so that high energy flux can directly convert rotation force to work;

(2) Through the low temperature, negative pressure six program work system, produce super symmetry energy, physics called "vacuum excitation", "vacuum energy." Here is a hybrid new energy. That is, conventional piston internal combustion engines produce 50% thermal efficiency with 100% of conventional fuel; vortex internal combustion engines produce 50-100% thermal efficiency with conventional internal combustion engines with 5% of conventional fuel.

(3) The continuous vane of an internal combustion engine has no impact on the fuel and has a wide range of adaptation to fuel selection, and may be fuel, gas, solid fuel or even air, other natural energy, etc., depending on the thermal value of the fuel. No pollution exhaust, low noise, stable work, mechanical compact, light weight. Widely used aviation, aerospace, shipbuilding, submarines, automobiles, machinery and so on.

6.2.6, Engine patent introduction

[1], **"A Bi-directional Vortex Negative Pressure Air Hydrogen Engine",** Date of Application: February 17, 2014; Published Date of License: April 27, 2016.


证书号第2043846号

发明专利证书

发明名称：一种双向涡叶内冷负压航空氢动力发动机

发明人：汪一平

专利号：ZL 2014 1 0052227.0

专利申请日：2014年02月17日

专利权人：汪一平

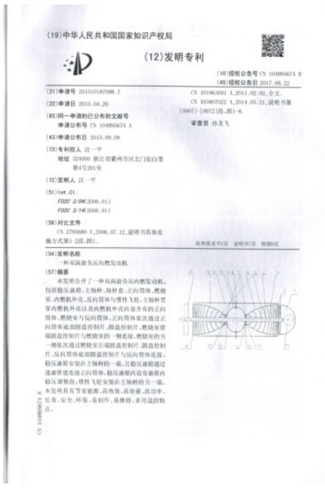
授权公告日：2016年04月27日

局长
申长雨

2016年04月27日

Figure 3

Vortex Aviation Hydrogen Engine Description:. (ZL201410052227.0) (Figure 2) A bi-directional vortex air-cooled negative pressure aerodynamic hydrogen engine, proposed two-way Vortex Negative Pressure Six-stroke control internal combustion engine working principle, (hereinafter referred to vortex aircraft engine), contains two round Shaped cylinder, the inner 置 positive and negative continuous vortex leaves, corresponding to the middle of a spherical explosion chamber, the explosion chamber at both ends attached to the control of six-program work piece, with a spindle (with shaft) or two circular tube Body (non-shaft type) in order to penetrate the connection, a controlled continuous working internal combustion engine. Among them, the six-program working system is to control engine "intake (oxygen fuel) -compression-explosion-work (high temperature and pressure) -exhaust-pumping gas simultaneously (the other pipe is continuous into the explosion room porphyrin coolant to achieve low temperature negative pressure Pre-combustion environment. "Its advantages are: widening the difference between" high temperature and high pressure and low temperature negative pressure "to increase the thermal efficiency and generate supersymmetric energy and develop a new energy source. High energy flow is directly converted into rotational power to do work The content of "stamping, rotation, power generation." [2], "A bidirectional vortex inner cooling negative pressure internal combustion engine",


(19)中华人民共和国国家知识产权局

(12)发明专利

(10)授权公告号 CN 104895674 B
(45)授权公告日 2017.08.22

(21)申请号 201510187088.7
(22)申请日 2015.04.20
(65)同一申请的已公布的文献号
申请公布号 CN 104895674 A
(43)申请公布日 2015.09.09
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(51)Int.Cl.
F02C 3/04(2006.01)
F02C 3/14(2006.01)
(56)对比文件
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审查员 孙龙飞

(54)发明名称
一种双涡旋负压内燃发动机
(57)摘要
本发明公开了一种双涡旋负压内燃发动机，包括稳压油箱、主轴杆、轴杆套、正向筒体、燃烧室、内燃机外壳、反向筒体与惯性飞轮，主轴杆贯穿内燃机外壳以及内燃机外壳内部含有的正向筒体、燃烧室与反向筒体，正向筒体依次通过正向筒体底部圆盘控制片、圆盘控制片、燃烧室前端圆盘控制片与燃烧室的一侧连接，燃烧室的另一侧依次通过燃烧室后端圆盘控制片、圆盘控制片、反向筒体底部圆盘控制片与反向筒体连接，

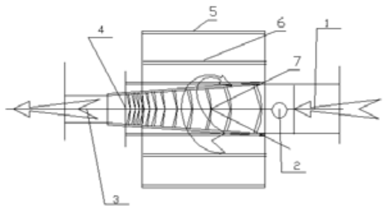
(ZL201510187088.7) Date of application: April 20, 2015; Published date: August 22, 2017.

Vortex negative pressure internal combustion engine Introduction: A double vortex negative pressure internal combustion engine, proposed bi-directional vortex negative pressure six-stroke control internal combustion engine working principle, (hereinafter referred to as vortex internal combustion engine), contains two circular cylinder , The inner heve continuous positive and negative vortex leaves, corresponding to the middle of a spherical explosion chamber, the explosion chamber at both ends with a six-program control of the work piece, with a spindle (with shaft type) or two circular cylinder (no Shaft type) in series throughout the connection, a controlled continuous working internal combustion engine. Six procedures for the work of the system synchronization control engine "into the gas (continuous into the oxygen fuel) - compression - explosion - work (high temperature and pressure) - exhaust - pumping gas (another pipe continuous into the explosion chamber hydrogen coolant to achieve low temperature Negative pressure before combustion environment. "Its superior performance: to reverse the traditional four-stroke piston internal combustion engine, widening the difference between" high temperature and high pressure and low temperature negative pressure "to improve thermal efficiency; high energy flow directly into rotational force work; That is to say, the conventional piston-type internal combustion engine produces 50% thermal efficiency with 100% conventional fuel and the vortex internal combustion engine produces 50-100% thermal efficiency with conventional internal combustion engine with 5% of conventional fuel developed a new energy source.

[3], **"A Kind of Directly Controllable Nuclear Power Engine with Multiphase Environmental Protection"**, (ZL201610792247.0), filing date: Sep 27, 2016.

Nuclear Power Engine Description: A controlled, small, environmentally friendly, multi-phase nuclear reaction, the direct application of nuclear-powered engines. The utility model comprises a main shaft, a forward conic cylinder (a forward three-dimensional continuous vortex blade is arranged in the conical cylinder), a spherical nuclear combustion chamber (a control chip and a spherical reactor), an inverse conical cylinder . The main shaft is connected to the above components in sequence, and the six-program working system is used to synchronously control the engine "intake (oxygen fuel) - compression - explosion (pre-explosion) Continuous hydrogen nuclear reactor coolant, low temperature negative pressure ") and" pre-detonation-fission-fusion-fission-fusion "of multiphase nuclear reactions. The invention has a multi-purpose engine nuclear power source which is controllable, highly efficient, high-energy, safe, environment-friendly, durable, direct use and easy to install and maintain.

6.3. Rotating machinery example



Most of the traditional mechanical vortex leaves: no change in blade radius, no change in inclination, leaf bending in the unit blade to complete, there is no change in pitch, and leaves no change in space. Traditionally used in centrifugal pumps, flat propellers, turbine / turbofan ... ... and other applications, said the rotating machinery. The representative rotation theory is a special case of "Three-element Theory" by Wu Zhonghua, a five-dimensional dynamic equation.

A novel characteristic feature point of rotating machinery is put forward: a certain continuous strip-shaped periodic positive and negative vortex-shaped vortex is provided inside the rotating cylinder, which is characterized in that: the radius of the blade varies, the centripetal (or centrifugal) The leaf tilt of the positive and negative blades and the leaf topography varied in order from 0 ° to 90 °. The pitch of the leaves varied in an orderly manner from large to small, and the order of leaf space changed between large and small. Its bright spot:

(1) is that the vane and fluid force in the continuous vortex is superior to the "sum of squares" of the turbine / turbofan in terms of "sum square", and also superior to that of the conventional equidistance rotary machine.

(2) Propose a mechanical device integrating the motor with the rotary machine. The fluid controls the swirling flow in a hermetically sealed scroll space, which exchanges energy (including mass, kinetic energy, space, position, value) in contact with the blade.

6.3.1. Rotating machinery Construction features:

Centripetal continuous positive and negative continuous vortex vortex blades are connected around the inner wall of the rotating drum of a rotating hydraulic machine or the central shaft. The vortex vane has space, area, pitch, density and mass moment of inertia Work together to establish a comprehensive relationship between multi-element and pressure, fluid movement. Overcoming the traditional mechanical unit leaves do not work continuously, impact, noise, shock, low efficiency, waste of energy and other defects.

6.3.2. Rotating mechanical and mechanical characteristics:

In the energy conversion of the fluid in the continuous swirl vane, the blades accept the acceleration for a long time, extract the commonality of multiple elements, and carry out the mathematical four-math operation without the content of specific elements.

6.3.3. Rotating machinery by the Chinese invention patent certificate:

"Underwater vortex propulsion" (ZL201010003887.1);

"Three-dimensional vortex extrusion machine" (ZL201110321519.6);

6.3.4. Invention patent examination of rotating machinery,

(1), Rotating machinery,

[1], "An electromagnetic axial-free heart-type high pressure water pump", (201711339646.2) Date of application: 2017.12.14. Vortex is a positive nine-dimensional multivariate dynamic equation. Electromagnetic effect, the continuous vortex water to produce a heart-shaped high-pressure pump, centrifugal pump more traditional than the higher pressure, high efficiency, low noise of the new pump.

[2], "An electromagnetic axial-free heart-type high pressure oil pump", (201711339622.7) Date of application: 2017.12.14. Electromagnetic effect, the continuous vortex on the oil body to generate a centripetal high pressure pump, with thermal safety device installed, than traditional centrifugal tandem pump more high pressure, high efficiency, low noise, safe new oil pump.

[3], "An electromagnetic shaft gas pump", (201711339621.2) filing date: 2017.12.14. Vortex is positive seven-dimensional multivariate dynamic equation. Under the action of electromagnetic force, the continuous vortex high pressure oil and gas pressure pump, with thermal and fire safety equipment, is more noble, efficient, low noise and safer than the traditional gas pump.

[4], "An electromagnetic shaftless high pressure air pump", (201711339639.2) Date of application: 2017.12.14. Vortex is a positive eight-dimensional multivariate dynamic equation. Electromagnetic effect, the continuous vortex high pressure air pump, with heat and fire safety equipment 置, higher than the traditional high pressure air pump, high efficiency, low noise, safe new gas pressure pump high pressure air pump.

[5], "An electromagnetic shaft hood", (201711339644.3) filing date: 2017.12.14. Vortex is a positive seven-dimensional multi-dynamic equation electromagnetic effect, continuous vortex hood, high pressure than the traditional high-pressure air pump, high efficiency, low noise, safe new hood. Belongs to household appliances;

(2), Engine expansion

[6], "An electromagnetic non-axial vortex steam generator", (201711339643.9). Application date: 2017.12.14. Vortex is a reverse seven-dimensional multi-dynamic equation. Under the action of electromagnetic force, continuous counter-rotating vortex is rotated by high-energy steam. Rotating cylinder connected by vortex rotor drives the rotor to rotate in electromagnetic field to generate power source (AC or DC), called steam generator. A new steam generator that is more pressure, efficient, quiet and safe than traditional turbofan / turbine steam turbines.

[7], "An Electromagnetic Shaftless Vane Hydroelectric Generator", (201711339643.9). Application date: 2017.12.14. Vortex is a reverse six-dimensional multi-dynamic equation. Under the action of electromagnetic force, the continuous reverse vortex vortex is rotated by high-energy hydraulic force, and the rotating cylinder connected by the vortex rotor drives the rotor to rotate in the electromagnetic field to generate electric current, which is called a hydroelectric generator. A new hydraulic generator that is more pressure, efficient, quiet and safe than traditional turbofan / turbine steam turbines.

(3), The expansion of marine propeller

[8], "An Electromagnetic Shaft Vortex Boat Propulsion Device", (201711342141.1) Date of application: 2017.12.15. Vortex is a positive eight-dimensional multivariate dynamic equation. Rotor under the action of electromagnetic rotation, driven by the cylinder continuous forward vortex rotation, resulting in strong wind pressure or water pressure, said the hydroelectric generator. Newer marine propeller that is more pressure, efficient, quiet and safe than traditional turbofan / turbine steam turbines.

(4), The expansion of the generator

There are also "a shaftless vortex power and generator", "a shaftless steam generator", "a shaftless gas generator" and other examples. Vortex is a positive and negative multidimensional dynamic equation.

In summary, the application of the project examples to illustrate the "NS equation and theory of relativity and engineering applications," the paper proposed by the universal and operability of computing methods, not to the invention any form of restrictions, such as the equivalent changes and mechanical , The change of mechanical parameters and the change of polynomial power dimension are all within the scope of the technical scheme of the present invention and are protected by the Chinese Patent Law.

7. Concluded

The theory of relativity (circle logarithm) is a novel and independent calculation system. The established polynomial kinetic equations (state of states equations or abstract state equations) can accurately reveal the internal and external flow states of multi-level steady flow and irregular steady flow under the known conditions and element composition rules.

The theory of relativity (log-logarithm) effectively solves the design and manufacture of long vane forward and reverse vortex blades. In the power engineering, the calculation principle of the heat engine with low temperature, negative pressure, vortex shedding, six-program control and asymmetric energy is proposed and a new energy source is developed. This article is called "Supersymmetric Energy" and Physics is called "Vacuum Excitation."

In particular, polynomial isomorphic dimensionless circle logarithm calculation, to achieve zero error mathematical four operations. In computer computing does not require the traditional computer gate, switch, programming and other methods. Applications through the artificially produced rotating machinery, converted to a controlled fluid movement, become "engine", "generator", "rotating machinery", "household appliances", etc., to provide universal service to human beings.

The theory of relativity (circle logarithm) can also handle a number of world math problems. Such as the "Riemann function and the theory of relativity" (dealing with Riemann conjecture limit$\{1/2\}^{+(Z\pm S\pm N\pm P)/t}$(K =+1) with Goldbach's conjecture limit $\{1/2\}^{-(Z\pm S\pm N\pm P)/t}$ (K =-1)problem), "state of psyche field and theory of relativity" (dealing with the unification problems of macroscopic gravity and microscopic quantum computation without quality content). Speaking at 2017 ICCM Guilin, China (International Computing Methods Conference 2017, collected in conference journals. published in Journal of Mathematics and Statistics Science.

Finally, I would like to express my sincere gratitude to the Associate Professors association of Quzhou, Zhejiang for their help and encouragement over the years, providing a platform for blogging; the concern and support of the Beijing Association for Relativity Research and the MATTER REGULARITY ISSN 1531-085x Copyright 2016 USA Magazine Gordon, Journal of Mathematics and Statistics Science (JMSS). Thanks to many signed and unsigned authors, users and websites for helpful information, guidance, attention and support.

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Published: Volume 2018, Issue 5 / May 25, 2018