

From Energy to Physical Phenomena

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Abstract

Through observation and summary, the operating principle of energy was reasonably inferred, and on this basis, potential field theory was developed. Through the explanation and explanation of the basic concepts of potential field theory, the nature of temperature, wave–particle duality, electromagnetism, mass and motion, gravity and other phenomena is reasonably inferred. The main conclusion is that the existence of energy gradients is the fundamental cause of all phenomena. Some speculations: dark matter is energy with low energy intensity; when the coupling of energy in the flow will generate fluctuations (electromagnetic waves), that is, quantum fluctuation.

1 Introduction

Light, electricity, magnetism, thermal, force, chemistry, and nuclear energy can be transformed into each other. The world has long taught us that they share a common root. In the past, we have established many theories to understand and explain this world. Molecules, atoms and quanta, from macro to micro, are becoming smaller and smaller, and our understanding is becoming clearer and clearer.

Now, I want to describe this world from the perspective of smaller units of 'energy'. By summarizing past theories, we can reasonably infer the basic operating laws of energy, and then use theoretical tool to describe different phenomena.

The main purpose of the potential field theory hypothesis is to reasonably speculate on the essence of many phenomena, so that experiments can accurately find the target. The theoretical basis of the hypothesis is the conservation of energy. The energy balance state is derived from the entropy increase principle, the energy fluctuation is derived from the Wave-particle duality, the energy in the fluctuation will not fluctuate again because the speed of light is unchanged, and the energy conservation leads to the energy coupling.

2 Fundamentals of Potential Field Theory

Energy equilibrium state (M0): within a unit space, energy is evenly distributed in space. The level of energy is represented by intensity, and energy always transmits and flows in the direction of energy equilibrium, that is, high intensity energy transmits and flows in the direction of low intensity energy, and ultimately tends to be evenly distributed.

Energy coupling (X): In the process of energy transmission or flow, when the direction is opposite, the parts with equal energy intensity will combine to generate an energy coupled body in an absolute stationary state, and the remaining energy direction and velocity remain unchanged; when the directions are perpendicular to each other, no binding occurs; when the directions intersect, the equal parts of the energy components in the opposite directions will combine to form an energy coupling body in an absolute stationary state, with the remaining energy direction and velocity unchanged. The energy intensity after coupling is equal to the total amount of energy involved in coupling, and energy is not lost.

Energy fluctuation (W): Essentially, it is the splitting of energy: energy with higher energy intensity splits into a certain amount of energy and transmits it to energy with lower energy intensity. The energy is discontinuous, and during the transmit process, these discontinuous energies can be seen as being on a fluctuation surface. For a more vivid description, it is expressed as energy transmitted in the form of fluctuations. If energy coupling corresponds to birth, then energy fluctuations correspond to death, and the cycle of energy birth and death constitutes a dynamic universe.

Meta potential field (Z0): The meta potential field is designed to better describe potential field theory. The essence of the meta potential field is a coupled energy body with a certain energy intensity, and a coupled body with lower energy intensity can be called a secondary meta potential field. Energy is transmitted from high intensity to low intensity, the potential field emits fluctuations. fluctuations have frequency, speed, and intensity. For the convenience of description, the meta potential field is equivalent to a point, which is called

the meta point, and similarly, the secondary meta potential field is called the dimensional point.

Field gap (O): fluctuations are emitted from meta points, and the closer they are to the meta points, the more energy they have on the same fluctuation surface. Therefore, the closer the meta points are, the more dimensional points are formed during energy coupling. When dimensional points fluctuate, the larger the superimposed energy gradient, hindering the approach between them and forming field gap. (The energy gradient represents the relative energy intensity of different regions in space, and the direction of the energy gradient is the direction of energy flow. The speed of energy flow is positively correlated with the energy gradient.)

Potential field (Z): Composed of meta points and field gaps. The potential field is for the convenience of describing composite fields, and it needs to be distinguished that the meta points are energy coupled bodies, while the potential field is a composite body. When multiple potential fields are combined into one potential field, the internal potential field is called a secondary potential field. The fluctuation of the potential field is the superposition of the fluctuations of internal meta points.

Potential energy (Q): The energy intensity of the potential field at a certain moment. For the meta point, the magnitude of potential energy is equal to the energy intensity of the meta point; For a potential field, the magnitude of the potential energy is equal to the sum of the energy intensity of the meta points and the energy intensity of the field gaps. The energy of the field gaps is composed of the energy of dimensional points and the energy of fluctuations.

Potential field gravity (G): The magnitude of potential field gravity is related to the flow velocity of energy vortex. The uneven distribution of energy in space leads to the formation of small energy vortex when energy flows. The small energy vortex drive the potential field to rotate, forming a large energy vortex centered around itself. The size of the energy vortex is positively correlated with the potential energy of the potential field, while the flow speed is negatively correlated with the radius of the potential field. Frequency (S): The fluctuation frequency of the meta point is positively correlated with the energy gradient. The energy gradient in different directions is different, and the fluctuation frequency of the meta points is also different. The fluctuation frequency of the potential field is the superposition frequency of internal meta points.

Fluctuation speed (V): The magnitude of the fluctuation speed is equal to the speed of energy transmission. The fluctuation speed has a constant property, that is, it cannot be exceeded in any frame of reference. When fluctuation propagation occurs, the meta point does not have fluctuation property, meaning it cannot fluctuate again during the fluctuation process. This property can be referred to as the fluctuation stationary state. It should be distinguished that fluctuation speed is the speed of energy transfer, not the speed of energy flow.

Fluctuation strength (E): The strength of one part of the energy during the splitting of meta point. The fluctuation intensity of the meta point is positively correlated with the energy gradient; The fluctuation strength of the potential field is the superposition of the fluctuation strength of the meta points.

The foundation of potential field theory is the potential field, which is based on energy equilibrium, energy coupling, and energy fluctuation. From the perspective of potential

field theory, the universe is a huge potential field, containing a large number of secondary potential fields and field gaps within it; The Earth is also a potential field, and its interior also contains a large number of secondary potential fields and field gaps. Due to the fact that the field gap is composed of a large number of dimensional points with different potential energy and fluctuations, energy flow is essentially the flow of dimensional points.

The essence of a potential field is a combination of high intensity energy, which continuously transmits energy outward and receives energy transmitted by other potential fields. When the total amount of energy transmitted outward is greater than the total amount of energy received, its potential energy will decrease, and this state is called a radiation state; When the total amount of energy transmitted outward is less than the total amount of energy received, its potential energy will increase, and this state is called the absorption state.

On the one hand, the potential field has divergence. Due to the absence of energy loss, energy is transmitted within the potential field as a cycle of energy, with only a small amount of energy transmitted and flowing to the surface layer. The surface layer of the potential field continuously exchanges energy with the outside world. The energy gradient at the surface of the potential field is relatively large, so the secondary potential field on the surface fluctuates more frequently towards the outside world.

On the other hand, the potential field has a certain degree of stability. When the potential field is in a radiation state, the potential energy of the secondary potential field on the surface decreases. The decrease in potential energy will lead to a decrease in fluctuation frequency and reduce the speed of energy transmit outward. The decrease in the potential energy of the surface secondary potential field will lead to the formation of an energy gradient between it and the secondary level potential field, and the frequency of the secondary level potential field fluctuating towards the surface will increase. This will lead to directed energy transfer between layers and balance surface potential energy. Due to frequency, the energy transmit between layers will exhibit hysteresis, meaning that the energy in the inner layer cannot be transmitted to the surface in a timely manner, which will delay the rate of potential energy reduction in the potential field. A potential field in a radiation state, due to the decrease in potential energy, will continuously reduce its field gap, which means the potential field will contract.

Similarly, when the potential field is in an absorption state, the potential energy of the secondary potential field on the surface increases. The increase in potential energy will lead to an increase in fluctuation frequency, which increases the speed at which energy is transmitted outward. In this state, the hysteresis between layers will delay the rate of potential energy increase in the potential field. The potential field in the absorption state expands.

Passing through different media, the speed of fluctuation (light speed) does not change, only due to the hysteresis between layers, which prolongs the time of fluctuation propagation.

3 Explanation of phenomena

Wave-particle duality: From the definition of fluctuation speed, it can be seen that when a fluctuation is transmitted, it is in a fluctuation stationary state and can be regarded as a meta point. Its potential energy remains constant, and only when energy coupling occurs, fluctuation will occur. When there is detection, the potential field used for detection itself has

a superimposed frequency and superimposed fluctuations. Energy coupling occurs between the superimposed fluctuations emitted by the detection potential field and the meta point fluctuation, generating dimensional points. The fluctuation of dimensional points will also be coupled with the superimposed fluctuations of the detection potential field and the meta point fluctuation.

When detecting, the smaller the spacing between potential fields (gratings), the greater the energy gradient in their space, with the highest energy in the middle and gradually decreasing along both sides. When the meta point fluctuation (light) passes through this space, it can be divided into two situations: 1. When passing through the middle, the middle is mostly the dimensional points in an absolute stationary state. The fluctuation of the meta point is only energy coupled with its fluctuations, and the loss is low; 2. When passing through from both sides, the flow of energy will cause disturbances to fluctuation of the meta point, and the meta point fluctuation will lean towards the direction of flow. Due to frequency, there is a time gap for this disturbance.

From this, it can be seen that when light propagates, it is a particle that is perturbed by energy flow and exhibits fluctuation characteristic when energy coupling occurs.

Temperature: Due to the fluctuation stationary state, temperature can only be exhibited when energy coupling occurs. Temperature can measure the instantaneous energy density of fluctuations in space, and the level of temperature is positively correlated with the instantaneous energy density of fluctuations. The instantaneous energy density of fluctuations is positively correlated with frequency and fluctuation strength. When the potential field is in an absorption state, the higher the energy density of the external fluctuations, the more energy the potential field receives, and the higher the temperature. Temperature can be transmitted through contact because the internal energy of a radiating object flows through the energy gradient formed by contact. The directional flow of energy inside the object leads to energy coupling and a decrease in the frequency of secondary potential field fluctuations, resulting in a decrease in the temperature of the object.

Electromagnetism From the definition of potential field, it can be seen that the potential field contains a large number of secondary potential fields, meta points, and dimensional points, so the internal energy flow is relatively chaotic and disordered. When two potential fields (voltage), one large and one small, are applied at both ends of the potential field, an energy gradient environment is created for the middle potential field. The internal energy of the potential field will flow towards the direction of energy reduction, forming a directional energy flow (current). The magnitude of the current is positively correlated with the speed of energy flow. For insulators, the imbalance of the potential energy of the internal secondary potential field causes the distribution of the secondary potential field in space to be scattered. The scattered secondary potential field will lead to the change of the direction of energy flow, and the opposite energy will be energy coupled, causing fluctuations and radiating energy outward.

Directional energy flow will drive the drift of the internal secondary potential field, changing the orientation of the secondary potential field. The orientation of the secondary potential field is related to its own shape and symmetry. The direction with higher superimposed frequency and fluctuation intensity of the secondary potential field tends to be perpendicular to the direction of energy flow. Combined with the disturbance of energy flow on the fluctuation direction, a superimposed fluctuation shape that is vertical and inclined towards the

direction of energy flow is ultimately formed on the surface of the potential field. The deviation amplitude increases with the increase of current. When there are other potential fields around the potential field with directional energy flow, the energy coupling of fluctuations will form a reverse energy gradient, generating mutual forces. According to the definition of fluctuation strength, the magnitude of the force is negatively correlated with the distance between the two potential fields.

It can be inferred that the essence of electricity is the directional flow of energy, while the essence of magnetism is the orientation of fluctuations, and magnetic force is the interaction between fluctuations. The more orderly the arrangement of molecules or atoms inside the material in the direction of energy flow, the less energy loss and the greater the current at the same voltage. Moreover, it is easy to deduce that the condition for the generation of force is the energy coupling between fluctuations, resulting in a reverse energy gradient.

Mass and Motion: The mass of matter is positively correlated with potential energy, and mass is the manifestation of potential energy. When material motion (uniform speed, acceleration, deceleration) occurs, the energy intensity of contact between the front and its opposite surface is different per unit time. The energy intensity of the front is stronger, while the energy intensity of the back is lower, forming a energy gradient. The energy gradient is positively correlated with the speed of motion and the energy intensity of the motion space. From the definition of energy equilibrium state, it can be seen that energy has the characteristic of transitioning from high intensity to low intensity, so the energy gradient generated during movement will hinder the movement of matter.

Here it can be inferred that: 1. The stable state of energy is an absolute stationary state and a fluctuating stationary state, both of which are unstable states. Can adapt to high-speed motion by changing the thickness and applying horizontal rotation. 2. Materials in motion also generate directional flow of energy, which generates heat or electricity. The magnitude of heat or electricity is positively correlated with spatial energy intensity and velocity.

Gravitation: From the definition of potential field gravity, it can be seen that the essence of matter's gravity is the energy vortex pulling surrounding energy. The source of energy vortex is the interaction between the potential field and other potential fields. The center of the vortex is the equivalent potential energy center of the potential field, and its gravity decreases with the increase of the radius of the equivalent potential energy center.

It can be inferred that the interaction between potential fields is the action of fluctuations, which triggers energy vortex. Energy vortex is the essence of gravity. When energy vortex do not exist, gravity will not exist. The existence of energy vortex is also a manifestation of the potential field maintaining its own stability.

4 Conclusion

This article speculates on the essence of some phenomena through potential field theory, and the main conclusion is as follow: the existence of energy gradients is the fundamental cause of all phenomena.

Some interesting conclusions are as follows: matter prolongs the propagation time of fluctuations; designing objects thinner and adding rotational properties would be more con-

ducive to high-speed motion; the universe we observe on Earth is curved by light; dark matter is energy with low energy intensity; when the coupling of energy in the flow will generate fluctuations (electromagnetic waves), that is, quantum fluctuation.