After Strict Comparison, the Conclusion of the Double-Slit Test Conflicts with the Mathematical Model

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Research Article

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Abstract

Since it was born before its physical achievements, light waves, which have almost no physical properties, are an abstract mathematical concept rather than an objective description. Confused by a set of dark and light streaks and a sketchy schematic that had little to do with the actual result, the double-slit test was misjudged as being caused by interfering light waves, so this plausible principle implied disastrous flaws. For example, (1) Just after passing through the double-slit device, the pattern is generated by light early or before interference. By changing the distance between the device and the screen, the pattern is only scaled synchronously without being reconstructed by interference, and imagined light-wave interference does not occur. (2) Interfering light waves can be subdivided into multiple parts and proliferate greatly. (3) A headless wave of light left outside the screen after the head disappears can still induce much interference. (4) There is no interference effect caused by reflected light waves. (5) The effect of polarization direction on interference is neglected, and the interference condition is incomplete. (6) In the mathematical model, not only are the spots with the highest brightness in the position where dark stripes should appear most, but the principle of generating multiple regular dark stripes cannot be found. (7) Since the quantum property must be carried out in the process of interference, if all conditions are not met at the same time, interference will not be triggered, and therefore, the principle of interference will be rejected. (8) Since light comes only from the radiation of the electron transition, it is impossible to generate a light source in a slit that may be a vacuum. (9) In the causality test, to verify the effect of collapse, the photon that has collapsed into a particle should be tested again with a double slit test. (10) Whether the phenomenon of "observed tampering results" obtained by observation has been tampered with. (11) When the phase is shifted π or the signal is reversed, waves become negative waves capable of annihilating themselves, which is typical of antimatter. In this case, matter and antimatter are conjoined. (12) If the general law of waves is followed, not only the targeted light wave passes through the slit. (13) The original version of the double-slit test cannot be reproduced, and the test results are different from those presented by contemporary technology. (14) Waves must obey Fourier's principle, but light waves, quantum waves and matter waves do not. (15) The modulation effect that waves must produce is not present in optical fiber communication. (16) If the light from different slits must interfere with each other, a mask full of slits will cause the lithographer to fail. (17) Since the size is much smaller than the wavelength, the photon is only a sampling of the light wave, but the corresponding physical properties are not presented. (18) The fact that the two stars orbiting each other do not change color only proves that the phenomenon of redshift is impossible but does not support the inference that the speed of light is constant. (19) The Michelson-Morley test process is not open and transparent enough, and pinhole diffraction and mechanical processing using broken lines instead of curves cannot be ruled out. (20) Kepler's law can block Hubble's law and its derivatives, dark matter and dark energy. In conclusion, Newton's particle model was wrong, but neither was the light wave theory.

1. Background

The basic formula of quantum is as follows:

$E=Nhf$ (1)

Where E: quantum energy. N: A natural number. h: Planck constant. f: Frequency.

Note: Planck constant h is a general constant. For any matter, the Planck constant h is constant. Frequency f is a special constant. Different kinds of matter have their own special frequency constant f, that is, each quantum frequency f has and only has one unique constant. N is the number of components of quantum energy, which is also the number of quanta.

Interference conditions and modes of light waves:

Fig. 2(a) shows the principle of double-slit interference, with solid lines representing wave peaks and dashed lines representing wave troughs. As shown in Fig. 4 (a) in the original version, only peaks are drawn without troughs, which is obviously incomplete.

1. Complete light wave interference conditions:
    1. Conditions automatically met: amplitude.
    2. Under existing conditions, the frequency (wavelength) of the light waves involved in interference must be the same.
    3. Under existing conditions, the phase difference of the light wave involved in interference is constant.
    4. Ignored conditions: the necessary conditions not to trigger interference. Because the process of interference is quantum, it is triggered suddenly only at the moment when all the interference conditions are simultaneously satisfied. Otherwise, the principle of noninterference is not reasonable.
    5. Ignored conditions: The role of polarization direction cannot be ignored. When light waves with different polarization directions interfere, the results are synthesized by vectors, and the quantum characteristics of light waves are destroyed.
2. Interference mode:
    1. Superposition interference: Peaks on top of each other, troughs on top of each other. As shown in Fig. 2(a), wave peaks are superimposed at the intersection of the two solid lines. At the same time, troughs are superimposed on adjacent points intersected by two dotted lines. According to the principle of interference, bright streaks on the screen come from photons generated by superimposed interference.
    2. Annihilation interference: The peaks and troughs annihilate at the same time as the troughs and peaks. As shown in Fig. 2(a), the interference principle holds that the dark streaks on the screen come from annihilation interference.

3. Non-interference: other cases.

3. Positive and negative waves:

Without loss of generality, the mathematical expression of a wave can be set as:

$u1(t)=A\sin(2\pi ft+\theta 0)$ (2)

where A is the amplitude; f is the frequency; t is the time; and $\theta 0$ is the initial phase. If the phase is shifted by an odd multiple of π, the result is reversed:

$u2(t)=A\sin(2\pi f\ t+\theta 0\pm(2k+1)\pi)=-u1(t)$ (3)

Where k is any integer.

2. The Analysis

The principle of light wave interference is in serious opposition to the basic principle of quantum

As shown in Fig. 2(a), in general, the width (w in Fig. 2(c)) of the slit (SR or SL in Fig. 2(a)) of a double-slit device is roughly the same as the partition between the slits (G in Fig. 2(a)), so the central spacing D of the double slit is the sum of the widths of a slit and the partition. Without loss of generality, the light waves passing through slits SL and SR are named PA and PB, respectively. By the principle that light waves from different slits must interfere with each other, each light wave in PA and PB interferes with each other. The light wavenumbers contained in PA and PB are m and n, respectively, and the values m and n are both natural numbers greater than 0 and almost identical. They are proportional to the spacing D and the light intensity and inversely proportional to the size of the photon, so the values are large. The number of photons increases from $m+n$ to mn since each interference point creates a new photon that forms a streak on the screen. Quanta proliferate greatly.

Note: (1) The schematic diagram shown in Fig. 2(a) expresses limited information. It is only a horizontal section diagram, and the light source is definitely not a two-dimensional arc only existing in this section. Normally, the light source is a sphere, so there will be more interference in three dimensions. That is, the interference along the length of the slit (Lm in Fig. 3(b)) should be greater than the experimental result (T in Fig. 3(a1)). The difference is that in practice, the width of the bright stripe in this direction (T in Fig. 3(a1)) is always the same as the light source (H in Fig. 2(c)). (2) The way light waves travel through the slit, one after the other, as shown in the picture, is unimaginable. Although the width of the slit w (Fig. 2(c)) is narrow but much larger than the size of the photon, horizontal multiple photons walking side by side are the norm, which increases the number of interferences by a factor proportional to the width w of the slit. (3) In the direction Lm (Fig. 3(b)), the light wave is a beam whose height is the source's height H (Fig. 2(c)) rather than just a layer on the cross section. This will make the multiples of interference growth proportional to H. In addition, the increase is proportional to the density of the photon and inversely proportional to the size of the photon.

In conclusion, according to the principle of light wave interference, reasonable deduction will surely produce a large number of proliferation results. This obviously violates basic physical laws such as the conservation of matter and energy. For the test results, the propagating light wave due to principle error is not presented.

As shown in Fig. 2(a), the bulge of the light wave always arrives on the screen before its interference point. The mark printed on the screen is a record that the light wave has been used. At the moment, there is some distance from the screen to the foremost interference point FI, which is proportional to the distance D. According to the principle of the double slit interference test, the interference phenomenon is caused by the light wave with the head missing. This means that quanta can be partitioned arbitrarily and headless waves of light do not collapse to nothing. Here, a number of quantum principles are not followed.

See Fig. 7. Since the size of a photon is much smaller than its wavelength, the real "light wave" is not a smooth curve but a discontinuous dashed line, and the photon is only an element of the "light wave". If annihilation interferes to form dark streaks, it is hard to imagine how to do that.

The principle of light wave interference is inconsistent with the results of the double slit test

After careful comparison, it is found that:

1. See Schematic Fig. 2(a). Since the light wave from any slit cannot reach the center of the two targets, TS and TR, there should be a dark stripe. Compared with the test results shown in Fig. 3(a), it is not the dark stripe but the brightest part in the pattern.
2. The mathematical model shown in Fig. 2(a) is a schematic diagram, and there is no other possible place for dark stripes outside the center. Note that this is a schematic sketch. To show the details of the principle of interference, a large number of elements are omitted. The light waves in this image are so sparse that there are significant gaps between them, which are so dim that they are barely visible. Fig. 3(a) shows that the light intensity of the light source is bright enough. Because the space occupied by light is not exclusive, the space occupied by photons can overlap partially or even completely. Not only is there no visible break between the waves, but the density of the waves is high enough that each wave has to overlap with several waves to varying degrees. Therefore, dark streaks outside the center are not possible in the mathematical model. However, as shown in Fig. 3(a), there are several dark streaks that regularly appear in the wrong places.
3. According to the principle, the interference area is between the double-slit device and the screen. If the distance between them is changed (Y in Fig. 2 (a)), the pattern on the screen should be changed accordingly, and different Y should correspond to different patterns. However, the size of the pattern on the screen will change, and the style will not change. When Y is close enough, the pattern is concentrated in a small area and thus extremely bright. As Y increases, the pattern zooms synchronously and darkens. This is enough to prove that the pattern is shaped by double slits rather

than interference and that the photons leaving the slits travel in straight lines, with nothing happening to each other. The so-called light wave and interference are not correct.

4. The size of the superposition interference point is 0, and the size of the photon generated by it is not 0, which is out of thin air.
5. No ray can cross the death line of destructive interference.
6. A water wave contains multiple waves, and the distance between the peaks is the wavelength. However, because light waves are much smaller in size than wavelengths, a wavelength contains an untold number of light waves.
7. As shown in Fig. 4(b), the divergence angle β of the stripe in the double-slit interference test is very small, which is inconsistent with the wave interference phenomenon.
8. The result of water wave interference is a standing wave that is stationary and cannot propagate. In the same way, the light produced by superposition interference must be nonpropagating, static light that oscillates only at the permanent interference point and cannot move to the screen. The interference light reaching the screen must be superimposed on the screen. Stationary light can only be understood as nonemitting light or black light. Note that the interference points in the schematic diagram are all on the road from the double-slit device to the screen. According to the interference principle, they are permanent points that cannot move with the propagation of light waves, and the interference effect cannot reach the screen.

In conclusion, the result of the double slit test cannot be caused by the interference of light waves. Both light waves and interference are wrong.

Paradoxical principles of interference

In the interference schematic diagram shown in Fig. 2(a), solid lines represent wave peaks, and dashed lines represent wave troughs. In the original Fig. 4(a), only peaks were drawn without troughs. Superposition interference occurs simultaneously at the intersection of a pair of solid-solid lines (crest-crest) and dashed line-dashed lines (trough-trough), and extinction interference occurs simultaneously at the intersection of a pair of solid-dashed lines (crest-trough) and dashed line-solid lines (trough-crest). In the principle of interference, the interference condition is often considered, and the principle of noninterference is ignored. However, a deeper study of the reasons for non-intervention reveals a hidden side to the principle of intervention. Because interference is a pair of contradictory phenomena, to avoid the intersection of conditions, noninterference conditions as excluded terms must be mutually exclusive with interference conditions. According to the principle of quantum indivisibility, quantum or its basic physical properties can only function in a holistic way rather than in a partial way, so only all interference conditions work at the same time can the interference be triggered, that is, the interference process is also a quantum state. Otherwise, the principle of noninterference cannot be justified. As seen from the schematic diagram of interference, the duration of interference approaches 0 infinitely because

the size of the intersection point is 0. This means that (1) simultaneous rather than sequentially satisfied conditions trigger interference. (2) When the condition is satisfied, interference occurs in a sudden rather than gradual manner. Although being much smaller than its wavelength makes it look very different from the whole, this in no way prevents each light wave from having all the features. The most basic physical characteristics of light waves are peaks and troughs. Therefore, interference rules must be followed: interference can be triggered only when the interference conditions of peaks and troughs of light waves are met at the same time. See Fig.5 (a). (A) is taken as the reference wave. Since the propagation direction is the same, it is easy to understand that (B) superposition interference occurs with (A); (C) destructive interference occurs with (A); and (D) does not interfere with (A). However, if the propagation direction is different, the interference process cannot satisfy the quantum state, and (E) cannot superimpose with (A) as (B) does. Similarly, (F) cannot interfere with (A) annihilation as (C) does. In this case, because of the different directions of the rays involved in the interference, the interference conditions – especially the crest and trough of the wave – cannot be met at the same time, and the interference mode is forced to scan the whole body of the light wave from a point, so the double-slit test and Michelson-Morley test violate the quantum principle of interference. The experimental results obtained are not caused by light wave interference.

The medium of water wave propagation is fluid without a quantum state. The energy of the water wave is evenly distributed on the wave front. If there is no obstacle, it will propagate smoothly in the medium. When a water wave encounters an obstacle hard enough, its normal propagation path is blocked. To satisfy the law of conservation of energy, the obstacle reflects a wavelet with the same frequency, wavelength and velocity as the wave source but with a phase difference of π. The water waves leaking out of the gap form a new wavelet source, as shown in the figure. The water waves from different gaps gradually interfere at the intersection points. Similarly, Thomas Young's principle of light wave interference is shown in Fig. 4(a). Only the waves generated from the same wave source can satisfy the condition of interference. A beam of light in slit *a* of single-slit device S1 reaches slits *b* and *c* of double-slit device S2 at the same time and becomes two coherent beams of light. After they interfere with each other, stripes in the double-slit test result are generated. However, because the physical properties of "light waves" and water waves are so different, this plausible principle is not true. (1) The light source comes from the radiation of the electron transition and cannot be born in a slit that may be a vacuum. (2) It is impossible for quanta from different directions to interfere. (3) As shown in Fig. 4(a), the test results remain unchanged during the rotation of the attitude of the double-slit device from Z0 to Z1 (relative to Z0, -π/8 to π/8); that is, there is no need to comply with the restriction that light waves reach slits *b* and *c* simultaneously. The light that produces the stripes does not need any interference conditions; the two beams are not light waves at all and therefore cannot interfere with each other.

According to the original version of the progressive interference principle (see Fig. 5(c)), the direction of the interference result must be the angular bisector of the angle between the two interfering light waves.

Unfortunately, interference is impossible even when all the conditions are met for light waves. The "light waves" traveling in the same direction must travel the same path, and because the speed of light is the

same, the latter can never catch up with the former and therefore cannot interfere. Therefore, there is no occasion for interference. When multiple "light waves" come together, as expressed in formula (1), only their energy is gathered together without anything else happening. In fact, without the dubious double-slit test and the Michelson-Morley test, there is no evidence that intersecting rays interfere.

Disaster of light and matter wave theory, antimatter and matter concomitant

As shown in Figure 1(a), see formulas (2) and (3). Since $u1(t)+u2(t)=0$, $u1(t)$ and $u2(t)$ are a pair of opposite waves that annihilate each other. Fig. 1(b) is a circuit that generates signals of opposite polarity. In Fig. 1(a), the role of waves fluctuates over time once per period between positive and negative waves. The half-period region, X, is both a negative half-period of the positive wave and a positive half-period of the negative wave. For any initial phase $\theta 0$, the phases of $u1(t)$ and $u2(t)$ are always opposite. Thus, a point on a wave at any time can be positive at one reference point and negative at another. Obviously, the term wave applies to electromagnetic waves, light waves and matter waves. Because electromagnetic waves are man-made, it is easy to understand how positive and negative waves cancel each other out, the equivalent of short-circuiting a synthetic signal to the ground. However, the key feature of matter and light is objective matter, and negative light waves and negative matter waves are antimatter. If so, it is forced to draw the following surprising conclusions: (1) Matter and antimatter periodically swap roles, matter and antimatter are conjoined, and matter is antimatter at the same time. (2) Light and negative waves periodically switch roles. Light and negative waves are joined, and light is also negative. When light is identified as a wave, this strange feature comes unexpectedly.

Rotation test of double-slit device, "interference of light wave to generate stripe" is not credible

Fixed light source. As shown in Fig. 3, with the rotation of the double-slit device, the alignment direction La of the stripes in the test results rotates synchronously, and the vertical relationship between La and the middle line of the double-slit Lm is always maintained. This shows that the key factor determining the direction of stripe arrangement is the angle of the device. Because interference occurs only after slits, its effect cannot be insignificant. The results are only affected by the angle of the slit through which the light passes, ignoring the interference of the light, which only shows that the experimental results are independent of the interference of the light wave.

Fatal flaw: Ignoring the role of polarization direction in interference conditions

Fig. 5(b), α: polarization direction of the photon, which is the included angle between the photon vibration direction and horizontal direction. A light wave is a shear wave whose vibration direction lies in the normal plane S of its propagation direction. Water waves vibrate only vertically towards the center of the

earth. The difference is that the direction of polarization of light is not just one but all over plane S. In general, the light has no particular preferred direction, and the polarization angle α of the photon is the average probability distribution, which ranges from 0 to π. For example, a solar beam contains all polarization directions, so it has no preferred polarization direction. Because of polarization, light waves require far harsher interference conditions than water waves. For two light waves to interfere, not only must they have the same frequency and constant phase difference, but they must also be polarized in the same direction. See Fig. 5(c). In the figure, θ is the angle between the two light waves involved in the synthesis, and A is the amplitude of each light wave before the synthesis. After synthesis, the direction is the angle bisector of the included angle θ, and the amplitude is:

$$2A\cos(\theta/2)<2A$$

Since the polarization direction is not quantum, the vector composition of the new polarization direction is reasonable. However, since the amplitudes are quantum, the resultant vector amplitudes are illegal.

As a result, interference between light waves in different polarization directions is impossible. For example, to watch a stereoscopic movie, two visual signals with horizontal and vertical polarization directions are projected on the screen at the same time, but the two signals do not interfere with each other, and the polarizing glasses can correctly separate the two clear light signals. If the effect of the polarization direction is negligible, the principle of noninterference cannot be explained.

The original double-slit test cannot be reproduced, and the "light wave" only passes through the targeted slit

The original version of the test used a double-slit test device, Fig. 4(a), with a single-slit device on the front for interference between the two beams. Obviously, (1) a sufficiently narrow slit *a* must produce Fraunhoffer diffraction [18][19][20]; (2) when slit *a* is wide enough, the common sense that rays cannot be bent prevents the flickering candles from interfering with each other. An unavoidable problem is that when causality tests are carried out, light can collapse into particles only in the slit of the double slits; otherwise, if the light is already particles before entering slits b and c, all particles must hit the partition between the slits of the double slits so that few particles can pass through the slit.

The widely cited pattern of the original test results is shown in Fig. 4(a). However, the modern version of this test uses only a double-slit device, and the results are shown in Fig. 3(a). Discover not hard, two kinds of design differ greatly, the stripe of former is closer to rectangle, the stripe of latter is closer to ellipse.

Whether aimed or not, if light is a wave, according to mathematical models Fig. 2(a) and Fig. 4(a), light waves must pass through the slit. However, the experimental results show that the intensity of incident light is much greater than that of the stripe after transmission. At the same time, the light reflected by the double slit device is much more than the light transmitted. Only a small amount of light in the experiment

managed to pass through the slit, which is just the light that travels through the slit. The vast majority of light that is not aimed at any slit cannot pass through the double slit device and is reflected or absorbed.

Why does reflected light not interfere?

As shown in Fig. 2(b), reflected light waves can also cause interference. Objects can be seen because they reflect light. Screens are visible but not very reflective. However, the experimental results show that there is no interference effect of reflected light.

The lithography machine will not work properly if the light waves passing through the slit interfere with each other.

The slits of both the double-slit device and the mask have similar optical properties. According to the conclusion of the double-slit interference test, the light waves interfere with each other to produce stripes; then, the mask will inevitably produce countless interference stripes due to the numerous slits, and it will be impossible for the lithography machine to clearly reduce the patterns on the mask to the wafer.

Principle of refraction and propagation distance of light

As shown in Fig. 6, medium A is above the interface, the speed of light is V_A and the wavelength is λ_A. Below the interface is medium B, the speed of light is V_B, and the wavelength is λ_B. According to Huygens' principle, what causes refraction when light passes through the interfaces of different media is that light's refractive index is the ratio of wavelengths in different media. Light waves have different wavelengths because of the speed of light in different media. Note that the speed of light is the fastest and the wavelength is the longest in vacuum. However, this principle is debatable, and the key factor that causes refraction is the different speeds of light in different media.

The energy of an electromagnetic wave is determined by its amplitude, independent of frequency or wavelength, and its amplitude can be adjusted or limited. The amplitude of the electromagnetic wave can be partially excised, which creates an extra spectrum. According to quantum theory [1][2][3], quantum energy is determined by frequency, is indivisible, and can only be absorbed or maintained as a whole. Therefore, the frequency of a quantum cannot be changed during its existence; otherwise, it is a different kind of quantum. As the distance a photon travels through the medium increases, the photon is destroyed as a whole once the speed of light cannot be kept above the minimum threshold. If you travel a sufficiently long distance, all the photons will be destroyed. Therefore, the denser the medium is, the slower the speed of light and the shorter the distance it travels.

Modulation effect not shown by fiber optic communication technology, light wave?

In optical fiber communications[15][16][17], the transmitted digital signal has a spectrum base band whose bandwidth is proportional to the communication rate. Theoretically, the spectrum bandwidth of the digital signal is infinite. If light is a wave, it is a carrier. Without loss of generality, let the carrier be $sin(\omega_c t)$ and the digital signal be $cos(\omega_s t)$. Then, ω_c is a single-frequency constant, and ω_s is not a single-frequency constant but a range. The modulation results:

$$s(t) = \sin(\omega_c t)\cos(\omega_s t) = [\sin(\omega_c+\omega_s)t+\sin(\omega_c-\omega_s)t] / 2 \qquad (4)$$

The resulting spectrum is a conjugate spectrum of $\omega_c + \omega_s$ and $\omega_c - \omega_s$ centered on the carrier frequency ω_c. This means that the frequency of the photon is changed from one to two conjugated spectra of the same width as the base band of the signal. Since photons of different frequencies are different photons, modulation changes photons of one frequency into a series of photons of different frequencies. This obviously violates the fundamental principles of quantum mechanics, and in fact, it does not happen in fiber-optic communications. Moreover, the spectrum in the baseband is continuous, but not every frequency spectrum exists.

Light waves are inconsistent with the widely accepted Fourier principle

As shown in Formula (1), the quantum energy E is determined by the number of quanta N and Planck constant h and frequency f. The frequency corresponds to the kind of quantum, and different frequencies correspond to the quantum of different matter. Each kind of quantum has only one definite frequency, the specific frequency refers to only one kind of quantum, and the frequency of each kind of quantum (such as a laser) is a constant. Since there is only one constant, both the quantum and laser spectra have only one line and no bandwidth. However, although frequency is the basic physical parameter of a wave, according to the Fourier transform principle [12][13][14], the signal must undergo a transition process composed of harmonics before reaching the steady state at the starting and ending points, so any wave that exists only in finite space-time cannot have only one frequency but must be a frequency band. This conclusion was confirmed by radiocommunication technology [10][11] and regarded as the basic principle that had to be followed. Otherwise, if there are electromagnetic waves with zero bandwidth, the brilliant achievements of radio communication technology will not be worth mentioning.

Cannot explain the reflection and focusing of light waves

Regardless of what it hits, a wave always generates a wavelet source at the point of contact and propagates or diffuses its reflected wave. In this case, the reflection principle that the angle of reflection is

equal to the angle of incidence does not apply to waves but only to other physical objects. As a result, light waves cannot form specular reflections. Even when it hits the focalizer, the reflected light waves still spread out, not explaining the focusing principle.

A photon is equivalent to a sampling of a light wave, the physical basis of which collapses

As shown in Fig. 7, since the diameter of the photon is much smaller than its wavelength and occupies space without exclusivity, the light intensity (i.e. density) is not restricted by space, so the number of photons that can be arranged within a single wavelength is huge. The reason light waves are not drawn as solid lines is because the time occupied by photons in the whole period is negligible. In the figure below, the physical significance of a photon is equivalent to a single sampling of a light wave. According to the Nyquist sampling principle, the sampling spectrum expands symmetrically and conjugated with the fundamental frequency of the photon. Only smooth waveforms have the narrowest spectrum, so the photons that make up a cycle of light must be a collection of members with the same fundamental frequency but each with a different phase (which already undermines the interference condition). If the minimum phase difference between the photons is constant δ, then the phases of the photons in the collection are $k\delta$, k is an integer, and k>=0. k is arranged in order from small to large, and the phase difference between adjacent photons is δ. As a photon moves, its phase does not change with time or position. Because each photon is different during the period, the structure of light waves is obviously absurd.

The Michelson-Morley test could not eliminate the suspicion of machining traces and pinhole diffraction.

The results of the Michelson-Morley test [21] yield two very important conclusions. (1) Light is wave. (2) The speed of light is the same in all directions, and the aether does not exist. Light is not a wave, according to the abundant evidence listed above. Contrary to the conclusion of this experiment, it is necessary to further study the following aspects of this experiment. (1) First, remove one of the two optical paths and perform the single optical path test without interference. (2) Imaging equipment is highly suspected. Due to the limitation of processing capacity, arcs are forced to be replaced by broken lines, making it impossible to process ideal optical surfaces. Mechanical traces on objects such as glasses or the bottom of glass bottles can produce optical patterns similar to those found in the tests. (3) If there is a pinhole, the diffraction effect can also produce a similar pattern. (4) The middle of the experiment is worth studying, and the opacity of the experiment is tantalizing.

Two startling conclusions are inescapable

Doppler's principle states that the wavelength of a wave is compressed as it moves towards the observer, a phenomenon known as forward motion. Instead, the wavelength is stretched as the source moves away from the observer, a phenomenon known as regression. Thus, in a binary star system orbiting each other, if the stars are exactly at opposite ends of their orbits relative to the Earth, they travel at the fastest speeds toward or away from the Earth. If light is a wave, according to Doppler's principle, the fading star must have a redshift, and the advancing star must have a blueshift. However, observations showed that the stars in the binary system did not change color. Much evidence has been provided to prove that light is not a wave. The colors of the stars in a binary system remain the same because the conditions necessary to produce the Doppler effect are not present. However, the light in this phenomenon is still forced to be interpreted as a wave, which leads to two startling conclusions:

1. There is no redshift or blueshift because the speed of light is constant and independent of the reference frame. This conclusion is the cornerstone of relativity. Obviously, this explanation is not only barbaric but also far-fetched. Whether the speed of light is constant can be verified by modern technology. Because of rotation, the earth rotates toward and away from the sun in the morning and evening, and accurate measurements of the speed of sunlight near the horizon in the morning and evening can test this conclusion. Note that the Earth's motion around the sun cannot be ignored.
2. According to Hubble's Law [6][7], the farther away from the Earth, the more serious the redshift of the celestial body. This completely ignores the fact that the colors of stars in binary systems do not change. The reality is that (1) because light is not a wave, the spectra of celestial bodies cannot be redshifted or blueshifted. (2) The more distant objects become redder not because of redshift but because of blue decay. Because there is no absolute vacuum, the farther the light travels, the shorter the wavelength, and the more it degrades and refracts. (3) The subject of the so-called redshift is not the radiation spectrum of light but the absorption spectrum of hydrogen. Obviously, radiation is produced by the subject: absorption by the object. It is reasonable that the wave source of radiation waves produces the Doppler effect, but the principle that absorbing material produces a redshift due to the Doppler effect is not reasonable. If, on the other hand, the radiation has already been redshifted by the Doppler effect after it leaves the celestial body, is the absorbed redshift data valid? The answer is no. This is because the radiation spectrum has been redshifted to a different spectrum with different absorption properties. (4) There are too few redshift characteristic data, and it is difficult to follow the redshift results of the absorption spectrum determined by only a few typical characteristic data. (5) The comparison between typical characteristic data of the absorption spectrum and standard value shows that the proportion relation is not precise. (6) Magnetic induction lines are closed loops and cannot be found in the same physical form in the light. Regardless of how redshifted, light waves cannot become magnetic lines. (7) Derivative conclusions of Hubble's law include the expansion of the universe, the Big Bang, dark matter and dark energy. However, concepts such as dark matter conflict with Kepler's planetary laws [8][9]. In fact, Kepler's three laws of planets stand up to all the celestial bodies in the solar system. Its correctness is unquestionable, and its position cannot be shaken. Uranus and Neptune were found

using these three laws in the absence of dark matter and dark energy. If dark matter and dark energy are mixed in, the whole law of our solar system will be overturned.

The phenomenon of "observation determines outcome" has also been observed

In the causality test of double slit interference. (1) The test results before the introduction of observation were multiple stripes of light and dark, as shown in Fig. 8(a). In this case, light is considered waves, interfering waves that produce interference stripes. (2) If observation is introduced, there are only two bright stripes with a dark stripe in the middle, as shown in Fig. 8(b). In this case, it is identified as a particle, and there is no interference of light waves. The cause of the two different test results was identified as whether they were observed. This leads to the confusing logic that the result of an experiment is ultimately known by observation, whether or not the observation is introduced. Whether it is an instrument or a person, whether or not "observation changes the result of the test", it is human observation that ultimately knows the result of the test. Even if the cause is the instrument, ultimately the person observing the instrument is the human. If observation can falsify history, it cannot be ruled out that the phenomenon was falsified when it was observed. If being observed or not makes a difference, then why must the collapse rules be followed: when not observed, they collapse only into waves and when observed, they collapse only into particles and not the other way around? Can "interference" stripes be generated again if the light that has collapsed into particles is projected onto another double-slit device as a light source?

3. Conclusion

The analysis shows that light is not a wave and that light waves are a misconception in any case. Therefore, the light waves identified by the double slit interference test, Michelson-Morley test, Huygens principle and the wave-particle duality of light [4][5] are incorrect. Newton's particle model of light was also wrong. However, the new quantum model must agree with the results of the double slit test. Therefore, Thomas Young's double slit experiment was still a great physical experiment.

4. Instructions

The physical significance of quantum parameters such as frequency, wavelength and period

Although not a wave, a quantum still has physical parameters such as wavelength, frequency and period. The quantum objects described by these parameters include the transition period and size fluctuation. The size of quanta may fluctuate periodically. Although the energy of a quantum is fixed, the spatial distribution of its energy density may fluctuate periodically.

The light

Just as current is a directional flow of charge, light is a flow of photons. In any case, light never expresses the properties of waves. All the conclusions about light waves are a distortion of the relevant experimental results.

There is no collision or energy exchange between intersecting rays

Since photons have a rest mass of zero, they are transparent to each other, and any photon does not prevent other photons from using the space they already occupy. There is no limit to the degree of overlap between the spaces occupied by different quanta, and quantum theory also holds that multiple photons can occupy the same space at the same time. As a result, nothing happens to the intersecting photons when they collide, neither exchanging energy nor changing the direction of any of the photons. This rule only applies to photons with zero rest mass on both sides; otherwise, when contact occurs, the object can change the direction of the photon's motion or make it disappear.

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Figures

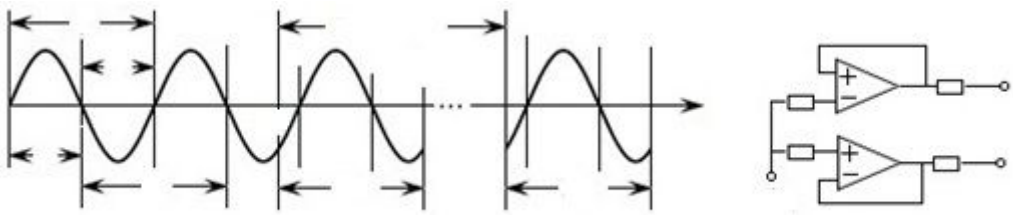

Figure 1

(a) Matter and antimatter waves are conjoined (b) Circuit for generating mutually inverted signals

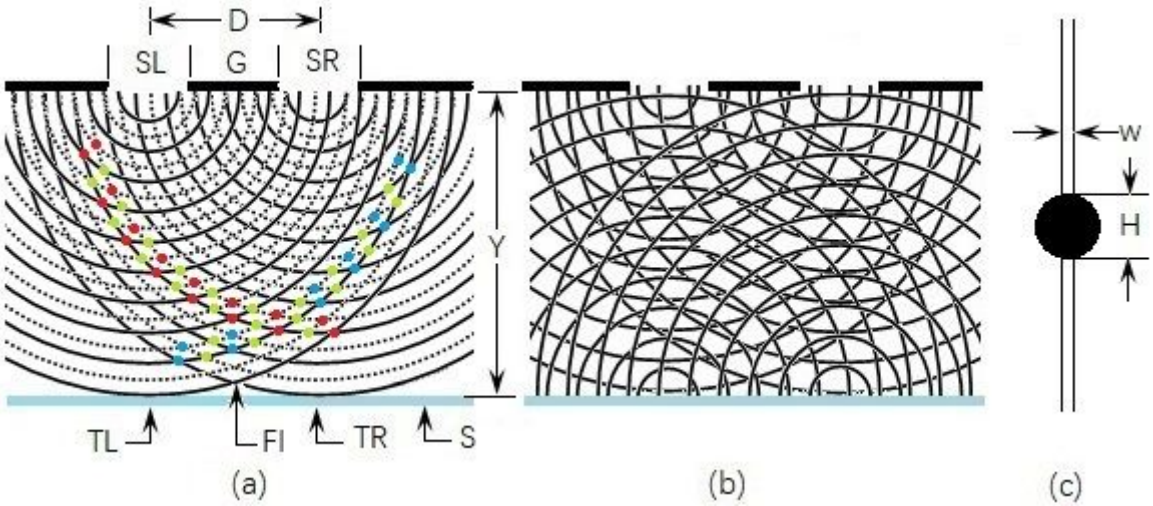

Figure 2

Mathematical model of the double-slit interference test

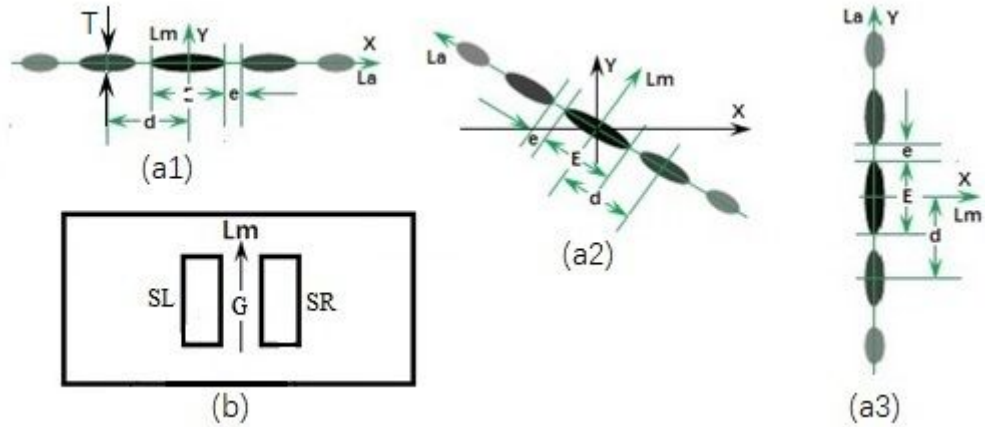

Figure 3

Double-slit test results and device

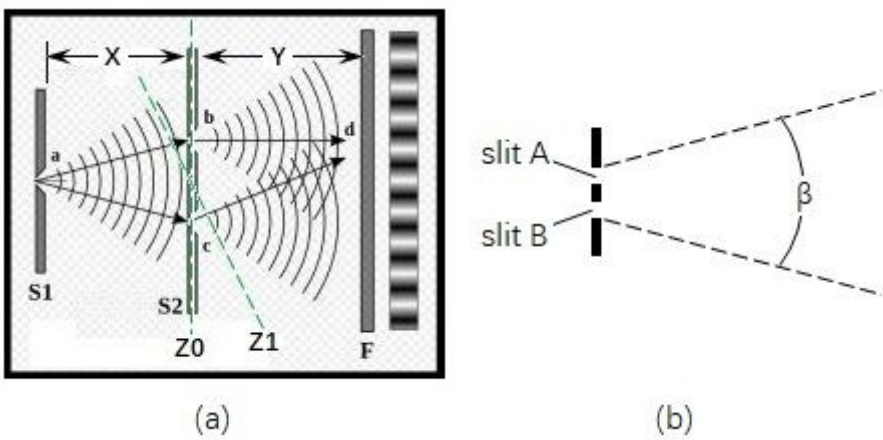

Figure 4

Double-slit interference principle and divergence angle of tests

Figure 5

Principle of wave interference and action of polarization of light

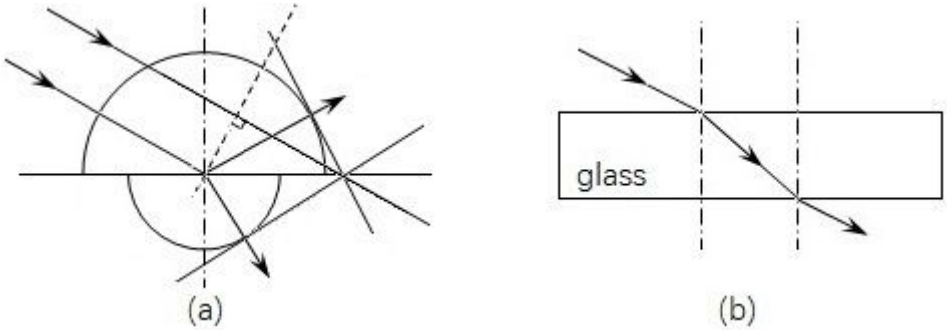

Figure 6

Huygens' principle, and refraction of light

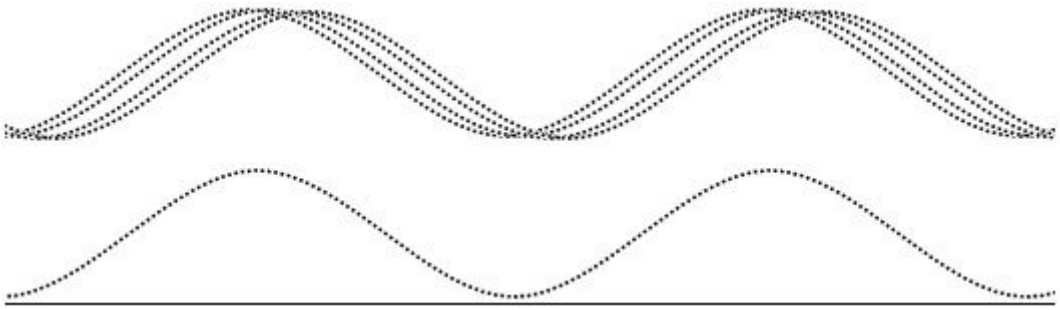

Figure 7

Light wave diagram

Figure 8

Double-slit test results with or without observation