

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

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

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Abstract: There is a huge difference between the result derived from the principle of light wave interference and the objective fact: (1) the farther the propagation distance is, the larger the light wave, so the larger the light spot should be. (2) Interference only occurs on the way from the double-slit device to the light target. If the distance is longer, there should be more interference points to make the pattern brighter. (3) The stripes along the road are continuously modified by interference, so the pattern obtained by moving the light target should change with the distance. (4) Because the principle is exactly the same, interference stripes should appear at the same time with a dispersive effect. (5) The products of light wave interference should be the new light waves that diffuse around the interference point as the center of the ball. They will not only trigger more interference, but also make the increment mode of light wave form an exponential infinite iterative cycle. This would create a singularity similar to Big Bang. (6) Dark stripes are generated not by sustainable interference but by one-off annihilation. (7) If the light source is replaced by another wave source, the corresponding results cannot be obtained by double-slit, Michelson–Morley and refraction tests. (8) Let alone a photon passing through two slits at once, since the stripes are much fainter than the source, it proves that light cannot pass through any untargeted slits. (9) It is impossible to generate anything from the interference point of size 0. (10) In the causality test, the light that has collapsed into particles should be reapplied to the double slit to verify whether it can produce stripes. (11) If "observation can tamper with results", then this phenomenon is also known through observation, which means that it has been tampered with. (12) As a feature unique to light but not to other forms of waves, the polarization absence interference condition is a major defect. (13) Refraction principle: Similar to driving, the light beam turns to the side that decelerates first. (14) The simplest fundamental principles of optics are reflection and focus, but they are followed by light rather than light waves. (15) The wavelet source principle applies only to water waves but not to light waves. (16) Because the direction of vibration and propagation is orthogonal, the s-wave cannot produce the Doppler effect. The absence of the Doppler effect in binary star systems orbiting each other is an objective astronomical phenomenon, which has been mistaken for hard evidence that the speed of light does not change. This phenomenon proves that the redshift must be a misunderstanding of other astronomical phenomena and that all celestial bodies cannot have direct evidence of the Doppler effect. The absorption spectrum of hydrogen is not radiation, and the redshift data are disputed. Redshift cannot turn light into circular magnetic lines. The gravity provided by dark matter will destroy the solar system. Hubble's law of the absence of redshift is wrong.

(17) Secondary light source, barely make light in transparent medium propagation principle can be justified, but not for opaque medium.

Keywords: James Webb, the double slit, interference, diffraction, Michelson, Morley, light waves, wave–particle duality, Huygens, polarization, superposition, causality, relativity, antimatter, quantum, observe the tamper with the result, Schrodinger’s cat, matter waves, the speed of light is conserved, redshift, regression, Hubble, singularity, the Big Bang, the expansion of the universe, dark matter, dark energy, Doppler, Kepler, Thomas Young, proliferation, standing wave, bandwidth, fiber optic communication, modulation effects.

1. The introduction

Conclusion: Newton's particle model, light wave theory and wave–particle duality [4][5] are all wrong.

"As much as I admire Thomas Young's name, I do not think he's foolproof. I am sorry to see that he can get it wrong and that his authority may sometimes even hinder the progress of science."

Regardless of the level of education, field or even religion they believe in, when faced with the phenomenon produced by the double-slit test, all human beings have reflexivity to conclude that light waves interfere to create stripes. Even the most intelligent, rational and inquisitive scientists are not immune. The results from this magical causality were so fascinating that scientists obsessed with it could not get over it, ignoring that the inexplicable causality was at the root of the problem. This is not so much a physical problem as a biological one. The causal logic of the interference of light waves to produce stripes seems to have become a barrier that shields all human intelligence and allows people to automatically bypass this blind spot. What binds stripes to light waves seems to be an obsession from DNA, and when that bond breaks, instead of trying to dig deeper, people wonder and reflect on themselves and come up with more magical ways to make it work. This makes any doubt seem like a cover for poor academic skills.

Physicists imagined electromagnetic waves long before Marconi invented radio technology. This abstract concept, which contains almost no objective physical properties, has been favored since it seems to conform to many physical phenomena. It is doubtful, but the lack of a better model has led people to embrace it without a second thought and to protect the original version from being updated by new technology to keep it in use today. The frontier disciplines built on this uninspiring foundation include relativity, quantum mechanics, the Big Bang, dark matter and dark energy. This is, of course, a bubble that, if punctured, could devastate the physical world. This is also a lament from Bohr! Unfortunately, Murphy's law makes Bohr's worries inevitable.

The reason why light is mistaken for electromagnetic waves has much to do with Thomas Young's double slit interference test, Michelson–Morley's test and Huygens'

refraction principle. These specious misconceptions are so pervasive that the word "light" is harder to pronounce than "light wave". The word "light" is becoming part of sociology rather than physics. Although the study of electromagnetic waves has made amazing progress since the invention of radio technology, physics is strangely insensitive to it. Electromagnetic waves are science in radio but have become a hollow name in physics.

Light and light waves obey different physical laws. Light obeys to geometric optics and rejects the universal laws of waves, whereas light waves obey the universal laws of waves and rejects geometric optics. It is not in any way far-fetched to lump them together. Modern physics endows light with magical skills. In addition to the selection property of wave-particle duality, wave-particle duality itself is the object of higher selection. In geometric optics, light automatically selects pure particle properties; in the causality test of the double-slit test, light automatically changes into wave-particle duality. Otherwise, light is just waves.

For various reasons, all three experiments proving that light is a wave are misunderstandings. This article tries to restore the truth. The experiment does not support the principle of constant speed of light. The principle of light wave interference is full of holes. Light is definitely not a wave!

2. The schematic diagrams

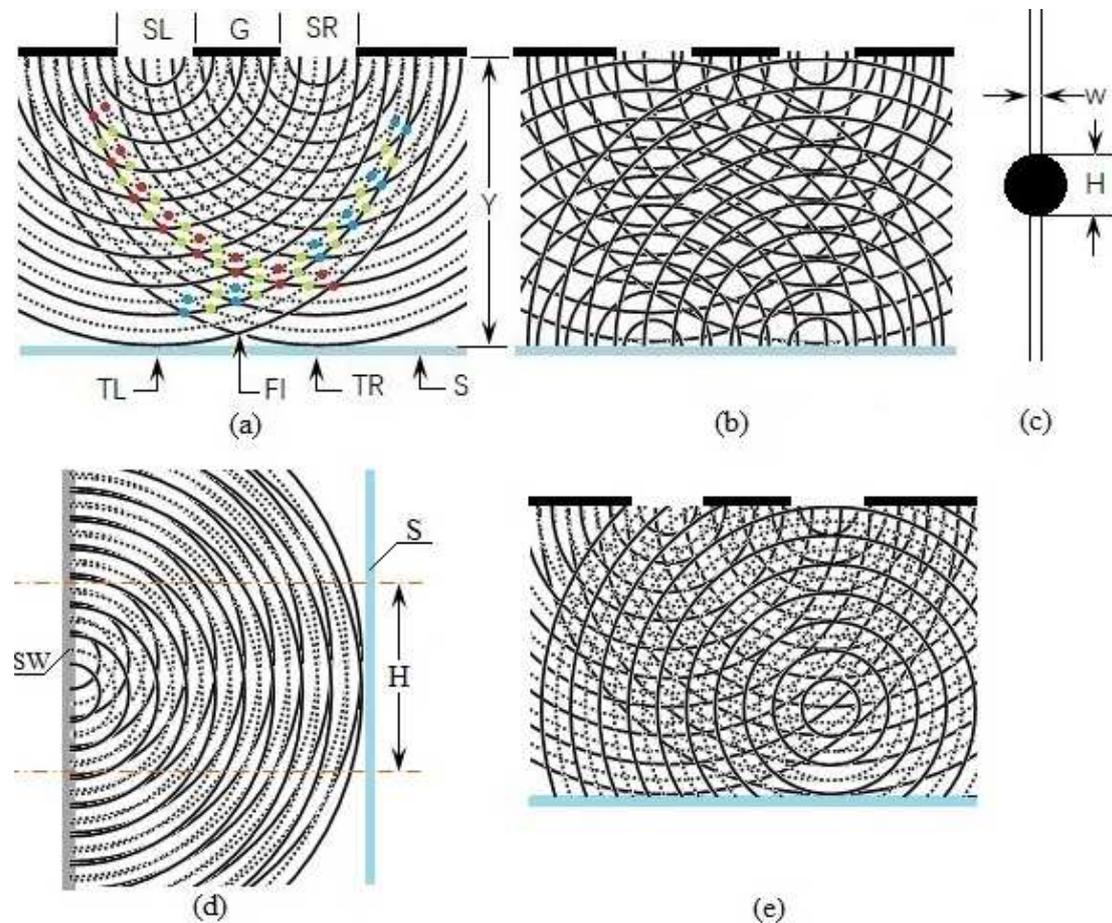


Fig. 1 (a) The principle of double slit interference. (b) Interference of reflected light waves. (c) Light source and slit. (d) Interference between two layers of light waves in the same slit. (e) Interference of light waves generated by interference.

Note:

- (1) SL: left slit, width S_w . SR: right slit, width S_w . G: partition between the two slits, width G_w . D: slits spacing. Y: the distance between the double slit device and the light target. S: light target. TL: left aiming point. TR: right aiming point. FI: the most forward interference point. SW: wall of slit.
- (2) Because of the Michelson–Morley test, Fig. (a) and (b) are drawn as semicircles rather than as fan-shaped arcs, as shown in Fig. 3(a).
- (3) The solid line represents the crest, and the dashed line represents the trough. They are a pair of typical features of the wave. Using only one arc to represent a wave is misleading.

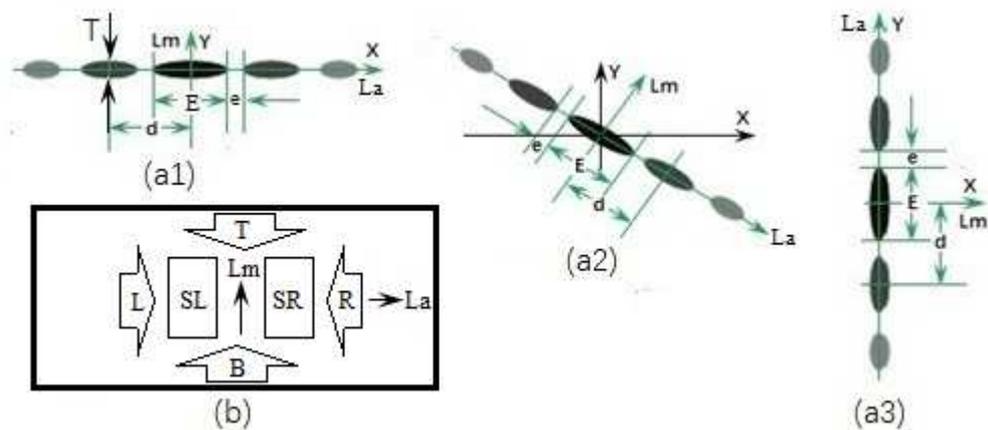


Fig. 2 Results of the double slit test with different postures

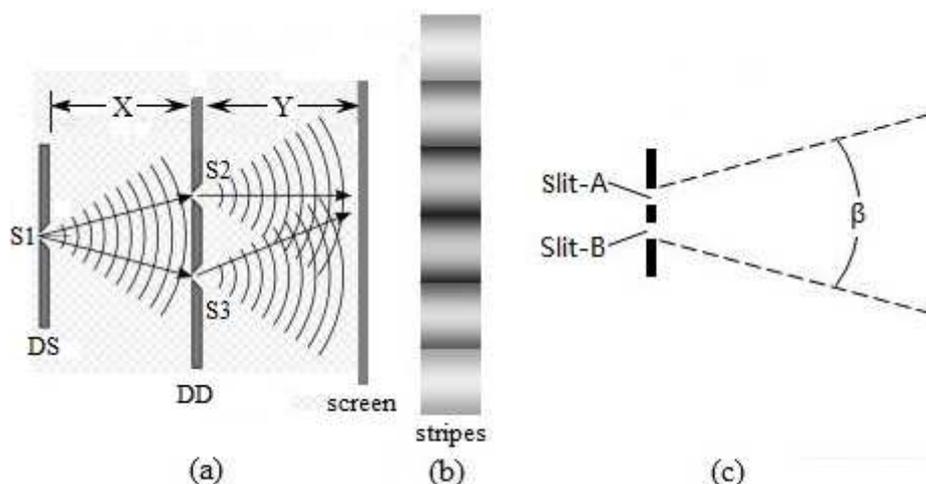


Fig. 3 (a) The principle of original light wave interference. (b) Stripes. (c) Scattering angle of stripes

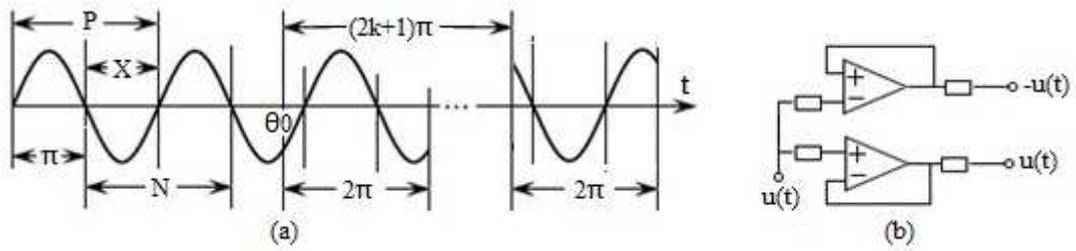


Fig. 4 (a) Matter and antimatter waves are conjoined. (b) Circuit for generating mutually inverted signals.

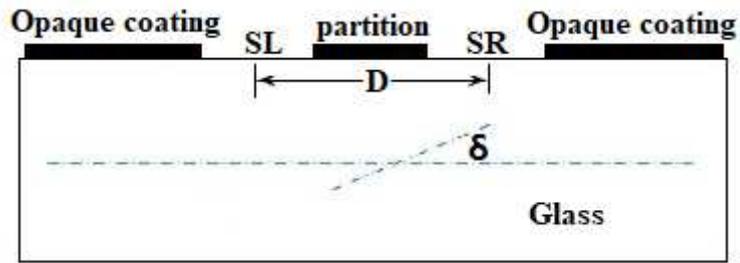


Fig. 5 Section of double slit device

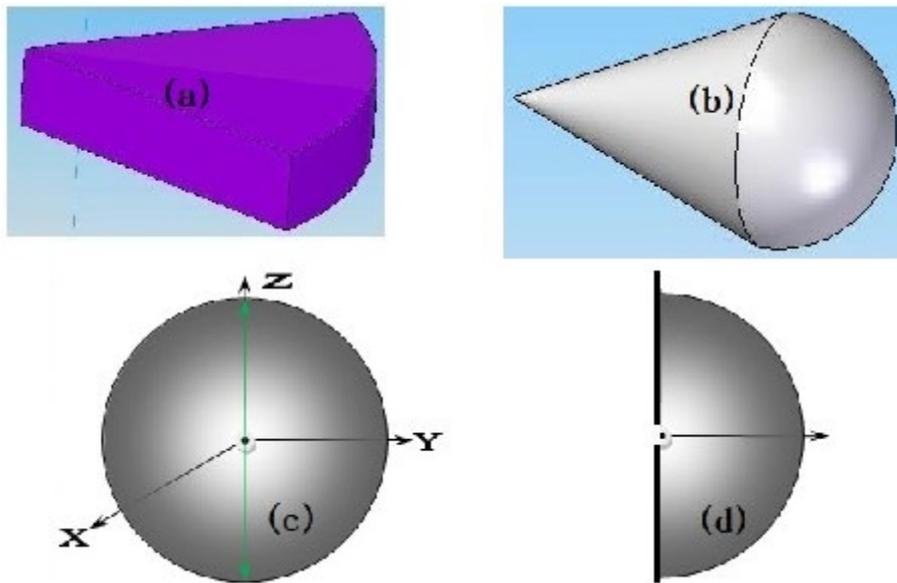


Fig. 6. (a) Fan beam, (b) conical solid angle beam, (c) spherical beam, (d) hemispherical beam

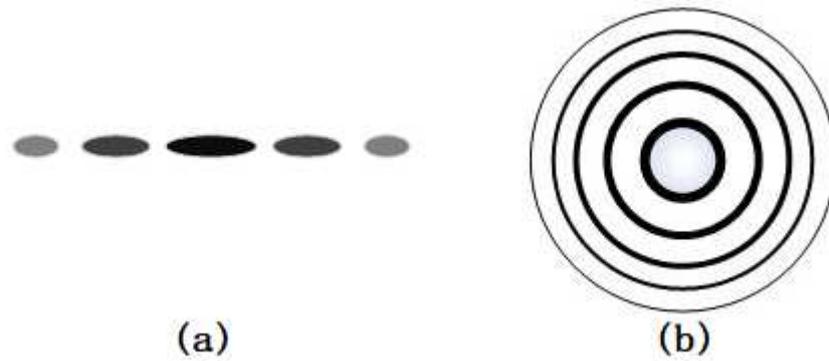


Fig. 7. (a) Results of the double-slit interference test, (b) results of the Michelson–Morley test

3. Analysis

3.1 Patterns cannot be generated by light waves

The wave–particle duality [4][5] principle is a necessary compromise, and it is only used in a few special cases. De Broglie's theory of matter waves, Bohr's idea that the physical world would collapse immediately if light were not a wave, so waves are the default form of light unless you have to.

If light is a wave, the signal source used in the same experiment may be either light or wave. However, experiments on double-slit interference, Michelson–Morley and refraction with any kind of wave, including electromagnetic waves, do not obtain the corresponding results with light as the signal source. This is enough to prove that the physical properties of light and waves are completely different. The above three tests do not prove that light is a wave. The results of the double-slit interference experiment only proved that Newton's particle model of light was incorrect, not that light was a wave.

Whether it is particle or wave or wave–particle duality, light must collapse into a dot at the moment it hits the target. The radius of any light wave is the distance between the device and the light target, and the farther the propagation distance is, the larger the size of the light wave. If it does not collapse, each wave must form a huge spot with a radius equal to the distance it travels. This means that any part of the light wave that touches anything, including a target, must collapse into particles. According to the Tyndall effect, the collapse of light waves can be observed if smoke is applied in front of a light target. Suffice it to say that light is never a wave.

3.2 Geometric models of beams generated by different tests cannot be unified

In both the double-slit interference and the Michelson–Morley test, a common conclusion is that the light source interferes to produce the corresponding test results.

Oddly enough, the shapes of the beams derived from the two interference tests are fundamentally different, with the Michelson–Morley beams being hemispherical and the double-slit test beams divided into classical and modern versions of the odd cone. The result of the modern version of the double-slit interference test is the stripes shown in Fig. 7(a), and the shape of the beam is shown in Fig. 6(a). The thickness of the fan is both the height of the light source and the height of the stripes. The classical version is not because the light source is a candle with omnidirectional divergence performance, the height of the stripes and the length of the slits and the light source to implement the principle of geometric optics. Their common defects: (1) the surface of the beam is cylindrical. In the normal plane of the propagation direction, only the width direction of the stripes produces an interference effect, while no interference occurs in other directions, including the height. (2) The fan-shaped angle of the wavelet source is unknown. (3) Neither Michelson–Morley nor double-slit interference can reasonably explain each other's experimental results.

The effect of the Michelson–Morley test is shown in Fig. 7(b), which is deceptively similar to the pattern of water waves. The common center in the figure is the source of waves, but it can never be the source of light waves. The ring, which should be spreading outwards, stands still. The adjustable ring can expand or contract.

Electromagnetic waves are the spheres in Fig. 6(c). In this case, the radius of the ball is the transmission distance Y (Fig. 1(a)), so the propagation mode of the spherical wave is the expansion of the sphere. For waves, peaks and troughs are an indispensable pair of physical properties. In time and space, the peaks and troughs are always one after the other, and the distance between them must be half a wavelength, which is also the difference of their radii. Regardless of how far it travels, that is, no matter how large the diameter of the ball is, the shell of the wave is at least half a wavelength thick.

The spherical center of the electromagnetic wave must be located at the emitting end, and its energy density is inversely proportional to the square of the radius. The mirror symmetry of its positive and negative half periods is shown as the same total energy, its quantum state is shown as the minimum energy, and its total energy is an integer multiple of this minimum. On a sphere, however, the electromagnetic wave is equipotent because the polarization characteristic causes an uneven energy distribution of the light wave, which destroys the mirror symmetry of the positive and negative half periods of the light wave.

The polarization characteristic proves that light waves are shear waves. During propagation, the energy distribution of the electromagnetic wave fluctuates radially. Therefore, electromagnetic waves are longitudinal waves. The statement that electromagnetic waves are s-waves because they are orthogonal in their transformation is not correct because no such transformation takes place in their propagation.

With all these differences, light is not an electromagnetic wave.

3.3 The principle of light wave interference is in serious opposition to

the basic principle of physics

The conclusion of the double slit interference test is that the interference of light waves produces stripes. The implication is that stripes are the work of something born out of interference. Because a light wave is a quantum that cannot be cut, the product of light wave interference cannot be a fragment but a whole light wave, and the new light wave cannot damage the parent light wave to any extent; otherwise, at least one of the two light waves involved in the interference will disappear as a whole. As shown in Fig. 3(a), the interfered light wave can remain intact and continue to interfere with other light waves, so light waves can create new light waves without paying any cost. The Gaussian flux theorem, conservation of mass and conservation of energy and other principles are all invalid here.

According to the principle of the double-slit interference test, as shown in Fig. 1(a), a light wave interferes only during the propagation from the double-slit device to the light target, indicating that the test result is gradually formed along the way. If the distance Y is changed, the result on the target should be redrawn by interference. Different Y corresponds to different patterns; that is, the stripes cannot remain unchanged all the time. However, experiments showed that Y changed only the size and brightness of the stripes, not the pattern. The smaller Y is, the smaller and brighter the pattern. The larger Y is, the larger and darker the pattern is. The flux of brightness is constant. This shows that the pattern is molded in the slits, the interference interval is a misunderstanding, and the light from the double-slit device to the light target only travels in straight lines and has nothing to do with the other light. The principle of light-wave interference is not supported.

When the double-slit device rotates δ (as shown in Fig. 5, ranging from $-\pi/8$ to $\pi/8$), the experimental results should change with the rotation angle according to the principle of interference, but the measured results are almost unchanged.

Characteristics of light waves: the farther the propagation distance is, the larger the spot. The actual result, however, is that tiny dots always appear on the target.

According to the principle that light waves from different slits must interfere with each other, as shown in Fig. 1(a), if each light wave can interfere with at most m light waves from the other slit, then the value m is a large natural number proportional to the spacing Y and D and the light intensity and inversely proportional to the size and wavelength of the light. Because quanta are indivisible, no matter how large m is, the new waves of light that streak the light target are whole individuals rather than fragments. The interference number of two light waves is

$$2m - 1 \quad (1)$$

In Fig. 1(a), the wavelet source (light source) is the center of the slit, and adjacent light waves are exactly one wavelength apart. Obviously, this special case of almost no light is almost impossible. Because photons are so small, it is normal to have n light waves per slit width and p light waves per wavelength in a haphazard arrangement. In addition, the schematic diagram shown in Fig. 1(a) is only a simple section diagram, and the light wave is definitely not a two-dimensional arc without thickness but a sphere. Along the direction of the stripe thickness, if the number of

layers of the light source is q , this multiplies the interference results to

$$[(2m - 1)np]^q \quad (2)$$

Formula (2) shows only the exponential increment of ancestral light waves, which seems strange enough. However, because ancestral light waves can travel in only one direction from the double-slit device to the light target, the number of interference points is greatly limited. As a point light source, the new light wave propagates to three-dimensional space with the interference point as the spherical center, which inevitably leads to the new light wave triggering more interference. Fig. 1(e) shows the value-added effect of a new interference point. If the effects of all the interference points of the same generation are considered, the number of interferences triggered will be countless. More exaggeratingly, these interferences can trigger more interference without the need for a light source to form a value-added closed loop, which is uncontrolled and infinitely value-added, when the iterative situation is fully considered. The scene resembles the singularity of the Big Bang. In reality, such a spectacle derived from the double-slit interference conclusion is impossible.

The trouble is that according to the principle of double-slit interference, slits are dispensable. In contrast, in the actual test, the slits are the determining factor.

In principle, the center of the slit is the wavelet source, which is in effect the light source. However, it is impossible to shine from the center of the slit, and in some experiments, the double-slit device operates in a vacuum. In addition, any light source can be easily observed, but experiments do not support this result.

The size of the interference point is 0. Anything that comes out of this is out of thin air.

Because the principle is exactly the same, two things will happen at the same time in the double-slit test: the interference effect produces stripes, and the dispersion effect distinguishes the colors of the stripes. However, in the double-slit experiment of a multifrequency light source, the expected dispersion effect does not appear, only the "interference" effect.

As shown in Fig. 3(c), the divergence angle β of stripes in the double-slit interference test is very small. This is not consistent with the Michelson–Morley test and the characteristics of the wavelet source.

The result of water wave interference is standing waves, which are stationary and cannot propagate. In the same way, the light waves generated by superposition interference must also be static, nonpropagating light waves, which only fluctuate at the permanent interference point and cannot travel to the light target. The interference light that can reach the light target must be superimposed on the light target. A stationary wave of light can only be understood as one that does not emit or radiate. Note that the interference points in the schematic are all on the way from the double-slit device to the light target. According to the principle of interference, they are permanent points that cannot be propagated with the light wave but only a set of coordinates indicating where the interference occurs, and the interference effect cannot reach the light target.

In Fig. 1(b), reflected light waves must produce interference. Objects can be seen because they reflect light, and light targets are not reflective objects. However, from

the test results, none of the interference effects come from reflected light waves.

The principle of reflection that the angle of reflection equals the angle of incidence applies only to light and not to light waves. The laws of specular reflection and focus are followed by light, not light waves. A wave has a special and universal motion law. Regardless of the wave hit, the s-wave always generates a wavelet source at the contact point, and the wavelet source generates waves with the same frequency (wavelength) and π phase difference to propagate or diffuse outward. So light and light waves are not the same thing!

3.4 The geometrical principle of light wave interference is not consistent with the result of the double-slit test

See Fig. 1(a). Since the light wave from any slit cannot reach the center of the TS and TR, the two aiming points on the light target should be a dark stripe. Instead of a dark stripe, it turns out to be the brightest part of the pattern.

As the elements are too dense to be plotted, a large number of elements of the interference principle are forced to be deleted, so Fig. 1(a) is only a brief schematic diagram. In contrast to the idealized order shown in the diagram, light waves in the real scene are scattered and disordered. When the pattern is bright enough, the light waves are dense enough, which means that the supposed dark stripes will be covered by other light waves in a random arrangement, and the principle of forming dark stripes outside the center makes no sense. Therefore, as shown in Fig. 7(a), it is incorrect to have multiple dark stripes arranged regularly.

3.5 Paradoxical principles of interference

Interference and noninterference are mutually exclusive conditions of equal importance. According to the principle of quantum indivisibility, quantum and its basic physical properties can only play a role in the whole way rather than part, so only all interference conditions work at the same time can the interference be triggered, that is, the interference process must be quantum. Otherwise, the principle of noninterference cannot be justified. According to the current version of the interference principle, it is considered noninterference if it is not the superposition interference of the crest crest and the destructive interference of the crest trough. The validity of this set of conditions is debatable, both mathematically and physically. In an infinite number of points within a wavelength, only a few special points can cause interference to lack legitimacy. Different from the original principle in Fig. 3(a), which only draws the crest without the trough, the complete principle of interference is shown in Fig. 1(a), where the solid line is the crest and the dotted line is the trough. If the noninterference condition can be interpreted as a limitation of quantum integrity, then the interference condition must also be restricted by this limitation. Because of this, the two waves involved in interference are, respectively A and B, the following terms should be added to the principle of interference: (1) To ensure that all points

simultaneously meet the interference conditions, the conditions triggering the superposition interference caused by the same characteristics should include: when peak A aligns with peak B, trough A aligns with trough B; The conditions that trigger the destructive interference caused by the different features should include: when peak A aligns with trough B, trough A aligns with peak B. (2) Simultaneous rather than sequentially satisfied conditions lead to interference. (3) When the condition is satisfied, interference occurs in a sudden rather than gradual manner.

Although photons look very different from light waves because they are much smaller than their wavelength, this does not prevent each photon from having all the characteristics of light waves; the most basic physical characteristics of light waves are peaks and troughs. Because the size of the intersection is zero, the duration of the interference approaches zero indefinitely. Therefore, the simultaneous alignment of the crest and trough with another wave is a minimum condition for triggering interference. However, if the light waves involved in interference come from different directions, due to the time sequence between the peak and trough, the interference has to scan the two light waves gradually from one point; that is, the way that the peak and trough meet the interference conditions is not simultaneous but sequential. This breaks the quantum principle of the interference process, so neither the double-slit nor the Michelson–Morley result is due to light wave interference.

Since the speed of light is the same, the latter of two waves in the same direction cannot catch up with the former, nor can interference be triggered. The light waves in the same direction that completely meet the interference conditions form an ordinary beam, and the photons in the beam coexist without interference.

Finally, no matter when, no matter where, no matter whether the frequency is different, no matter what the phase is, no matter whether the direction is consistent, interference between electromagnetic waves can occur unconditionally. The result of interference between electromagnetic waves is composed of vectors of all the factors, which affect only the intersection point, and the waveform distorted into any shape by interference is acceptable.

In summary, the current light wave interference condition is rejected by its noninterference condition.

3.6 Antimatter ghosts and the Death Line

Without loss of generality, the mathematical expression for waves is:

$$u1(t)=Asin(2\pi ft+\theta0) \quad (3)$$

where A is the amplitude, f is the frequency, t is the time, and $\theta0$ is the initial phase. If the phase is shifted by an odd multiple of π , then the result is reversed:

$$u2(t)=Asin(2\pi ft+\theta0\pm(2k+1)\pi)=-u1(t) \quad (4)$$

where k is any integer.

See Fig. 4(a) and formulas (3) and (4). Since $u1(t)+u2(t)=0$, $u1(t)$ and $u2(t)$ are a pair of mathematically opposite numbers and can annihilate each other physically. Fig. 4(b) is a circuit that generates signals of opposite polarity. As shown in Fig. 4(a), if P is a positive polarity wave, N is a negative polarity wave, and the public area X is both the

negative half period of the positive polarity wave and the positive half period of the negative polarity wave. The polarity of the wave is determined by the reference point and fluctuates periodically between positive and negative polarity over time. Electromagnetic waves are man-made signals. The effect of the positive and negative electromagnetic waves in the conductor canceling each other is easily understood as the signal being short-circuited. Since mutual annihilation is the most typical characteristic of matter and antimatter and light waves are recognized as matter by physics, negative light waves are antimatter that can annihilate positive light. According to Fig. 4(a), matter and antimatter are conjoined, their roles are periodically swapped, and the antimatter ghost will arrive unexpectedly.

Waves are neither matter nor energy; they are just a way of moving energy. There is a vibration elimination instrument, the principle of which is to reverse the vibration signal and cancel the original vibration. Obviously, nothing is lost in this process, and only energy is lost. Since energy is independent of phase, the two strands of energy with a phase difference of π act in opposite directions and can cancel each other out without negative energy (inverse energy).

According to the principle of the double slit interference test, the dark fringe is formed by the cancelling interference triggered by the peak and trough of one light wave aligning with the trough and peak of another light wave, respectively. According to the trigonometric description, this is annihilation rather than interference triggered by a pair of mathematically negating numbers. The difference between interference and annihilation is that the light waves after interference are lossless, they are still alive and can continue to propagate and interfere with each other. The light waves that annihilate or cancel out are permanently dead and completely gone, and they never shine again. That is, destructive interference is a mutually annihilating line of death. Because superposition and destructive interference occur alternately, once the interference is triggered, all light waves are wiped out by annihilation, leaving only darkness.

3.7 Rotation test of the double-slit device

As shown in Fig. 2, the arrangement direction of the stripes is L_a ; the middle line of the double slit is L_m . L_a rotates synchronously with the double-slit device and is always perpendicular to L_m . This suggests that it is the direction of the slit rather than the interference behind it that determines the direction of the stripe alignment.

3.8 The role of ignoring the polarization direction in interference conditions is unacceptable

Light cannot be a wave on the basis that only light has the characteristic of polarization and other types of waves do not.

Water waves vibrate in one dimension, only vertically toward the center of the earth. The vibration direction of light is located on the normal plane S of its propagation

direction. Light is a shear wave, and the specific vibration direction of each light wave on S is its polarization direction. Note that whether the light is a wave does not affect the conclusion of the question in question. If a light beam contains all polarization directions, such as sunlight, there is no preferred polarization direction. The effect on interference is equivalent to upgrading the phase condition from a one-dimensional ray without considering the polarization factor to a two-dimensional plane S while considering the polarization factor. It is not only different directions that do not trigger interference but also the same polarization direction that can trigger interference, which will lead to extremely harsh interference conditions. If the polarization direction is inconsistent, even if all other conditions are met, interference of light waves cannot occur because the vector composition destroys the quantum characteristics. Stereoscopic films are a typical application where different polarization directions do not trigger light wave interference. The effect of the polarization direction should not be ignored by interference conditions.

3.9 The original double-slit test is not easy to reproduce, as the "light wave" only passes through the targeted slit

Note that there is a problem with the classical diffraction principle that a dynamic wave cannot produce a static wave pattern. After leaving the device, the light propagates only in straight lines without any wave characteristics. In this paper, only diffraction results are used, not the principle.

The principle of the original version of the double-slit test is shown in Fig. 3(a), and the result is shown in Fig. 3(b), which is difficult to reproduce. This version of the device does not have a glass substrate, and the main material is a certain amount of light transmittance and reflective properties of paper, the edge of the inevitable strong diffraction fiber residue. When the slit is wide enough, the vertex of the fan beam is the source and obeys geometric optics. As the slit becomes narrower, the vertex of the fan-shaped beam suddenly switches to the center of the slit, and the divergence angle β increases simultaneously, resulting in diffraction [18][19][20]. The traditional theory misunderstands the slit as a wavelet source, but the wavelet source is a light source, and the light source can only be the product of the transition of the energy level of the electron. The slit cannot emit light out of thin air; it only changes the way the light moves. Since all slits produce diffraction, the diffraction of slit S1 enables slits S2 and S3, which are too far apart, to produce diffraction that forms double slit stripes.

The section diagram of the modern version of the double-slit device is shown in Fig. 5, and the test results are shown in Fig. 7(a). The coating and partition are vacuum aluminized with poor light transmittance. They have smooth edges and are attached to a glass substrate with strong refractive properties. The equivalent effect is to place a thin line in the center of a single slit. The width S_w of slit SR and SL is roughly the same as the width G_w of partition G (thin line) between the slits. They are made very narrow so that SR, SL and G can produce diffraction separately. The stripes are synthesized from the diffraction effects of these three optical elements.

According to interferometric principles Fig. 1(a) and Fig. 3(a), light waves must pass through all slits, whether aimed or not. However, experiments showed that the brightness of the stripes was too low, proving that only a small amount of light aimed successfully passed through the slit, while the vast majority of light not aimed at any slit was reflected or absorbed. This means that light has no wave, and it makes it impossible for photons to pass through both slits at the same time.

3.10 *Principle of refraction and propagation distance of light*

The basic formula of quantum:

$$E=Nhf \quad (5)$$

where E is the quantum energy, N is a natural number, h is Planck's constant, and f is the frequency.

Note: Planck constant h is a universal constant. It does not change for any substance. The frequency f is a special constant. The specific constants for different kinds of matter are unique, and each quantum has a different f . N is the number of components of quantum energy, which is also the number of quanta.

According to Huygens' principle, the refractive index is the ratio of wavelengths in different media that are refracted when a light wave passes through an interface. The principle is debatable. A simple explanation is that, like driving a car, a beam of light naturally turns to the side that slows down first.

According to Formula (5), the energy of a quantum is determined only by the frequency [1][2][3]. In contrast, the energy of an electromagnetic wave is determined by its amplitude and has nothing to do with frequency or wavelength. So light is not a wave.

Because quantum is indivisible, it can only disappear in whole, not in parts. The photon is slowed by passing the obstacle, and the photon is destroyed by colliding head-on with the obstacle. Therefore, the higher the density of the medium or the farther it travels, the greater the probability that a photon will hit an obstacle. If the photons travel a sufficiently long distance, they will all be destroyed by the obstacle as a whole. Therefore, the denser the medium is, the slower the speed of light and the shorter the distance it travels.

Two defects of the secondary light source are as follows: (1) why does the light source not diffuse around the point light source but keeps the direction of light source propagation unchanged? (2) According to the same principle, why can light travel in transparent medium but not in opaque medium?

3.11 *Light waves and Communication*

According to the modulation effect of the communication principle [15][16][17], if the angular frequencies of the light source and the signal are ω_c and ω_s , respectively, the modulation result is the signal with angular frequencies of $\omega_c+\omega_s$ and $\omega_c-\omega_s$, respectively. This means that modulation turns the light source into two conjugate varieties centered on its frequency. This clearly violates quantum fundamentals and in

fact does not happen in fiber-optic communication. Moreover, the spectrum of light is discrete, and not every spectrum has a corresponding photon.

Since the diameter of a photon is much smaller than its wavelength, the time occupied by a photon in the whole cycle is negligible, which indicates that the photon is only an element of the light wave, its physical significance is only equivalent to a sampling of the light wave, and the photon is more like a fragment of the light wave. In other words, a series of light wave fragments with different phases are linked together to form a complete light wave, which is obviously absurd.

Although frequency is the basic physical parameter of a wave, according to the Fourier transform principle [12][13][14], any wave that exists only in finite space-time cannot have only one frequency but must be a frequency band. This conclusion has been confirmed by radiocommunication technology [10][11] and is regarded as the basic principle that has to be followed. Otherwise, if electromagnetic waves had zero bandwidth, as physics says, radio communication would require no technology at all.

3.12 *Suspicion of the Michelson–Morley test*

The results of the Michelson–Morley test [21] yield three very important conclusions. (1) Light is a wave. (2) The speed of light is the same in all directions. (3) The aether does not exist.

Since there is already a great deal of evidence that light is not a wave, it is necessary to clarify the following points of the experiment to dispel doubts. (1) Pinhole diffraction, which will directly produce exactly the same results as the test. (2) 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 of objects such as glasses and the bottom of glass bottles can produce optical patterns similar to the results of this experiment. So optical imaging devices are a big suspect. (3) Remove one of the two optical paths and perform the single optical path test without interference. (4) Open research on the opaque intermediate process to find other causes.

3.13 *Questions about relativity*

The cornerstone of relativity is that the speed of light is constant and independent of the frame of reference. The evidence for this conclusion is the result of the Michelson–Morley experiment and the fact that celestial bodies do not produce the Doppler effect.

A way to check if the speed of light is constant: the sun is near the horizon in the morning and evening, and the Earth rotates at a speed of approximately 466 m/s toward or away from the sun, respectively. Accurate measurements of the speed of light at these two specific times can verify this conclusion. Note that the Earth's motion around the sun cannot be ignored.

Because of its slow speed and low number of tests, the data from the cesium atomic

clock [24] onboard the aircraft are far less reliable than those from GPS. Because the error data of GPS are completely different from the results calculated according to relativity, the test data of cesium atomic clock [24] carried by aircraft with a high coincidence are very suspicious. If these data are true, they must have missed some correction in comparison to the GPS data, so that they not only fail to support relativity but also contradict it. The error of GPS can be interpreted as a very flat ellipse due to its low orbit, so the acceleration of the satellite changes more dramatically. The core of a cesium atomic clock is a quartz crystal oscillator synchronized by the transition frequency of the cesium atom. Regardless of the transition of cesium atoms or the oscillation of crystals, the rapidly changing acceleration inevitably affects the frequency, which is the main cause of GPS error. Other factors (such as temperature, atmospheric pressure, etc.) can not be ignored. Sadly, relativity does not work as it should.

3.14 *The question of Hubble's law*

Doppler's principle states that the wavelength of a wave is compressed as it moves toward the observer, a phenomenon called forward. Instead, the wavelength is stretched as the source moves away from the observer, a phenomenon known as regression. The velocities used in this principle are all vectors, but it ignores a potentially fatal problem. The problem is the vector relationship between the direction of vibration and the direction of propagation. Because sound is a longitudinal wave, it vibrates in the same direction as it travels, and the forward or backward movement of the source compresses or stretches the sound wave, which causes its wavelength to shorten or lengthen. However, light waves are shear waves, and their vibration direction is orthogonal to the direction of propagation. There is no mathematical basis for the stretching or compression of the propagation direction to cause the wavelength to become longer or shorter, and the basis for the Doppler effect of light waves is destroyed. That is, light waves do not produce the Doppler effect!

In the vast universe, single star systems such as our solar system are not the norm. More common are binary or multistar systems. Due to the large number, different attitude, wide distribution, short period and other factors, binary star systems orbiting each other are the best samples to observe the Doppler effect. Especially when the stars are positioned right at the end of their orbits from Earth's perspective, they move as fast as they can toward and away from Earth. According to the Doppler principle, the wavelength of the star light wave should change to the longest and shortest, respectively, at this time, but the objective measured result is no change, which indicates that the Doppler effect of the binary star system has not been observed.

It has been proven above that light is not a wave that can produce the Doppler effect, and this section also proves that shear waves cannot produce the Doppler effect. In addition, as a common astronomical phenomenon, the observation result of a binary star system makes it impossible for celestial bodies to produce the Doppler effect. Redshift data are a distortion of the reddening of distant objects. In fact, people have only observed objects that become redder the farther they go without any direct

evidence of the Doppler effect. The reason why distant objects become redder is not redshift but redding (blue decay). The sky is blue because light with shorter wavelengths is more easily refracted by the atmosphere. The reason the sun gets redder the closer it is to the horizon is that light travels the longest through the atmosphere, and the shorter the wavelength, the more it loses. Water molecules in the atmosphere, spherical surface of the atmosphere and radial density gradient distribution are more harmful to the shortwavelength component of the spectrum. Because there is no absolute vacuum, the farther the light travels, the more gas accumulates along its path and the greater the spectrum is disturbed. Because gas molecules are small enough, longer wavelengths of light are easier to bypass, and shorter wavelengths cause more damage.

The object of redshift should be the radiation spectrum of the celestial body, not the absorption spectrum of hydrogen. Absorption can never produce Doppler effect. If viewed mathematically, the absorption spectrum can only produce an inverse redshift. Suppose: radiation is $E(\omega)$, absorption is $A(\omega)$, and the result is $S(\omega)$; then,

$$S(\omega) = E(\omega) - A(\omega) \quad (6)$$

The redshift that Hubble's law focuses on is the characteristic data of the hydrogen absorption spectrum, which may not meet the lower limit of Nyquist's law because there are too few sample points. This is because all spectral lines should obey the same attenuation function. Although the only data used is the hydrogen absorption spectrum, other lines are important to ensure the validity of the data so that excessive distortions can be filtered out.

A magnetic line is a closed loop that connects the radiating end to the receiving end, and a redshift cannot turn light into a magnetic line.

The important assumption of relativity and Lorentz transformation [22][23] is that the speed of light is constant and independent of the reference frame. However, regardless of whether the Lorentz transform is used, the standard spectrum cannot be accurately matched with the redshift data after being transformed by the same law. Unfortunately, if the speed of light is constant, the Doppler effect is impossible, and Hubble's law [6][7] does not agree with relativity.

The derivative conclusion of Hubble's law: the expansion of the universe, the big Bang, dark matter and dark energy. However, dark matter is incompatible with Kepler's planetary laws [8][9]. Not only has the law stood up to every object in the solar system and proved to be true, but it has also been used to find Uranus, Neptune and Pluto in the absence of dark matter and dark energy. If visible matter provides only 4% gravity, dark matter has to provide a huge proportion. If the direction of the dark matter's gravity does not interfere with the sun's motion, then because the moon orbits the planet and the planet orbits the sun, gravity must affect the motion of the planets and moons. This would have a huge dampening effect on the normal functioning of moons and planets, and the entire workings of our solar system would be upended by dark matter.

Because of the short distance and the use of the law of cosines, the results obtained by the triangulation parallax method are more accurate and reliable. According to these data, contrary to the expansion of the universe, the nearest galaxies to the Milky

Way, such as Canis Major, Large Magellan, Small Magellan and Andromeda, are moving closer together.

3.15 "Observe tamper results"

In experiments on the causality of double-slit interference, a puzzling phenomenon has been observed: before the introduction of observation, the result of the experiment is the stripes of light and dark produced by interfering light waves. After introducing observations, the test results are patterns formed by particles. From this, Einstein proposed the principle of wave-particle duality. According to this principle, light has wave-particle duality, and light is a superposition of both particles and waves. Light is waves without observation, and observation collapses superpositions into particles. However, there is a tangled logic lurking here. Why do superpositions without observation only look like waves? Why does collapse always turn out to be a particle? Regardless of whether observation is introduced, the test results in both cases are obtained by observation, and the test results without observation cannot be obtained without observation. Does this mean that the results of all tests have been tampered with by observation? Reading is also observing. Has this article been tampered with as you browse? If observation has a tampering function, can any information obtained from observation be trusted? The wave-particle duality principle cannot solve the problem of whether it is tampered or not, but only the tampered version.

The collapse mode of superposition states is not random but directional selection, which inevitably raises questions about wave-particle duality and Schrodinger's cat principle. An effective method to verify this principle is to project the light that has collapsed into particles onto another double-slit device and observe the experimental results. When the result is "interference" stripes, it shows that (1) the principle of wave-particle duality is not correct, the pattern without "interference" is not because the light collapses into particles, and the stripes are not the result of "light wave interference". (2) The introduced observations cause unknown disturbances to the test.

As shown in Fig. 2 (b), "observation tampering with test results" occurs when the installation position and posture of the observation device are "S" and "L". However, the test is not complete. For comparison, the test results of the installation position and posture, such as "T" and "B", must also be obtained. Observations of different positions and attitudes do not distort the results.

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 passing through the slit interfere with each other and produce streaks. The mask would have countless interference streaks due to its numerous slits, making it impossible for the photolithography machine to reduce the pattern clearly onto the wafer. This conclusion is obviously undesirable. Streaks are not a general rule of slits but the result of coincidental conditions. Instead of "letting God roll the dice," the lithography machine successfully modifies the script using the wavelength of the light source so that the conditions that produce the stripes are suppressed.

4. Instructions

Although not a wave, a quantum still has physical parameters such as wavelength, frequency and period.

Just as an electric current is a directional flow of charge, light is a flow of photons.

Since the rest mass of photons is zero, they are transparent to each other, and any photon does not prevent other photons from using the space they have occupied. There is no limit to the amount of overlap between the spaces occupied by different photons, and quantum theory also holds that multiple photons can occupy the same space at the same time. As a result, intersecting photons can pass harmlessly through each other, neither exchanging energy nor changing the direction of any of the photons. This rule applies only to photons with zero rest mass on both sides; otherwise, when contact occurs, an objective object with a rest mass can change the direction of the photon's motion or make it disappear.

References

- 【1】 Steven Weinberg, Lectures on Quantum Mechanics, Cambridge University Press.
- 【2】 James Binney and David Skinner, The Physics of Quantum Mechanics.
- 【3】 Leslie E. Ballentine, Quantum Mechanics - A Modern Development, World Scientific Publishing Company.
- 【4】 P. Mittelstaedt, A. Prieur and R. Schieder, Unsharp particle–wave duality in a photon split-beam experiment, Foundations of Physics, 17, 891-903 (1987).
- 【5】 Greene, Brian. The Elegant Universe: Superstrings, Hidden Dimensions, and the Quest for the Ultimate Theory. New York: W.W.Norton. 1999: pp.97–109.
- 【6】 Hubble, Edwin, "A Relation between Distance and Radial Velocity among Extra-Galactic Nebulae" (1929) Proceedings of the National Academy of Sciences of the United States of America, Volume 15, Issue 3, pp. 168-173
- 【7】 Move over, Hubble: Discovery of expanding cosmos assigned to little-known Belgian astronomer-priest | Science | AAAS
- 【8】 Johannes Kepler, Harmony in the World, Peking University Press, 2011
- 【9】 David Yang, Lectures on General Astronomy, August 1999
- 【10】 Fan Changxin, Cao Lina, Principle of Communication (7th Edition), National Defense Industry Press, September 2013
- 【11】 Jiongban-Zhou, Communication Principles (3rd Edition), Beijing University of Posts and Telecommunications Press, August 1, 2008
- 【12】 C. C. Lin & L. A. Segel, Mathematics Applied to Deterministic Problems in the Natural Sciences, Macmillan Inc., New York. Beijing, Science Press, 1974
- 【13】 The Scientist and Engineer's Guide to Digital Signal Processing. 1997-09-09
- 【14】 Li Wenke, The Magic Matrix Season 2, Harbin Engineering University, 2014
- 【15】 Zhang Baofu. Optical Fiber Communication: Xidian University Press, 2009-09
- 【16】 Zhang Hongbin, Qiu Kun, Zhou Dong. Wavelength Division Multiplexing

- Optical Fiber Communication Technology: 2000-04, Journal of University of Electronic Science and Technology of China
- 【17】 Liu Xilian, Peng Tianxiang. Optics and Soliton Communication: Physics and Engineering, 2002-05
- 【18】 Xie Jianing, Zhao Jianlin, Chen Weicheng et al. Computer simulation of Fraunhofer diffraction. CNKI;WanFang, 2004
- 【19】 Dai Bing, He Anzhi, Zhu Zhaoqing. Fraunhofer diffraction studies of a class of aperture associated with ellipses and rectangles. CNKI, 2003
- 【20】 Lu-zhong CAI, Self-consistency of Fresnel diffraction and Fraunhofer diffraction formulas for free propagation problems. University Physics, 2002
- 【21】 Qingzhen Li. The Great Dictionary of Scientific and Technological Methods: Science Press, 1999
- 【22】 Zhang Yuanzhong, Encyclopedia of China vol. 74 (Physics), Encyclopedia of China Publishing House, 2009-07:342
- 【23】 Zhao Kaihua, Luo Weiyin, New Concept Physics Course -- Mechanics: Higher Education Press, 2004
- 【24】 Chen JIANG, Li Detian, Wang Ji, et al. Current situation and trend of cesium atomic clock for navigation [J]. International Space, 2016(4):20-24.

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