

# Physical Propagation of Consciousness: On Essence of Universal Gravitation and Coulomb Force

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## ABSTRACT

Two mutually complementary sets can be described by two mutually perpendicular vectors. Because the two vectors are perpendicular to each other on the complex plane, this article introduces the imaginary unit  $j$ , and then objectively describes the relationship between the complementary sets with equations. The author assumes that a life's flash forms a spherical divergent field; the center of the field is the material world perceived by the life; the field is space generated by the propagation of flash. So, this article reveals the origin of space. When the propagation mode of flash is applied to mass, the formula for universal gravitation is derived, which confirms the rationality of the above hypothesis. When the propagation mode of flash is applied to static electricity, Coulomb's law is derived, which also confirms the hypothesis. Therefore, universal gravitation and Coulomb force are essentially manifestations of flash propagation.

**Keywords:** Flash; Propagation; Field; Field Strength; Universal Gravitation; Coulomb Force; Telepathy

## Introduction

**Spiritual Function: Mathematical Expression and Application of Spiritual Activity's Process** explains the mechanism by which a life perceives matter. This article also takes spiritual activities as the research object, and further discusses how a life's spiritual activity affects the material world. Spiritual activities include desire, impulse, thinking, perception, fantasy, judgment, decision, emotion, etc. Some of these activities are deep psychological activities; some are to perceive the external environment and stimuli; while others are to reflect and summarize the rational content of things through language. "For broader and more general fields, the connections between them need to be enhanced and mastered by humans. Not just the natural rules themselves need to be understood" (Yi, et al. [1]). This article will explore the question from the perspectives of mathematics and physics.

## Life, Universe and Imaginary Unit

We assume that the universe is a set and use  $U$  to represent the set. The material world perceived by a person (life  $A$ ) is a subset of  $U$ , and we use  $u_A$  to represent the subset. Except for life  $A$ 's material world, the rest of universe is also a subset, which is represented by  $\neg u_A$ . From the above assumptions, it can be inferred that  $u_A$  and  $\neg u_A$  are mutually complementary sets. Now we assume that vector  $\overline{OA}$  in the complex plane denotes  $u_A$ ; vector  $\overline{\neg OA}$  denotes  $\neg u_A$ . In subset  $u_A$ , there are no elements of subset  $\neg u_A$ . In subset  $\neg u_A$ , there are also no elements of subset  $u_A$ . So  $\overline{OA}$  and  $\overline{\neg OA}$  are perpendicular to each other, i.e.,  $\overline{OA} \perp \overline{\neg OA}$ . If object  $B$  belongs to  $\neg u_A$ , we can represent object  $B$  using  $j.B$ , where  $j$  is the imaginary unit. We use  $j$  to show the vertical relationship between  $\overline{OA}$  and  $\overline{\neg OA}$ . A life is a single world, and each single world contains a spiritual world and a material world (Tian M, [2]). Suppose that  $u_s$  represents the spiritual world

of life A, and  $u_s$  is represented by vector  $\overline{OS}$  in the complex plane. Cartesian theory says "Human beings are composed of two independent entities, and the relationship between mind and body is similar to that between crew and ship" (Copleston F, [3]). In this article, the material world of life A is not just his body. All objective things, which he thinks about or experiences, are called his material world. We assume that life A sees wildflowers during an outing;  $u_A(t_1)$  denotes the wildflowers and their scene that life A sees at time  $t_1$ .

Of course, Life A's body is included in the scene.  $u_A(t_1)$  is the material world perceived by life A, so the following equation holds at time  $t_1$ :

$$u_A = u_A(t_1) \tag{1}$$

There are no elements of the spiritual world  $u_s$  in the material world  $u_A$ , and there are no elements of  $u_A$  in  $u_s$ . So  $\overline{OA}$  and  $\overline{OS}$  are perpendicular to each other, i.e.,  $\overline{OA} \perp \overline{OS}$ . We use the form

of  $j.S$  to represent spiritual activity, where  $j$  is an imaginary unit. There are two reasons for this: First,  $j$  can show the vertical relationship between  $\overline{OA}$  and  $\overline{OS}$ ; Second, the spiritual world is also an element in the universe, i.e.,  $u_s \in -u_A$ . Therefore, the relationship between  $\overline{OA}$ ,  $\overline{-OA}$  and  $\overline{OS}$  is shown in (Figure 1). We divide a person's 1-second thinking or feeling into  $n$  equal parts, each of which is referred to as "flash". Simply put, flash is a sudden thought, as fast and short as lightning. If the spiritual activity is measured in imaginary unit ( $j$ ), each flash can be represented as  $j\omega_0$ , where  $\omega_0$  is a coefficient (Tian M, [4]).  $j\omega_0$  at time  $t_1$  acts on the object  $u_A(t_1)$ . Result of the perceptive behavior at time  $t_1$ , i.e., utility produced by the spiritual activity, is  $u_A(t_1).j\omega_0$ . Then  $u_A(t_1).j\omega_0$  not only has characteristic of the behavioral subject ( $j\omega_0$ ), but also has characteristic of the behavioral object  $u_A(t_1)$ . Because the spiritual world is an element in U, then life A's spiritual activity also belongs to U. So, there is  $u_A(t_1).j\omega_0 \in -u_A$  at time  $t_1$ .

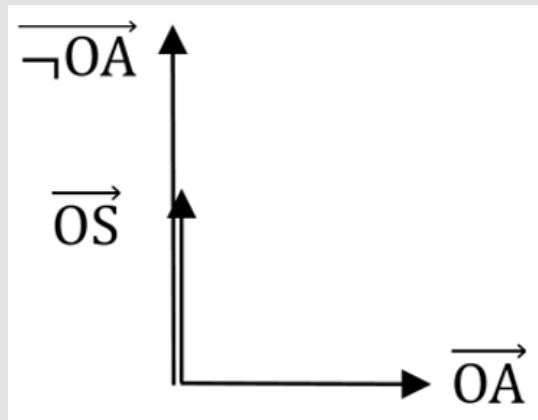


Figure 1:  $\overline{OA}$ ,  $\overline{-OA}$  and  $\overline{OS}$ .

### Propagation Mode of Flash

We define the area where  $u_A(t_1).j\omega_0$  propagates as field and denote this field as  $\Phi_A(t_1)$ . Because  $\Phi_A(t_1)$  is a field established in  $-u_A$ , we assume that  $u_A(t_1).j\omega_0$  plays a role in  $-u_A$  with  $u_A(t_1)$  as the center. Then No.1 life's material world  $u_1(t_1)$ , No.2 life's material world  $u_2(t_1)$ ... are all in field  $\Phi_A(t_1)$ . Use an analogy to illustrate: The universe is like a human body; consciousness is like the heart of the person; flash is like the beating of the heart; so the utility of flash is like the blood flowing throughout the body, which includes both rapid

flow of blood in the aorta and slow movement of blood in the capillaries.

Space is a real existence in the universe. Apart from space, there is no other existence that conforms to the properties of the field. So we believe that space is  $\Phi_A(t_1)$ , i.e., flash plays a role in creating space. If no other life perceives the wildflowers during that period, then life A and the wildflowers forms an isolated system. We begin to count the flashes, assuming that  $t_1^+$  denotes the end of No.1 flash and the end of time  $t_1$ , as shown in (Figure 2). After the end of time  $t_1$ ,  $u_A$  is updated to (Tian M, [4])

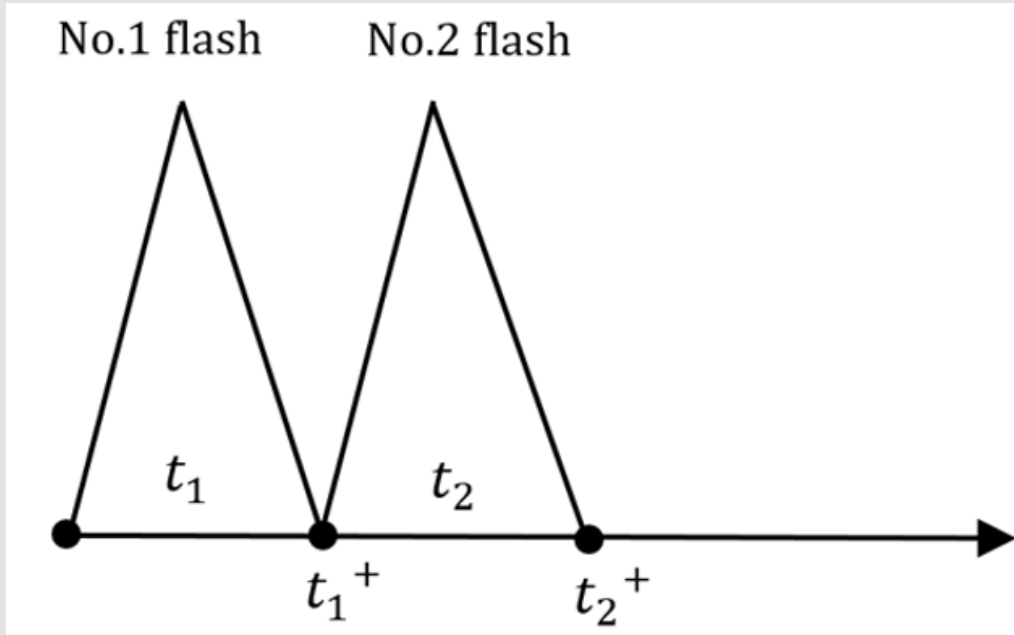


Figure 2: Diagram of the relationship between flash and time.

$$u_A(t_1^+) = u_A(t_1) + u_A(t_1) \cdot j\omega_0 \quad (2)$$

From Eq.2, it can be seen that after the end of time  $t_1$ ,  $u_A$  is updated to  $u_A(t_1)$  and  $\Phi_A(t_1)$ . At time  $t_2$ , we have

$$u_A = u_A(t_2) = u_A(t_1^+) \quad (3)$$

After the end of time  $t_2$ ,  $u_A$  is updated to

$$u_A(t_2^+) = u_A(t_2) + u_A(t_2) \cdot j\omega_0 \quad (4)$$

Eq.4 shows that  $u_A$  is updated to  $u_A(t_2)$  and  $\Phi_A(t_2)$ . From Eq.2 and Eq.4, we can understand the mechanism of establishing and maintaining the field.

**Mathematical Expression of the Relationship between Spirit and Matter** points out: All single worlds are superimposed to form a whole universe. This conclusion can also be used to describe things in the universe (Tian M, [2]). Then the following can be inferred: At time  $t_1$ , the space in the universe is superposition of spaces generated by all lives, i.e.,

$$\Phi(t_1) = \sum_{i=1}^N \Phi_i(t_1) \quad (5)$$

where  $\Phi_i(t_1)$  denotes the space generated by No.i life's flash at time  $t_1$ ;  $\Phi(t_1)$  denotes the overall space which all lives' flashes create at time  $t_1$ ; N denotes the total number of lives in universe. The superposition of space is similar to the superposition of gravitational field or electrostatic field, as shown in Figure 3. In Figure 3, the mass of object K is  $m_K$ ; object K has positive charge, and its charge amount is  $+q_K$ . The mass of object P is  $m_P$ ; object P has negative charge, and its charge amount is  $-q_P$ . The mass of object Q is  $m_Q$ ; object Q has positive charge, and its charge amount is  $+q_Q$ . Object K is in the gravitational field of object P and the gravitational field of object Q. These two gravitational fields are superimposed. The resultant of forces on object K is  $F_{P,mK} + F_{Q,mK}$ . Similarly, object K is in the electrostatic field of object P and the electrostatic field of object Q. These two electrostatic fields are superimposed. The total electric field strength of object K is  $E_{P,qK} + E_{Q,qK}$ . In fact, it will be found from the following that the superposition property of gravitational field and electrostatic field can confirm Eq.5, because both gravitational field and electrostatic field are characteristics of space. Many Worlds Interpretation also holds that the entire universe can be represented by a state vector, and that the overall state vector of the universe is actually the superposition of many sub-vectors (Capo, [5]).

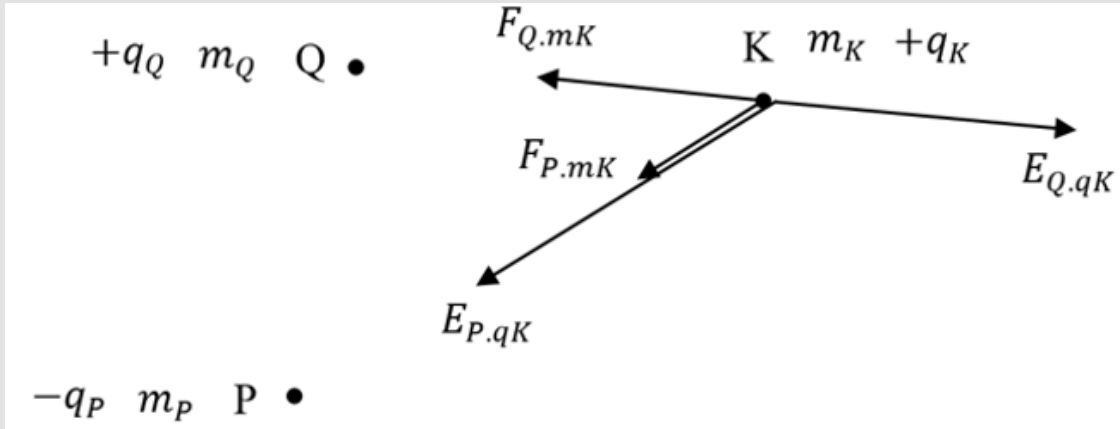


Figure 3: Superposition of gravitational fields and superposition of electrostatic fields.

On the spherical surface (Figure 4),  $u_A(t_1) \cdot j\omega_0$  distributed on per area is defined as field strength (abbr.  $E_{\Phi_A}$ ). We assume that the positive direction of  $E_{\Phi_A}$  is the divergence direction of  $u_A(t_1) \cdot j\omega_0$ .

$u_A$  is located at point A. Suppose that there is an object B in  $\neg u_A$ , and the distance between object B and  $u_A$  is  $r$ . On the spherical surface that is  $r$  away from point A, the values of the field strength at all points are equal.  $E_{\Phi_{A,B}}$  represents the field strength at the location of object B.

$$E_{\Phi_{A,B}} = \frac{u_A(t_1) \cdot j\omega_0}{4\pi r^2} \quad (6)$$

Because object B belongs to  $\neg u_A$ , object B is represented by  $j \cdot B$ . In field  $\Phi_A(t_1)$ , there is

$$F_{\Phi_{A,B}} = E_{\Phi_{A,B}} \cdot j \cdot B = -\frac{\omega_0}{4\pi} \cdot \frac{u_A(t_1) \cdot B}{r^2} \quad (7)$$

where  $F_{\Phi_{A,B}}$  denotes the impact of  $\Phi_A(t_1)$  on object B; the negative sign indicates that the direction of  $F_{\Phi_{A,B}}$  is opposite to the propagation direction of  $u_A(t_1) \cdot j\omega_0$ , pointing towards  $u_A(t_1)$ .

### Universal Gravitation and Coulomb Force

$\Phi_A(t_1)$  is a set that includes mass field, electrostatic field, etc. Firstly, we explore the application of Eq.7 in mass field. We assume that  $m_A(t_1)$  represents the mass of  $u_A$  at time  $t_1$ ;  $j\omega_{m0}$  represents life A's spiritual activity of a flash in mass field. We define  $E_{\Phi_{A,mB}}$  as follows: on the spherical surface (Figure 4) where object B is located, the quantity of  $m_A(t_1) \cdot j\omega_{m0}$  distributed to per area. So, we obtain

$$E_{\Phi_{A,mB}} = \frac{m_A(t_1) \cdot j\omega_{m0}}{4\pi r^2} \quad (8)$$

Because object B belongs to  $\neg u_A$ , the mass of object B is represented by  $j \cdot m_B(t_1)$ . In field  $\Phi_A(t_1)$ , there is

$$F_{\Phi_{A,mB}} = E_{\Phi_{A,mB}} \cdot j \cdot m_B(t_1) = -\frac{\omega_{m0}}{4\pi} \cdot \frac{m_A(t_1) \cdot m_B(t_1)}{r^2} \quad (9)$$

where  $F_{\Phi_{A,mB}}$  denotes the impact of  $\Phi_A(t_1)$  on object B in the mass field; the negative sign indicates that the direction of  $F_{\Phi_{A,mB}}$  is opposite to the propagation direction of  $m_A(t_1) \cdot j\omega_{m0}$ , pointing towards  $u_A$ . We compare Eq.9 with Newton's formula for universal gravitation (Yi, et al. [1])

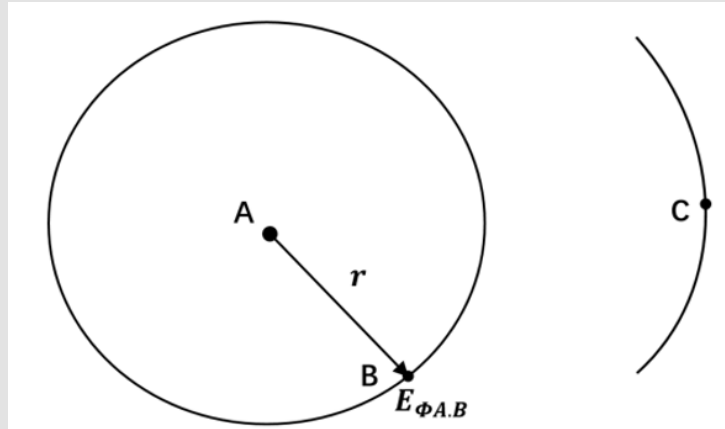


Figure 4: Propagation diagram of  $u_A(t_1).j\omega_0$ .

$$F = G \frac{m_1 m_2}{r^2} \quad (10)$$

$$f = \frac{q_1 q_2}{4\pi\epsilon r^2} \quad (13)$$

and know that is  $F_{\Phi_{A,mB}}$  universal gravitation. The difference between Eq.9 and Eq.10 is the expression of the coefficients. Consequently, Newton’s formula for universal gravitation confirms the propagation mode of consciousness in the universe.

Secondly, we explore the application of Eq.7 in electrostatic field. We assume that  $u_A$  carries positive charge  $+q_A$  at time  $t_1$ . We denote the charged state of  $u_A$  as  $i.q_A(t_1)$ , where  $i$  represents positively charged state,  $-i$  represents negatively charged state, and there is  $i^2 = -1$ . In addition,  $j\omega_{q0}$  represents life A’s spiritual activity of a flash in electrostatic field. We define  $E_{\Phi_{A,qB}}$  as follows: on the spherical surface (Figure 4) where object B is located, the quantity of  $i.q_A(t_1).j\omega_{q0}$  distributed to per area. So we obtain

$$E_{\Phi_{A,qB}} = \frac{i.q_A(t_1).j\omega_{q0}}{4\pi r^2} \quad (11)$$

Assume that object B has positive charge at time  $t_1$ , and its charge amount is  $+q_B$ . We take the charged state of object B as  $i.q_B(t_1)$ . Because object B belongs to  $-u_A$ , it is represented by  $j.i.q_B(t_1)$ . In field  $\Phi_A(t_1)$ , there is

$$F_{\Phi_{A,qB}} = E_{\Phi_{A,qB}}.j.i.q_B(t_1) = \frac{\omega_{q0}}{4\pi} \cdot \frac{q_A(t_1).q_B(t_1)}{r^2} \quad (12)$$

where  $F_{\Phi_{A,qB}}$  denotes the impact of  $\Phi_A(t_1)$  on object B in the electrostatic field. There is no negative sign in the result of Eq.12, indicating that the direction of  $F_{\Phi_{A,qB}}$  is the same as the propagation direction of  $i.q_A(t_1).j\omega_{q0}$ , i.e., from A to B (Figure 4). We compare Eq.12 with Coulomb’s law (Xia, et al. [6]).

and know that  $E_{\Phi_{A,qB}}$  is Coulomb force. The difference between Eq.12 and Eq.13 is the expression of the coefficients. Consequently, Coulomb’s law confirms the propagation mode of consciousness in the universe.

### Conclusion

The complementary sets can be described by vectors that are perpendicular to each other, i.e.,  $\overline{OA} \perp \overline{-OA}$ . Because the two vectors are perpendicular to each other on the complex plane, this article introduces the imaginary unit  $j$ , and then objectively describes the relationship between the complementary sets with equations. We assume that the effect of life A’s flash on  $u_A(t_1)$  is a spherical divergent field  $\Phi_A(t_1)$ , and the center of  $\Phi_A(t_1)$  is the material world  $u_A(t_1)$  perceived by life A. Eq.7 describes how an object is impacted in  $\Phi_A(t_1)$ . Eq.9 describes how the mass of an object is impacted in  $\Phi_A(t_1)$ . Eq.9 is formally consistent with Newton’s formula for universal gravitation. So, we think that universal gravitation confirms the propagation mode of flash in material realm. Similarly, Coulomb’s law also confirms the propagation mode of consciousness. Furthermore, the formula for universal gravitation is the propagation law of flash in mass field; Coulomb’s law is the propagation law of flash in electrostatic field; their fields are essentially manifestations of flash propagation. Thus, space is created by flash.

The propagation mode of flash in spiritual realm is telepathy, similar to resonance in physics. If the frequencies of two lives are very close over a period of time, telepathy will occur. Because it occurs in spiritual realm, telepathy is not limited by distance or direction, nor is it obstructed by objects.

In short, consciousness is an existence with its own characteristics, and flash is a fundamental characteristic of consciousness. Since consciousness is an existence, it has ways of acting on other things, e.g., to perceive, field and telepathy. These are all ways for us to understand consciousness. A life's flash on Earth has an impact on the universe. The impact is reflected not only in the force acting on object, but also in the telepathy. At the same time, the life's flash creates its own space in propagation. The human population on Earth has reached 8 billion, and the number of all lives on Earth is incalculable. All these lives have a comprehensive impact on the universe through their flashes. Therefore, our human civilization needs to go further and play a more positive role in the universe.

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