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Journal of Computer Science Research
https://ojs.bilpublishing.com/index.php/jcsr

ARTICLE

The Formation of the Electronic Tornado is the Basis of Superconductivity

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ARTICLE INFO

Article history
Received: 7 January 2021
Accepted: 28 January 2021
Published Online: 31 January 2021

Keywords:
Superconductivity
Electronic tornado
Zero resistance
Meissner effect
Josephson effect
Cooper pair virtual space-time wave
Energy Qi field force
Coherence coefficient

ABSTRACT

The space-time ladder theory reveals that the formation of electronic tornadoes, or the formation of electronic dissipative structures, to be precise, the enhancement of electronic Energy Qi field is the basis of superconductivity. The surrounding area of the electronic tornado is expanding, which is the basis of the Meissner effect, and the center is contracting, which is the basis of the pinning force. When the attractive force of the Energy Qi field is greater than the Coulomb repulsive force, the electrons form a Cooper pair and release dark energy into virtual space-time. When the dark energy increases to a certain extent, the virtual space-time frees the Cooper pair and forms an electron-virtual space-time wave, which fluctuates freely in the superconducting material, which is the basis for the superconducting resistance to be zero. This is similar to the principle of a hot air balloon. The virtual space-time is hot air and the electron pair is a hot air balloon device. Conductor electrons are free and easy to emit dark energy, resulting in insufficient dark energy, and it is not easy to form electron-pair virtual space-time waves, so the superconducting critical temperature is very low. This is because the emission coefficient of the conductor is too high. Insulator electrons are not easy to emit dark energy and easily form electron-pair virtual space-time waves. Therefore, the superconducting critical temperature is slightly higher because of the low emission coefficient of the insulator. The solution of the Qi-space-time wave equation, that is, the coherence coefficient, is an important factor in superconductivity. In addition, the conditions under which tornadoes form are also an important basis for superconductivity. Finally, it is emphasized that the coherence coefficient and prevention of dark energy emission are the two most important elements for preparing superconducting materials.

1. Historical Review of Superconductivity

In 1911, Dutch scientists discovered the superconductivity of mercury under extremely low temperature conditions, opening up a new field of scientific research.

In 1986, German and Swiss scientists discovered a copper oxide superconductor with a critical transition temperature of 35K. But in the following less than two years, researchers used elemental substitution to raise the superconducting critical temperature of this type of copper oxide to 135K. In the following thirty years, new superconducting systems emerged in an endless stream, and

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DOI: https://doi.org/10.30564/jcsr.v3i1.2780

they often became the hot topics of science at that time. Several examples that have attracted attention include: C_{60} superconducting system (1991), Sr_2RuO_4 superconducting system (1994), MgB_2 superconducting system (2001), Na_xCoO_2 superconducting system (2003), iron-based superconducting system (2008), distorted superconducting system (around 2010), graphene superconducting system (2018), nickel-based superconducting system (2019), etc., among which are also interspersed with fermion superconductivity, organic superconductivity, and Important progress in various aspects such as superconductivity under extreme high pressure conditions.

2. Theoretical Basis of Time-space Ladder [1]

A: Energy Qi Field

Through the comparative study by space-timeladder theory,it is found that electricity is a compressed version of energy and the magnetic field is a compressed version of TCM Qi. Therefore, the conclusion drawn from compar-ing electric and magnetic is that the Qi field which varies with time can generate the vortex energy field, and the energy field which varies with time can generate the vortex Qi field. The energy field and the Qi field are not isolated from each other. They are interconnected and mutually generated to form a unified energy-Qi field.

Similar to Lorentz force, we derive the following Energy Qi Field formula: $F=m(E+vQ)$ F: Energy Qi Field force, m: mass, E: energy field strength, v: speed, Q: Qi induction strength.

Similarly, if an object (m) enters the Qi Field, the angle between its velocity and the Qi Field is θ, the object will make equidistant spiral motion, the spiral radius, period and pitch are:

$$R=\frac{v\sin\theta}{Q},T=\frac{2\pi}{Q},h=\frac{2\pi v\cos\theta}{Q}.$$

B: Tornadoes are the result of Qi space-time [1], It is generally believed that tornadoes are generated when cold air passes through a layer of hot air, causing warm air to rise rapidly. A tornado is the flow of hot and cold air, resulting in Qi space-time, and Qi space-time is a spiral vector field [1], which causes the air to spiral up rapidly and form a tornado. The waterspout is similar.

The mystery of the Bermuda Triangle: Mainly due to a large amount of energy changes, resulting in a large amount of Qi space-time. Qi space-time is a helical vector field. Airplane crashes are caused by air vortexes caused by Qi space-time, while ship crashes are caused by sea vortexes and air vortexes caused by Qi space-time.

The dissipative structure is produced by energy flow leading to the generation of Qi space-time, and the performance of qi Qi space-time in life is the orderly structure of life. The basic structure of life is protein, and the structure of protein is an ordered structure, especially the alpha helix structure of protein, which is connected with the spiral vector field of space-time. More importantly, the formation basis of tornadoes is very similar to the formation basis of dissipative structures:

The basis of dissipative structure formation:

(1) Stay away from equilibrium.

(2) Exchange of energy and matter.

(3) Non-linear interaction exists inside.

The basis of tornado formation:

(1) Stay away from equilibrium.

(2) Exchange of energy and matter. (Strong convective movement of air)

(3) Non-linear interaction exists inside. (Air vortex)

C: Qi wave equation [1]

$$i\hbar\frac{\partial}{\partial t}\psi=\frac{\hbar^2}{m}\nabla^2\psi$$

The probability density of the mixed state of the two-state wave function is:

$$\rho(x,t)=|\psi(x,t)|^2=\psi^2{}_{E_1}(x)+\psi^2{}_{E_2}(x)+2\psi_{E_1}(x)\psi_{E_2}(x)\cos\left(\frac{|E_1-E_2|}{\hbar}t\right)$$

among them $\cos\left(\frac{|E_1-E_2|}{\hbar}t\right)$ Is the coherence coefficient.

D: Correspondence between electron and virtual space-time [2]

Electrons and their waves are the contradictory unity of wave-particle duality, both particles and waves. From Figure 1, we know that electrons and virtual space-time constitute a contradiction unity, which contains macroscopic matter (m) and Energy Qi field, As well as Boson and spiritual space- time. Therefore, the mass of matter (m) and Energy Qi field, as well as boson (weak force space-time) and spiritual space-time are the basis of electrons. The basic properties of electrons include the mass of matter (m) and the basic properties of energy Qi field, as well as the properties of bosons, but the electron energy is too large, which overwhelms these foundations.

Described from the perspective of the Energy Qi field [1]: the energy line starts in the energy contraction state and ends in the energy expansion state. We know that the energy field starts from the mass of matter (m) (particle nature), because the contracted state of energy is the mass of matter (m). At the same time, the energy field terminates

 DOI: https://doi.org/10.30564/jcsr.v3i1.2780

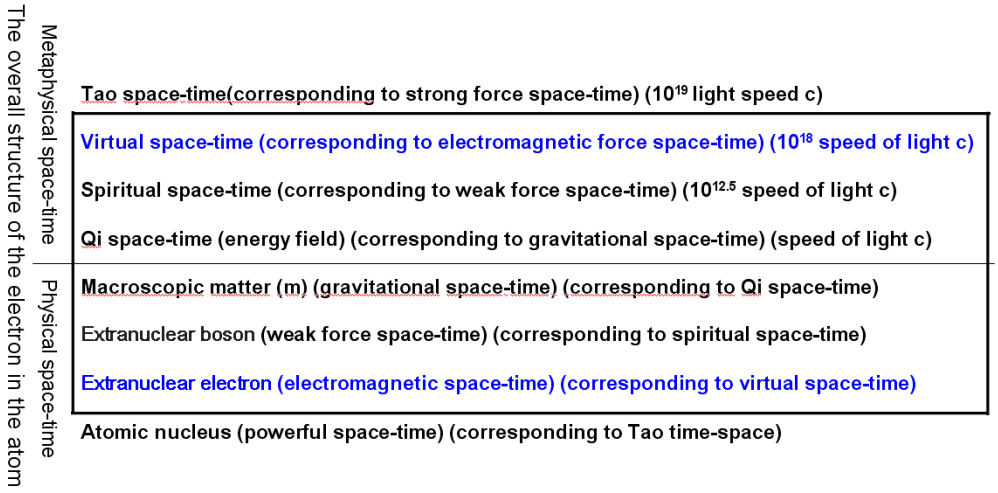

Figure 1. The overall structure of the electron in the atom (blue part and Middle part)

in the expanded state of energy, and the expanded state is the corresponding metaphysical space-time, which terminates in the virtual space-time for electrons. The energy field extends to the electron and virtual space-time, so the energy field is a basic field.

3. Calculation of the space-time ladder theory

3.1 Calculation of Energy Qi Field force

Because there are high-temperature superconducting copper oxides, we use oxygen atoms as an example to calculate, and the rest can be analogized.

If the spiral radius of the spiral motion of the gas field of the energy gas field formed in the oxygen atom is the radius of the oxygen atom, it is:

$R=60pm=6\times10^{-11}m$

Let us first assume that the distance between electrons is one-tenth of the atomic radius:

$R=6\times10^{-12}m$

Assuming the speed of the electron: $v=299792458/137m/s=2188266.117m/s$,

Suppose the angle between the velocity of the electron and the gas field is: $\sin(45^\circ)\approx0.707$.

Assuming that the spiral radius of the energy field is: $R=6\times10^{-12}m$

We can get the Qi induction: $Q=\frac{v\sin\theta}{R}=2.578506908\times10^{17}$/s.

The quality of the electron is: $m=9.10938356\times10^{-31}$kg, also because $E=vQ$[1], So the Energy Qi Force received by the electron is:

$F_1=m(E+vQ)=1.02798652\times10^{-6}N$

The above is the force of the Energy Qi Field received by the electron. The following calculates the repulsive force between two electrons:

$$F=k\frac{qq}{r^2}$$

Electron power: $q=1.602176634\times10^{-19}C$

$k=8.9875517873684\times10^{-9}Nm^2C^{-2}$

$r=R=6pm=6\times10^{-12}m$

$$F_2=k\frac{qq}{r^2}=6.408548753\times10^{-6}N$$

$$\frac{F_2}{F_1}=6.234078588$$

In other words, in a short distance, the Coulomb force between electrons is greater than the Energy Qi field force.

Let's do the calculations below. Under the condition of oxygen atom radius, that is to say, the distance between electrons is the oxygen atom radius:

$R=6\times10^{-11}m$

$$Q=\frac{v\sin\theta}{R}=2.578506908\times10^{16}\text{/s.}$$

$F_1=m(E+vQ)=1.02798652\times10^{-7}N$

$$F_2=k\frac{qq}{r^2}=6.408548753\times10^{-8}N$$

$$\frac{F_1}{F_2}=1.604086291$$

That is to say, in the case of the radius of the oxygen atom, the Energy Qi Field force received by the electron is already greater than the Coulomb force between the electrons, and the Energy Qi Field force acts on the mass

DOI: https://doi.org/10.30564/jcsr.v3i1.2780

of the electron and has nothing to do with the repulsion of the same-same charge. Electrons can form a "Cooper pair" under the action of Energy Qi Field force.

In order to distinguish the magnitude of various forces, we can also calculate the Newtonian gravitational force between oxygen atoms and electrons:

The mass of the oxygen atom is: $m_1 = 2.657 \times 10^{-26}$kg

The quality of the electron is: $m_2 = 9.10938356 \times 10^{-31}$kg

$G = 6.6743 \times 10^{-11} m^3 kg^{-1} s^{-2}$

Let us first assume that the distance between the nucleus and the electron is one-tenth of the atomic radius: $R = 6 \times 10^{-12} m$

$$F_3 = G\frac{m_1 m_2}{R^2} = 4.484395173 \times 10^{-44}\text{N}$$

We can see that the Newtonian force at this distance is already very small and can be ignored, and there is no need to calculate the Newtonian force for a larger distance.

The above is only the case of calculating the inner and atomic radius of the oxygen atom, but not the case outside the atom. Below we calculate the case of the Cooper pair radius (that is, half of the coherence length):

$R = 5 \times 10^{-10} m$[3]

$$Q = \frac{v \sin\theta}{R} = 3.094349689 \times 10^{-15}/s$$

$F_1 = m(E + vQ) = 1.18402999 \times 10^{-8} N$

$$F_2 = k\frac{qq}{r^2} = 2.307077551 \times 10^{-9} N$$

$$\frac{F_1}{F_2} = 5.132163414$$

When the radius of the Cooper pair is reached, the Energy Qi Field force is far greater than the repulsive force between electrons. This is similar to the Energy Qi Field force of the Milky Way [1]: In the Milky Way, within a short distance from the galactic center, Newtonian gravity plays a leading role, and at a long distance from the galactic center, the Energy Qi Field force plays a leading role. Similarly, that is to say, inside the atom, the Coulomb repulsive force between electrons dominates, while outside the atom, when the radius is larger than the atomic radius, the Energy Qi Field force dominates.

That is, the main reason for electron pairing is the effect of energy and aura force.

Through the above calculations, we know that the formation of the electronic "Cooper pair" is mainly formed by the action of Energy Qi Field force. The Energy Qi Field force solves the problem of why the electronic Cooper pair has changed from mutual repulsion to mutual attraction.

In order to better understand superconductivity, let's express the calculation results of dark matter again [1]: The space-time ladder theory reveals that in addition to Newtonian gravity, the movement of stars is also affected by the force of the Energy Qi Field. Actual observation: within the range of 4 <R <19 kpc from the Galactic Center, the speed of the star is about 220 km/s. When R> 8.5 kpc, the rotation curve is raised. Theoretical calculation: within the range of 4 <R <16 kpc from the Galactic Center, the speed of the star is about 220 km/s. When R> 8.5 kpc, specifically in the range of 10 <R <19 kpc, the speed of the star increases from 220 km/s to 235 km/s, and the rotation curve is raised, but overall, the rotation curve is basically flat, Basically consistent with actual observations..

3.2 Calculation of Coherence Coefficient

Similar to the calculation of the love index [1], we can calculate the coherence coefficient between electrons.

Assuming that in the superconducting state, the frequency of the electrons tends to be the same, and resonance occurs, that is to say, the frequency of the electrons are the same, so we have:

$$\begin{aligned} E_{all} &= E_{\text{electronic1}} + E_{\text{electronic2}} + E_{\text{electronic3}} + \ldots E_{\text{electronic}n} \\ &= h\left(f_{\text{electronic1}} + f_{\text{electronic2}} + f_{\text{electronic3}} + \ldots f_{\text{electronic}n}\right) \\ &= hnf_{same} \end{aligned}$$

In other words, the total energy of an atom is only related to the number of electrons, that is, only related to the atomic number.

Similar to the calculation of the love index [1], we set the highest energy of the atom as: 173, because in the periodic table, Ust is a chemical element that has not yet been discovered, and the atomic number is 173, which is the largest, so we The highest energy of the atom is defined as 173. There is no unit here because the subsequent calculations are all ratios and no unit is needed. We define the lowest energy of an atom as:1,Because this is the atomic number of the hydrogen atom in the periodic table.

Arrange in a straight line from smallest to largest (Figure 2), that is, the angle between energy 1 and energy 173 is 180°, and the angle between the intermediate value 86 and 1 or 173 is 90°. However, due to the formation of the Mobius Qi space-time flow zone [1], the angle between the intermediate value 86 and 1 or 173 becomes 180°. Similar intermediate values: 43 and 129 also have similar 86 algorithms.

 DOI: https://doi.org/10.30564/jcsr.v3i1.2780

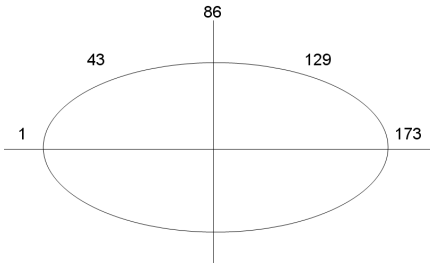

Figure 2. Atomic Energy Distribution Map

In this way, we will get the corresponding coherence coefficient formula:

$$\frac{E_{\text{maximum}}-E_{\text{smallest}}}{E_2-E_1}=\frac{173-1}{E_2-E_1}=\frac{\pi\left(180^0\right)}{\theta}\,([1])$$

So $\theta=\frac{180^0}{172}\left(E_2-E_1\right)$

Similarly [1], there is the following formula:

$$\theta=\frac{180^0}{172}\left(E_2-E_1\right)$$

$$\theta=\frac{180^0}{129}\left(E_2-E_1\right)$$

$$\theta=\frac{180^0}{86}\left(E_2-E_1\right)$$

$$\theta=\frac{180^0}{43}\left(E_2-E_1\right)$$

These are the four formulas for calculating the electron coherence coefficient, where E2 is the higher atomic energy, and E1 is the lower atomic energy.

$\cos\theta=\frac{180^0}{172}\left(E_2-E_1\right)$ ($K_{\text{Coherence coefficient1}}=K_{cc1}$): This is the total orbital coherence coefficient, because it is designed by us and is the highest and lowest atomic number found in the periodic table.

$\cos\theta=\frac{180^0}{129}\left(E_2-E_1\right)$ (K_{cc2}): It can be considered as the orbital coherence coefficient from 1 to 129 energy and the spin coherence coefficient from 129 to 172 and 86.

$\cos\theta=\frac{180^0}{86}\left(E_2-E_1\right)$ (K_{cc3}): It can be considered as the orbital coherence coefficient from 1 to 86 energy and the spin coherence coefficient from 86 to 172 and 1.

$\cos\theta=\frac{180^0}{43}\left(E_2-E_1\right)$(K_{cc4}): It can be considered as the orbital coherence coefficient from 1 to 43 energy and the spin coherence coefficient from 43 to 86 and 1.

In other words, except for Cos(180/172), which is the orbital coherence coefficient, the other three contain the orbital coherence and spin coherence coefficients.

Below we take $HgBa_2Ca_2Cu_3O_9$ (Tc=130K) as an example to calculate the coherence coefficient.

The atomic number is Hg=80, Ba=56, Ca=20, Cu=29, O=8, corresponding to Ba_2=112, Ca_2=40, Cu_3=87, O_9=72.

First calculate the coherence coefficient of Cu_3 and O_9:

$$Kcc_1=\cos\theta_1=\frac{180^0}{172}\left(E_2-E_1\right)=\frac{180^0}{172}\left(87-72\right)=0.962702729$$

$$K_{cc2}=\cos\theta_2=\frac{180^0}{129}\left(E_2-E_1\right)=\frac{180^0}{129}\left(87-72\right)=0.934016109$$

$$K_{cc3}=\cos\theta_3=\frac{180^0}{86}\left(E_2-E_1\right)=\frac{180^0}{86}\left(87-72\right)=0.853593089$$

$$K_{cc4}=\cos\theta_4=\frac{180^0}{43}\left(E_2-E_1\right)=\frac{180^0}{43}\left(87-E72\right)=0.457242323$$

We can see that the correlation coefficients 1, 2, 3, are relatively large, which means that the correlation is very good.

Similar calculations we get:

The four coherence coefficients of HgO_9 are respectively (The following coherence coefficients are arranged in order from top to bottom, which are:K_{cc1}, K_{cc2}, K_{cc3}, K_{cc4}):

0.989343368
0.981081089
0.9576006
0.833997818

The four coherence coefficients of Ba_2O_9 are:

0.744772183
0.561881939
0.109371208
-0.976075878

The four coherence coefficients of Ca_2O_9 are:

0.833997818
0.711398768
0.39110472
-0.694074195

We can see that the four coherence coefficients of HgO_9 are the best. We also know the history of superconductivity. It is because of the addition of Hg that the superconducting temperature has risen to a higher level [3].

Below we count other superconducting materials (Table 1):

We can see that, except for NBTi, the absolute value of the coherence coefficient is positively correlated with the superconducting critical temperature. The most amazing thing is MgB_2, the coherence coefficient is above 0.98, so MgB_2 is currently the low temperature superconductor with the highest superconducting transition temperature. In fact, we know this formula, we can also find better superconducting materials. And according to calculations, it is not difficult to find.

Below we calculate the coherence coefficient of copper-based superconducting materials (Table 2):

DOI: https://doi.org/10.30564/jcsr.v3i1.2780

Table 1. Coherence coefficient of alloy superconductor

NBTi (Tc=11k)	NBN (Tc=16k)	NB_3SN(Tc=17.88k)	NB_3Al(Tc=19.1k)	NB_3Ge(Tc=23.2k)	MgB_2(Tc=39k)
0.940384799	0.813289741	0.235221014	-0.424456699	-0.091198474	0.999332848
0.894843789	0.676337994	-0.205528952	-0.894843789	-0.601490815	0.998814055
0.76864714	0.322880405	-0.889342149	-0.639673022	-0.983365677	0.997332284
0.181636851	-0.791496488	0.581858916	-0.181636851	0.934016109	0.989343368

Table 2. Coherence coefficients of copper-based superconductors

$Hg_{0.8}Tl_{0.2}Ba_2Ca_2Cu_3O_8$ (Tc=138k)		$HgBa_2Ca_2Cu_3O_8$(Tc=133k)		$Bi_2Sr_2Ca_2Cu_3O_{10}$(Tc=110k)		$YBa_2Cu_3O_7$ (Tc=77k)	
$Hg_{0.8}O_8$	1	HgO_8	0.9576006	Bi_2O_{10}	6.12323E-17	YO_7	0.95217901
	1		0.925040207		-0.5		0.9155157
	1		0.833997818		-1		0.81328974
	1		0.39110472		1		0.3228804
$T_{l0.2}O_8$	0.642476627	Ba_2O_8	0.639673022	Sr_2O_{10}	0.997332284	Ba_2O_7	0.52094034
	0.395582781		0.39110472		0.995259034		0.20552895
	-0.174447569		-0.181636851		0.989343368		-0.4572423
	-0.939136092		-0.934016109		0.9576006		-0.5818589
Ba_2O_8	0.639673022	Ca_2O_8	0.694074195	Ca_2O_{10}	0.744772183	Cu_3O_7	0.84393622
	0.39110472		0.478763129		0.561881939		0.72830144
	-0.181636851		-0.036522023		0.109371208		0.4244567
	-0.934016109		-0.997332284		-0.976075878		-0.639673
Ca_2O_8	0.694074195	Cu_3O_8	0.913049509	Cu_3O_{10}	0.991837612		
	0.478763129		0.847186622		0.98550446		
	-0.036522023		0.667318811		0.967483697		
	-0.997332284		-0.109371208		0.872049408		

Comparing $Hg_{0.8}T_{l0.2}Ba_2Ca_2Cu3O_8$ (Tc=138k) and $HgBa_2Ca_2Cu_3O_8$ (Tc=133k, we can see that the four coherence coefficients of $Hg_{0.8}O_8$ are higher than HgO_8, which is an important reason why 138k is higher than 133k. From the results, although Cu_3O_8 The coherence coefficient of HgO_8 is higher than that of Cu_2O_8, but the ratio of $Hg_{0.8}O_8$ is more important. Comparing $HgBa_2Ca_2Cu_3O_8$ (Tc=133k) and $Bi_2Sr_2Ca_2Cu_3O_{10}$ (Tc=110k), the importance of HgO_8 can also be seen. Furthermore, the coherence coefficient of $HgBa_2Ca_2Cu_3O_8$ Ca_2O_8 It is better than Ca_2O_{10}. Finally, look at $YBa_2Cu_3O_7$ (Tc=77k), only the coherence coefficient of YO_7 is better, so the superconducting critical temperature is the lowest.

Coherence coefficient of iron-based superconducting materials (Table 3):

 DOI: https://doi.org/10.30564/jcsr.v3i1.2780

Table 3. Coherence coefficients of iron-based superconductors

11 Tc<27k	111 Tc=9-25k	122 Tc-38K	1111 Tc=26k
FeAs	LiFeAs,NaFeAs	(Ba, Sr, Ca) Fe_2 As_2	LaO0.89F0.11FeAs
FeAs	FeAs	Fe_2As_2	FeAs
0.991837612	0.991837612	0.967483697	0.991837612
0.98550446	0.98550446	0.942438083	0.98550446
0.967483697	0.967483697	0.872049408	0.967483697
0.872049408	0.872049408	0.52094034	0.872049408
	LiAs	BaAs2	F0.11As
	0.853593089	0.983365677	0.833897023
	0.744772183	0.970491794	0.711227594
	0.457242323	0.934016109	0.390768491
	-0.581858916	0.744772183	-0.694599974
	NaAs	SrAs2	O0.89As
	0.920346184	0.872049408	0.8903422
	0.859872993	0.77637908	0.807870293
	0.694074195	0.52094034	0.585418465
	-0.036522023	-0.457242323	-0.314570442
		CaAs2	LaAs
		0.667318811	0.905448237
		0.435450345	0.833997818
		-0.109371208	0.639673022
		-0.976075878	-0.181636851

The basic structure of iron-based superconductors, FeAs and Fe_2As_2, have good coherence coefficients. In addition, $BaAs_2$ has the best coherence coefficient, so the critical temperature is also the highest.

Other coherence coefficients (Table 4):

Table 4. Other coherence coefficients

H_2S	LaH_{10}	Cs_3C_{60}
0.967483697	0.653604939	-0.913049509
0.942438083	0.413400118	0.036522023
0.872049408	-0.145601168	0.667318811
0.52094034	-0.9576006	-0.109371208

The above H_2s has the best coherence coefficient.

There are also some calculations, which may be coincidence, or there may be an inevitable connection between them (Table 5):

MgB_2 has a double energy gap [4], $Bi_2Sr_2Ca_2Cu_3O_{10}$ has a double energy gap [5], and (Li1-xFex) OHFeSe superconductors have a double energy gap [6].

Table 5. Some relations between coherence coefficient and energy gap

MgB_2	Cu_3O_{10}	FeAs
0.999332848	0.991837612	0.991837612
0.998814055	0.98550446	0.98550446
0.997332284	0.967483697	0.967483697
0.989343368	0.872049408	0.872049408
Dual energy gap	Dual energy gap	Dual energy gap

We can see that the coherence coefficients of the main structure of MgB_2, $Bi_2Sr_2Ca_2Cu_3O_{10}$, and (Li1-xFex) OHFeSe are all high, and they all have double energy gaps. Therefore, the double energy gap may have a certain relationship with the coherence coefficient, which needs to be tested.

4. Superconductivity Explained by the Space-time Ladder Theory

The above calculations can show that the formation of superconducting electron Cooper pairs is due to the force of the Energy Qi Field, while the coherence cohesion is determined by the coherence coefficient between electrons, and the calculation of the coherence coefficient is also calculated according to the Qi space-time wave equation in the Energy Qi field. So the fundamental reason for determining superconductivity is the Energy Qi field. how is the Energy Qi field formed? The space-time ladder theory reveals [1] that the Qi field that changes with time can excite the vortex energy field, and the energy field that changes with time can excite the vortex Qi field. The energy field and the Qi field are not isolated from each other, they are interconnected and mutually excited to form a unified energy Qi field. The main conclusion here is that the Qi field is generated through the change of energy. Cooling or high pressure will cause changes in energy, resulting in an Energy Qi field. Besides, there is an energy Qi in the atom, but it is just enhancement. Because the Energy Qi field is the basis and source of matter formation, the Energy Qi field has always worked in the atom.

The above explanation is very abstract, and there is not much data to refer to. However, tornadoes are the result of Energy Qi field [1]. We can refer to certain characteristics of tornadoes to add some useful references for supercon-

DOI: https://doi.org/10.30564/jcsr.v3i1.2780

ductivity research.

Tornadoes are the products of thunderstorms in the clouds. Thunderstorms are developed from a single cumulonimbus cloud or a combination of multiple cumulonimbus clouds at different stages of development.And the 3 necessary conditions for forming a cumulonimbus cloud:

(1) A lot of unstable energy.

(2) Sufficient water vapor.

(3) Sufficient impact force.

Features of Tornado Corridor:

The "Tornado Corridor" in the United States, also called the "Great Plains", has the most suitable natural conditions for the formation of tornadoes.

Through the above description of the characteristics of tornadoes, we can summarize some of the characteristics of superconductivity:

(1) There must be energy changes around the material or inside the material, which is the basis for the Energy Qi field.

(2) Sufficient electrons or holes,similar to a tornado: ample water vapor.

(3) Sufficient pressure, similar to enough impact force of tornado.

(4) The material structure must have a wide and flat structure, similar to the "Great Plain" of the American "Tornado Corridor".

(5) In addition to the useful information brought by the tornado, we still focus on the correlation coefficient:

Here is just one example, the others can be calculated similarly:

Here just take C_{60} as an example to calculate the coherence coefficient of the expected material (Table 6):

Table 6. Coherence coefficient of expected material based on C_{60}

Cs_3C_{60}	$Fe_{14}C_{60}$	NB_9C_{60}	Sn_7C_{60}	$Ge_{11}C_{60}$	$Mg_{12}C_{60}$
					$Ca_{20}C_{60}$
					$C_{60}O_{45}$
					$Hg_{4.5}C_{60}$
-0.91305	0.997332	0.9865191	0.98336568	0.999333	1
0.036522	0.995259	0.9760759	0.97049179	0.998814	1
0.6673188	0.989343	0.9464398	0.93401611	0.997332	1
-0.109371	0.957601	0.7914965	0.74477218	0.989343	1

Except for the Cs_3C_{60} already has the above, the rest are theoretical pairs, and some of the coherence coefficient is 1.

5. Further Explanation

The above explanations are based on experimental results, and the following explanations are theoretical inferences.

5.1 Superconducting Zero Resistance

Energy changes produce a new energy Qi field, which can also be said to strengthen the original energy Qi field. Under the action of energy Qi field force, electrons form Cooper pairs and release dark energy into virtual space-time.Cooper pairs and virtual space-time form space-time waves,and the space-time wave fluctuates freely in the material without any collision, and naturally the resistance is zero. This explanation can not only explain the resistance to zero, but also explain the Josephson effect, and the theoretical inference can also form the future superconducting wireless Power grid. Since the superconducting current is an electron pair-virtual space-time wave, it may be transported to any distant place through quantum entanglement. In the future, mobile phones or spacecraft can carry out superconducting current wireless charging anywhere, as long as the device has a way to accept quantum entanglement. The most practical thing is to eliminate the current huge power grid. The principle that can be guessed. The wireless charging conversion mode is: electricity-magnetism-electricity, and the future conversion mode of superconducting wireless Power grid is: electricity-virtual space-time -electricity. If entanglement is difficult to establish, two resonance systems can also be used to transmit electrical energy. The space-time ladder theory reveals that the speed of virtual space-time is 1018 times the speed of light. This fast speed is essential for space flight.

5.2 Superconductivity is Completely Diamagnetic

The center of the electronic tornado is the shrinking electron flow, and the surrounding is the expanding electron flow. The surrounding expansion flow discharges all the magnetic field. This is the Meissner effect. At the same time, the contraction of the center is the pinning effect, which is the magnetic flux pinning (Figure 3).

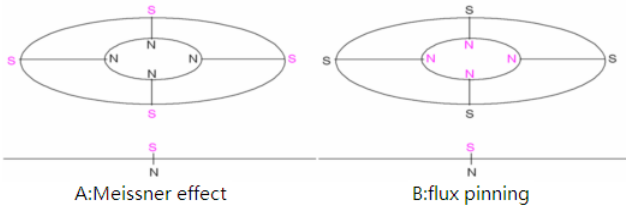

Figure 3. Superconducting Meissner effect and magnetic flux pinning

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5.3 Five Factors of Superconductivity

(1) Coherence coefficient. The calculations above have been introduced. This is the most important factor in superconductivity.

(2) Dispersion coefficient ($K_{\text{Dispersion coefficient}} = K_{DC}$).

This coefficient is actually a unique coefficient of the space-time ladder theory. According to the space-time ladder theory, electrons and virtual space-time are a contradictory pair. The state of electrons can affect the dark energy in virtual space-time. When we calculated the double slit experiment [2], we knew that because one photon emits dark energy and the other photon does not emit dark energy, the frequencies of the two are different, which causes the interference fringes to disappear. Therefore, in superconductivity, the state of electrons will also affect the emission of dark energy. Metals, where electrons leak more,emit more dark energy. The composition of the electronic Cooper pair and the virtual space-time is similar to a hot air balloon. The electronic Cooper pair is a hot air balloon device, and dark energy is similar to hot air. For a hot air balloon, when the hot air increases to a certain level, the hot air balloon floats up. Similarly, when the dark energy increases to a certain level, the electronic Cooper pair and the virtual space-time constitute the electronic Cooper pair virtual space-time wave, It began to fluctuate freely. The increase in dark energy comes from the formation of electronic tornadoes. However, metal electrons are relatively leaky and easily emit dark energy. As a result, the electronic Cooper pair-virtual space-time wave cannot "float", that is, they cannot freely wave in superconducting materials, and the free wave of electronic Cooper pair-virtual space-time waves is the basis of superconductivity. So the critical temperature of metal superconductivity is relatively low. On the contrary, the electrons in the insulator are not free to leak out, so it is not easy to leak and emit dark energy. Therefore, the critical temperature of copper-based superconductors is relatively high. The semiconductor is somewhere in between.

This Dispersion coefficient explains well the reason why the critical temperature of copper-based superconducting is relatively high, and is also a basic principle for preparing superconducting materials in the future. The dispersion coefficient is very important, second only to the coherence coefficient. No matter how high the coherence coefficient is, as long as the dispersion coefficient is very large, it will not work.

(3) Difference coefficient ($K_{\text{Coefficient of difference}} = K_{CD}$). The difference coefficient is proposed because the single-element superconducting coherence coefficients are all 1, which is very high. However, the critical temperature of single-element superconductors, especially metal element superconductors, is very low, which contradicts the coherence coefficient, so a difference coefficient is proposed., To make up for the lack of coherence coefficient.

(4) Material structure. The superconducting state is the dissipative structure state, and the construction of this material structure can learn from the theory of dissipative structure. In addition, according to the above analysis of the Dispersion coefficient, it is known that when preparing superconducting materials, the coherence coefficient and the Dispersion coefficient should be considered. First calculate the coherence coefficient, and prepare all materials with high coherence coefficients. The next step is to avoid the emission of dark energy. To avoid the emission of dark energy, the surface of the superconducting material must be an insulator, a conductor inside, providing electronic Cooper pairs, and a semiconductor in the middle. This is the superconducting sandwich structure. To make this material an organic whole, it must be prepared under ultra-high temperature and ultra-high pressure, because only in this way can it be seamlessly connected and block the conductor electrons inside to emit dark energy. The preparation of this high-temperature and high-pressure superconducting sandwich creates a problem for the preparation of superconducting materials. However, once it is tested, it will go smoothly. Because only in this way can it be a real room temperature superconducting material.

(5) Environmental conditions. In addition to cooling and pressurizing, we are based on superconductivity based on energy Qi field, we can enhance the environmental energy Qi field. According to the space-time ladder theory, the change of energy produces an energy field, so we can use this to enhance the energy Qi field around the material.

With the above five factors, let's take a look at the shortcomings of the coherence coefficient (Table 7):

It can be seen from Table 7 that the coherence coefficients of MgB_2 and TiCo are both high, but the critical temperature of MgB_2 is very high (39k), while the critical temperature of TiCo is very low (0.7k), indicating that the coherence coefficient is not absolute. Consider other factors, such as Dispersion coefficient, difference coefficient, material structure, etc.

Table 7. Coherence coefficient shortcoming

MgB_2 Tc=39k	TiCo Tc= 0.71k
0.999332848	0.995832736
0.998814055	0.992595535
0.997332284	0.983365677
0.989343368	0.934016109

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Even so, we believe that the coherence coefficient still has a guiding role in the preparation of superconducting materials. It is to first know which combination is the best. This combination is best reflected in the preparation of $Hg_{0.8}O_8$, because this ratio leads to four All the coherence coefficients are 1, so a high critical temperature also appears.

5.4 Relationship with BCS Theory

According to the BCS theory (Bardeen-Cooper-Schrieffer theory), under the influence of lattice vibration (that is, the Debye frequency of phonons), there will be mutual attraction between electrons and electrons. The Debye frequency of the phonon is actually a manifestation of the Qi induction. The superconductivity theory of the electronic tornado also uses the Qi induction, so the two are unified here. Why does the BCS theory fail to explain high temperature superconductivity?

Here is an image example, which will be understood immediately.

From the perspective of the space-time ladder theory, the breathing frequency and heartbeat frequency are two manifestations of the Qi induction. In a more essential sense, the two are the same, and both are the qi induction. This can be explained, that the BCS theory only regards lung breathing as the reason for the pairing of electrons, while ignoring the heartbeat is also the reason for the pairing.

Therefore, the Qi induction is more fundamental. In a sense, the transition from BCS theory to the electronic tornado theory is similar to the transition from breathing frequency to Qi induction . The BCS theory is not wrong, but limited. The electronic tornado theory is more general and can explain both the first type of superconductivity and the second type of superconductivity, or low temperature superconductivity and high temperature superconductivity.

The detailed calculation is as follows:

The frequency of crystal phonons is approximately:

$f_{\text{Phonon}} = 2.3THz = 2.3\times10^{12}\,Hz$[7]

The coherence length of the first type of superconductor, or low-temperature superconductor, is approximately:

$\xi = 1\times10^{-6}\,m$[3]

And the Qi induction corresponding to this length radius($R = 1X10^{-6}m$) is:

$$Q = \frac{v\sin\theta}{R} = 1.54710414\text{X}10^{12}\ /\ s$$

Compare phonon frequencies:

$f_{\text{Phonon}} = 2.3THz = 2.3\times10^{12}\,Hz$,

Found that the two are very close.

It can also be said that the phonon frequency of the BCS theory is approximately the same as the Qi induction in this case, or it is a coincidence.

Let's take a look at the situation of high-temperature superconductivity:

The coherence length of high temperature superconductor is approximately:

$\xi = 1\times10^{-9}\,m$[3]

And the Qi induction corresponding to this length radius ($R = 1X10^{-9}$) is:

$$Q = \frac{v\sin\theta}{R} = 1.54710414\text{X}10^{15}\ /\ s$$

Compare phonon frequencies:

$f_{\text{Phonon}} = 2.3THz = 2.3\times10^{12}\,Hz$,

The Qi induction is 1000 times greater, so at this time, the phonon frequency is insufficient.

It can be seen that, in fact, the real reason is that the Qi induction in the energy field is at work, while the effect of phonons is at low frequencies, or a coincidence.

6. A Simpler Explanation

From the perspective of the space-time ladder theory, since there is a space-time ladder, it is possible to make a space-time transition, which is similar to the quantum transition of electrons. Superconductivity means that under the action of cooling and pressurization, electromagnetic force space-time transitions to weak force space-time, and electrons become bosons, and electronic bosons produce Bose-Einstein condenses to form superconductivity. This is the simplest explanation of superconductivity.

7. Summary

Superconductivity was discovered in 1911. In 1957, Bardeen, Cooper, and Schriever put forward the BCS theory, and its microscopic mechanism got a satisfactory explanation. The BCS theory regards superconductivity as a macroscopic quantum effect. It proposes that electrons with opposite spin and momentum in metals can pair to form a so-called "Cooper pair", and the Cooper pair can move without loss in the crystal lattice to form a superconducting current.

The direct interaction between electrons is the Coulomb force that repels each other. If only the Coulomb force acts directly, electrons cannot form a pair. But there is also an indirect interaction between electrons that uses lattice vibration (phonons) as the medium: electrophonon interaction. This kind of interaction between electrons can be mutually attractive when certain conditions are met. It is this kind of attraction that causes the "Cooper pair"

 DOI: https://doi.org/10.30564/jcsr.v3i1.2780

to be produced. Roughly speaking, the mechanism is as follows: when electrons move in the lattice, they attract positive charges on adjacent lattice points, causing local distortion of the lattice points, forming a local high positive charge area. This localized highly positively charged region will attract electrons with opposite spins, and pair with the original electrons with a certain binding energy. At very low temperatures, this binding energy may be higher than the vibration energy of the lattice atoms. In this way, the electron pair will not exchange energy with the lattice, and there will be no resistance, forming the so-called "superconductivity".

The space-time ladder theory found through calculations that within the atomic radius, the Coulomb repulsion is the dominant force, but at the distance to the atomic radius, or greater than the atomic radius, the energy Qi field force has surpassed the Coulomb repulsion and dominates. This is similar to the energy Qi field force of the Milky Way: In the Milky Way, within a short distance from the center of the galaxy, Newtonian gravity plays a leading role, and within a long distance from the center of the galaxy, the energy Qi field force plays a leading role. The energy Qi field force is the reason for the electron pairing.

The basis of superconductivity is the energy Qi field, and the core is the electron pair-virtual space-time wave. Through the analysis of this article, it can be seen that dark matter and dark energy are the most difficult to understand. The dark matter is the energy Qi field, and the dark energy is the virtual space-time in the electron pair-virtual space-time wave. The most incomprehensible thing is the emission of dark energy, because this emission of dark energy is difficult to monitor. Only theoretical reasoning can know the emission of dark energy. Among them, the most useful is the calculation of the coherence coefficient. Although there are many superconducting factors, the coherence coefficient is the first because it is simple and easy to use, and you can try many combinations of superconducting materials in a short time. In addition, the Dispersion coefficient(emission coefficient) is very important. The superconducting critical temperature cannot reach room temperature, which means that the superconducting material emits too much dark energy. We hope that one day, room temperature superconducting sandwich materials can be prepared through ultra-high temperature and ultra-high pressure. Of course, the conditions for the formation of tornadoes can also be borrowed, because this is the most intuitive. It should be noted that the numerical setting in the coherence coefficient calculation formula is not unique. Although the current calculation can explain some superconductivity phenomena, it is certainly not the best. This needs to be continuously improved in practice.

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