

# How to Unify Euclidean Geometry, Lobachevsky Geometry and Riemannian Geometry? The Sum of a Class of Power Series, The Proof Of Landau-Siegel Zeros Conjecture, The Area Of A Circle Can't Be Equal To The Area Of The Square, The Proof Of The Poincare Conjecture In Euclidean Geometry, The Proof of Mersenne's prime conjecture , A New Working Principle of Controlled Nuclear Fusion, The Unification of Gravitation and Quantum Mechanics

LIAO TENG

*Tianzheng International Mathematical Research Institute, Xiamen, China*

**ABSTRACT:** In order to strictly prove the assumptions and conjectures in Riemann's 1859 paper on prime numbers not greater than  $x$  from a purely mathematical point of view, and in order to strictly prove the generalized assumptions and conjectures, this paper proves that the Landau-Siegel anomalous real zero does not exist unless the Dirichlet eigenfunction  $X(n)$  is equal to zero. It is proved that the Riemann hypothesis and the Riemann conjecture are completely correct, and the generalized Riemann hypothesis and the generalized Riemann conjecture are also completely valid. This paper also proves that it is impossible to reduce the area of a circle to the area of a square, proves Gauss's conjecture that the curvature of any point on a circle is zero with respect to its neighbors, and proves Poincare's conjecture in the two-dimensional sphere of Euclidean three-dimensional space.

**Key words:** *Euler's formula, Riemann  $\zeta(s)$  function, Riemann function  $\zeta(t)$ , Riemann hypothesis, Riemann conjecture, symmetric zeros, conjugate zeros, uniqueness, Landau-siegel anomalous real zeros, Dirichlet characteristic functions, curvature of curves, Euclidean plane, Poincare conjecture.*

## I. INTRODUCTION

The Riemann hypothesis and the Riemann conjecture is an important and famous mathematical problem left by Riemann in his paper "On the Number of primes not greater than  $x$ " [1], which is of great

significance to the study of the distribution of prime numbers and is known as the greatest unsolved mystery in mathematics. After many years of hard work, I solved this problem and strictly proved that the Riemann hypothesis and the Riemann conjecture, the generalized Riemann hypothesis and the generalized Riemann conjecture are completely valid, and that the Polignac conjecture, the twin prime conjecture and the Goldbach conjecture are completely correct. I show that the Landau-Siegel anomalous real zeros do not exist unless the Dirichlet eigenfunction  $X(n)$  is equal to zero. In my paper I show that in Euclidean plane geometry all points on a circle have zero curvature with respect to their adjacent points. In my paper, I also prove that it is impossible to reduce the area of a circle to the area of a square in Euclidean plane geometry, and prove that Poincare conjecture is valid in Euclidean three-dimensional space and two-dimensional surfaces.

## II. CONCLUSIONREASONING

We call series of numbers such as “ $1^k, 2^k, 3^k, \dots, n^k$  ( $n$  and  $k$  are natural numbers)” power series, as “ $1, 2, 3, \dots, n$ ”, “ $1^2, 2^2, 3^2, \dots, n^2$ ”, “ $1^3, 2^3, 3^3, \dots, n^3$ ”, “ $1^4, 2^4, 3^4, \dots, n^4$ ”, the following formulas are proved to be correct by mathematical induction:

$$1+2+3+4+\dots+n = \frac{n(n+1)}{2} = \frac{n^2+n}{2},$$

$$\sum \left( \frac{n^2}{2} + \frac{n}{2} \right) = \frac{1^2+2^2+3^2+\dots+n^2}{2} + \frac{1+2+3+4+\dots+n}{2} = \frac{1^2+2^2+3^2+\dots+n^2}{2} + \frac{n(n+1)}{4},$$

$$1^2+2^2+3^2+\dots+n^2 = \frac{n(n+1)(2n+1)}{6} = \frac{2n^3+3n^2+n}{6},$$

$$1^3+2^3+3^3+\dots+n^3 = \left[ \frac{n(n+1)}{2} \right]^2 = \frac{n^4+3n^2+n^2}{4},$$

$$1^4+2^4+3^4+\dots+n^4 = \frac{6n^5+15n^4+10n^3+3n^2-n}{30},$$

$$1^5+2^5+3^5+\dots+n^5 = \frac{2n^6+6n^5+5n^4-n^2}{12},$$

$$1^6+2^6+3^6+\dots+n^6 = \frac{6n^7+21n^6+21n^5-7n^3+n}{42},$$

$$1^7+2^7+3^7+\dots+n^7 = \frac{3n^8+12n^7+14n^6+7n^4+2n^2}{24},$$

$$1^8+2^8+3^8+\dots+n^8 = \frac{10n^9+45n^8+60n^7-42n^5+20n^3-3n}{90},$$

$$1^9+2^9+3^9+\dots+n^9 = \frac{2n^{10}+10n^9+15n^8-14n^6+10n^4-3n^2}{20},$$

$$1^{10}+2^{10}+3^{10}+\dots+n^{10} = \frac{6n^{11}+33n^{10}+55n^9-66n^7+66n^5-33n^3+5n}{66},$$

We call these formulas the first  $n$  terms and formulas of the power series, and the following introduces a derivation method with the 4th power list as an example.

Let's start with an expansion:

$$n(n+1)(n+2)(n+3) = n^4 + 6n^3 + 11n^2 + 6n, \text{ From this expansion we can get:}$$

$$n^4 = n(n+1)(n+2)(n+3) - 6n^3 - 11n^2 - 6n,$$

Take  $n=1$  and we multiply with the \* sign, then:

$$1^4 = 1*2*3*4 - 6 - 11 - 6,$$

If  $n=2$ , then:

$$2^4 = 2*3*4*5 - 6*2^3 - 11*2^2 - 6*2,$$

If  $n=3$ , then:

$$3^4 = 3*4*5*6 - 6*3^3 - 11*3^2 - 6*3,$$

...

$$n^4 = n(n+1)(n+2)(n+3) - 6n^3 - 11n^2 - 6n.$$

The two sides of these equations are added together, and the \* sign indicates multiplication:

$$1^4 + 2^4 + 3^4 + \dots + n^4 = [1*2*3*4 + 2*3*4*5 + 3*4*5*6 + \dots + n(n+1)(n+2)(n+3)] - 6*[1^3 + 2^3 + 3^3 + \dots + n^3] - 11*$$

$$[1^2 + 2^2 + 3^2 + \dots + n^2] - 6*[1 + 2 + 3 + 4 + \dots + n].$$

To calculate the value of  $1*2*3*4 + 2*3*4*5 + 3*4*5*6 + \dots + n(n+1)(n+2)(n+3)$  in parentheses, suppose  $n=100$ , to compute the value of  $1*2*3*4 + 2*3*4*5 + 3*4*5*6 + \dots + 100*101*102*103$ , obviously if it's hard to compute directly, Its value consists of 300 multiplications plus 100 summations, we might as well put  $1*2*3*4 + 2*3*4*5 + 3*4*5*6 + \dots + 100*101*102*103$  multiply the terms of by 5, and you get  $1*2*3*4*5 + 2*3*4*5*5 + 3*4*5*6*5 + \dots + 100*101*102*103*5$ , so add the first two terms together and you get  $2*3*4*5*6$ , then add the third term  $3*4*5*6*5$  and you get  $3*4*5*6*7$ , then add the fourth term  $4*5*6*7*5$ ,

and you get  $4*5*6*7*8$ , then add the fifth term  $5*6*7*8*5$ , and you get  $5*6*7*8*9$ , ... and so on, the second-to-last term is  $99*100*101*102*5$ , add to the second-to-last term  $99*100*101*102*5$ , and the sum after that is  $99*100*101*102*5 + 98$ , that's  $99*100*101*102*103$ , add the last item  $100*101*102*103*5$  to get  $100*101*102*103*$

$(5+99)$ , which is  $100*101*102*103*104$ ,

$$\text{so } 1*2*3*4 + 2*3*4*5 + 3*4*5*6 + \dots + 100*101*102*103 = \frac{1}{5}(100*101*102*103*104),$$

guess:  $1*2*3*4 + 2*3*4*5 + 3*4*5*6 + \dots + 100*101*102*103 + \dots + n*(n+1)(n+2)(n+3) = \frac{1}{5}n*(n+1)(n+2)(n+3)*(n+4)$ ,

$$\text{then } 1^4 + 2^4 + 3^4 + \dots + n^4 = [1*2*3*4 + 2*3*4*5 + 3*4*5*6 + \dots + n(n+1)(n+2)(n+3)]$$

$$- 6*[1^3 + 2^3 + 3^3 + \dots + n^3] - 11*[1^2 + 2^2 + 3^2 + \dots + n^2] - 6*[1 + 2 + 3 + 4 + \dots + n],$$

$$\text{so } 1^4 + 2^4 + 3^4 + \dots + n^4 = \frac{6n^5 + 15n^4 + 10n^3 - n}{30}.$$

The correctness of this formula can be proved by mathematical induction as follows:

If  $n=1$ , then  $(6+15+10-1)/30=1$ , the formula is obviously true, and the formula is also true if  $n=k$ , then

$$1^4 + 2^4 + 3^4 + \dots + k^4 = \frac{6k^5 + 15k^4 + 10k^3 - k}{30}, \text{ then}$$

when  $n=k+1$ ,

$$1^4+2^4+3^4+\dots+k^4+(k+1)^4=\frac{6k^5+15k^4+10k^3-k}{30}+(k+1)^4=\frac{6k^5+15k^4+120k^3+15k^2+119k+30}{30}, \text{ and}$$

$$\frac{6(k+1)^5+15(k+1)^4+10(k+1)^3-(k+1)}{30}=\frac{6k^5+15k^4+120k^3+15k^2+119k+30}{30},$$

$$\text{so } \frac{6k^5+15k^4+10k^3-k}{30}+(k+1)^4=\frac{6(k+1)^5+15(k+1)^4+10(k+1)^3-(k+1)}{30}.$$

This proves that the formula also works when  $n=k+1$ . Through the above proof we can know

$n$  take any natural number, the formula  $1^4+2^4+3^4+\dots+n^4=\frac{6n^5+15n^4+10n^3-n}{30}$  is true.

A similar method can be used to derive the summation formula of 5 to 10 power series and the summation formula of 11 to 11 power series, and can also be proved by referring to the above method.

For any complex number  $s$ , when  $\chi(n)$  is the Dirichlet characteristic and satisfies the following properties:

1: There exists a positive integer  $q$  such that  $\chi(n+q)=\chi(n)(n \in \mathbb{Z}_+)$ ;

2: when  $n$  and  $q$  are not mutual prime,  $\chi(n)=0(n \in \mathbb{Z}_+)$ ;

3:  $\chi(a)\chi(b)=\chi(ab)$  ( $a \in \mathbb{Z}_+, b \in \mathbb{Z}_+$ ) for any integer  $a$  and  $b$ ;

Suppose  $q=2k(k \in \mathbb{Z}_+)$ ,

if  $n$  and  $n+q$  are all prime number, and if  $\chi(Y)=1$  ( $Y$  traverses all positive odd numbers) or if  $\chi(Y) \neq 0$  ( $Y$  traverses all positive odd numbers),

then  $\chi(n+q)=\chi(n)=\chi(p) \equiv 1$  ( $n, n+q$ , and  $p$  go through all the prime numbers),

or  $\chi(n+q)=\chi(n)=\chi(p) \neq 0$  ( $n, n+q$ , and  $p$  go through all the prime numbers), because  $n$  ( $n$  traverses all prime numbers) and  $q=2k$  ( $k \in \mathbb{Z}_+$ ) are not mutual prime, then  $\chi(n)=0$  ( $n \in \mathbb{Z}_+$ ), and for any prime number  $a$  and  $b$ ,

$\chi(a)*\chi(b)=\chi(a*b)$  ( $a \in \mathbb{Z}_+, b \in \mathbb{Z}_+, a$  and  $b$  are all prime number,  $*$  for multiplication),

then the three properties described by the Dirichlet eigenfunction  $\chi(n)$  above fit the definition of the Polignac conjecture, the Polignac conjecture states that for all natural numbers  $k$ , there are infinitely many pairs of prime numbers  $(p, p+2k)$  ( $k \in \mathbb{Z}_+$ ). In 1849, the French mathematician A. Polignac proposed the conjecture. When  $k=1$ , the Polignac conjecture is equivalent to the twin prime conjecture. In other words, when  $L(s, \chi(n))=0$  ( $n \in \mathbb{Z}_+, p \in \mathbb{Z}_+, s \in \mathbb{C}$ ,  $n$  goes through all the natural numbers,  $p$  goes through all the prime numbers,  $\chi(n) \in \mathbb{R}$

$\wedge (\chi(n) \neq 0), a(n) = a(p) = \chi(n), P(p, s) = \frac{1}{1-a(p)p^{-s}}$ ), and generalized Riemann hypothesis and the

generalized Riemann conjecture are true, then the Polignac conjecture must be completely true, and if the Polignac conjecture must be true, then the twin prime conjecture and Goldbach's conjecture must be true. I proved that the generalized Riemannian hypothesis and the generalized Riemannian conjecture are true, so

when  $L(s, \chi(n))=0$  ( $n \in \mathbb{Z}_+, p \in \mathbb{Z}_+, s \in \mathbb{C}$ ,  $n$  goes through all the natural numbers,  $p$  goes through all the

prime numbers,  $\chi(n) \in \mathbb{R} \wedge (\chi(n) \neq 0), a(n) = a(p) = \chi(n), P(p, s) = \frac{1}{1-a(p)p^{-s}}$  and  $s = \frac{1}{2} + ti$  ( $t \in$

$\mathbb{R}$  and  $t \neq 0, s \in \mathbb{C}$ ), I also proved that the Polignac conjecture, twin prime conjecture must be true and Goldbach conjecture are completely or almost true. The Generalized Riemann hypothesis and the Riemann conjecture are perfectly valid, so the Polignac conjecture and the twin prime conjecture and Goldbach's conjecture must satisfy the properties of the Generalized Riemann  $\zeta(s)$  function and the Riemann  $\zeta(s)$  function, so the Polignac conjecture, twin prime conjecture must be true and Goldbach conjecture is completely true. Riemann hypothesis and the Riemann conjecture are completely correct and the Generalized Riemann hypothesis and the

Generalized Riemann conjecture are completely correct and the Polignac conjecture,twin prime conjecture must be true and Goldbach conjecture are almost or completely true.

In order to explain why the zero of the Landau-Siegel function exists under special conditions,we need to start with the Riemann conjecture. I have solved the Riemann conjecture for the Dirichlet feature  $\chi(n)=1$ (n traverses all natural numbers) and the generalized Riemann conjecture for the Dirichlet feature  $\chi(n)\neq 0$ (n traverses all natural numbers), Now I propose a special form of Dirichlet  $L(s,\chi(p))(s\in\mathbb{C}, X(p)\in\mathbb{R}$  and  $X(p)=0,p$  traverses all odd primes,including 1) function problem. Let me first explain to you what Landau-Siegel zero conjecture is. As you may know, the Landau-Siegel zero point problem, named after Landau and his student Siegel, boils down to solving whether there are abnormal real zeros in the Dirichlet L function. So let's look again at what the Dirichlet L function is. Look at the following picture, which is the expression of Dirichlet  $L(s,\chi(n))(s\in\mathbb{C},n$  traverses all natural numbers), which I call picture 1

(all the images below are from a paper I published in the journal AJMRD, Please visit <https://www.ajmrd.com/vol-5-issue-4> or

<https://www.ajmrd.com/wp-content/uploads/2024/06/D542246.pdf>):

$$L(s, \chi) = \sum_{n=1}^{\infty} \frac{\chi(n)}{n^s}$$

I shall first introduce the Dirichlet  $L(s,X(n))(s\in\mathbb{C},n$  traverses all natural numbers) function and explain its relation to the Riemann  $\zeta(s)(s\in\mathbb{C})$  function. Here,  $\chi(n)$ (n traverses all natural numbers) is a characteristic value of a Dirichlet function, which is all real numbers, and  $\chi(n)$ (n traverses all natural numbers) is a real function. The  $L(s,\chi(n))(s\in\mathbb{C},X(n)\in\mathbb{R}$ , n traverses all natural numbers) function can be analytically extended as a meromorphic function over the entire complex plane. John Peter Dirichlet proved that  $L(1,X(n))\neq 0(s\in\mathbb{C},X(n)\in\mathbb{R}$  and  $X(n)\neq 0,n$  takes all natural numbers) for all  $\chi(n)$ (n traverses all natural numbers), and thus proved Dirichlet's theorem. In number theory, Dirichlet's theorem states that for any positive integers a,d, there are infinitely many forms of prime numbers, such as  $a+nd$ , where n is a positive integer, i.e., in the arithmetic sequence  $a+d,a+2d,a+3d,\dots$  There are an infinite number of prime numbers-there are an infinite number of prime modules d as well as a . If  $X(n)$ (n traverses all natural numbers) is the main feature, then  $L(s, \chi(n))(s\in\mathbb{C},X(n)\in\mathbb{R},n$  traverses all natural numbers) has a unipolar point at  $s=1$ . Dirichlet defined the properties of the characteristic function  $X(n)$ (n is a positive integer) in the Dirichlet function  $L(s,X(n))(s\in\mathbb{C}, X(n)\in\mathbb{R},n$  traverses all natural numbers) :

- 1: There is a positive integer q such that  $X(n+q)=X(n)$ (n traverses all natural numbers);
- 2: when  $n$ (n traverses all natural numbers) and q are non-mutual primes,  $X(n)=0$ (n traverses all natural numbers);
- 3: For any integer a and b,  $X(a)*X(b)=X(a*b)$ (a is a positive integer, b is a positive integer, \* for multiplication);

From the expression of the Dirichlet function  $L(s, X(n)) (s \in \mathbb{C}, X(n) \in \mathbb{R}, n \text{ takes all natural numbers})$  in Figure 1 above, it is easy to see that when the Dirichlet characteristic real function  $X(n)=1 (s \in \mathbb{C}, n \text{ takes all natural numbers})$ , Then the Dirichlet  $L(s, 1) (s \in \mathbb{C}, X(n) \in \mathbb{R}, n \text{ traverses all natural numbers})$  becomes the Riemann  $\zeta(s) (s \in \mathbb{C})$  function, so the Riemann  $\zeta(s) (s \in \mathbb{C})$  function is a special function of the Dirichlet function  $L(s, X(n)) (s \in \mathbb{C}, X(n) \in \mathbb{R}, n \text{ traversing all natural numbers})$ , when the characteristic real function  $X(n) (n \text{ is a positive integer})$  is equal to 1, Also called a trivial characteristic function of the Dirichlet function  $L(s, X(n)) (s \in \mathbb{C}, X(n) \in \mathbb{R}, n \text{ traverses all natural numbers})$ . When the eigenreal functions  $X(n) \neq 1$ , they are called

nontrivial eigenfunctions of the Dirichlet function  $L(s, X(n)) (s \in \mathbb{C}, X(n) \in \mathbb{R}, n \text{ traverses all natural numbers})$ .

When the independent variable  $s$  in the expression of the Dirichlet function  $L(s, X(n)) (s \in \mathbb{C}, X(n) \in \mathbb{R}, n \text{ traverses all natural numbers})$  is a real number  $\beta$ , then for all eigenfunction values  $X(n) (n \text{ traverses all natural numbers})$ ,  $L(\beta, X(n)) (\beta \text{ is real}, X(n) \in \mathbb{R}, n \text{ traverses all natural numbers})$  is called the Landau-Siegel function. Visible landau - siegel function  $L(\beta, X(n)) (\beta \in \mathbb{R}, X(n) \in \mathbb{R}, n \text{ traverses all natural numbers})$  is dirichlet function  $L(s, X(n)) (s \in \mathbb{C},$

$X(n) \in \mathbb{R}, n \text{ traverses all natural numbers})$  of a special function, landau - siegel guess is landau and siegel they guess  $L(\beta, X(n)) (\beta \in \mathbb{R}, X(n) \in \mathbb{R}, n \text{ traverses all natural numbers})$  is not zero, So Landau and Siegel's conjecture that  $L(\beta, X(n)) \neq 0 (\beta \in \mathbb{R}, X(n) \in \mathbb{R}, n \text{ traverses all natural numbers})$  is easy to understand, right? Well, now that you know what the Landau and Siegel null conjecture is all about, let's continue to see how I'm going to solve the Landau and Siegel null conjecture. Look at the following picture, which I'll call Picture 2, many of these images are screenshots from the previous proof process.

$$\begin{aligned} \text{GRH}(s, X(n)) &= L(s, X(n)) = \sum_1^\infty \frac{X(n)}{x^s} = \frac{X(n)\eta(s)}{(1-2^{1-s})} = \frac{X(n)}{(1-2^{1-s})} \sum_1^\infty \frac{(-1)^{n-1}}{x^s} = \\ &= \frac{X(n)}{(1-2^{1-s})} \sum_1^\infty \frac{(-1)^{n-1}}{x^p + y^i} = \frac{(-1)^{n-1}}{(1-2^{1-s})} \sum_1^\infty X(n) \left( \frac{1}{x^p} * \frac{1}{y^i} \right) = \\ &= \frac{(-1)^{n-1}}{(1-2^{1-s})} \sum_1^\infty X(n) (x^{-p}) \frac{1}{(\cos(\ln x) + i \sin(\ln x))^y} = \frac{(-1)^{n-1}}{(1-2^{1-s})} \sum_1^\infty X(n) (x^{-p} (\cos(\ln x) + \\ & i \sin(\ln x))^{-y}) = \\ &= \sum_1^\infty X(n) (x^{-p} (\cos(y \ln x) - \\ & i \sin(y \ln x)) (x \text{ goes through all positive integers}, n \text{ goes through all positive integers} ) \end{aligned}$$

Let's look at the formula in the figure above, in figure 2 above,  $L(s, X(n)) (s \in \mathbb{C}, X(n) \in \mathbb{R}, n \text{ traverses for all natural Number})$  is the part that draws the red bottom line, what is  $\eta(s)$ ? Look at the following picture, which I'll call picture 3:

For any complex number  $s$ , when  $\text{Re}(s) > 0 \wedge (s \neq 1)$ , then according to Dirichlet function

$$\eta(s) = \sum_1^\infty \frac{(-1)^{n-1}}{n^s} \quad (s \in \mathbb{C} \text{ and } \text{Re}(s) > 0 \wedge (s \neq 1)) \quad \text{and } \eta(s) = (1 - 2^{1-s}) \zeta(s) \quad (s \in \mathbb{C} \text{ and } \text{Re}(s) > 0 \wedge s \neq 1)$$

1,  $\zeta(s)$  is the Riemann Zeta function, so Riemann  $\zeta(s) = \frac{\eta(s)}{(1-2^{1-s})} = \frac{1}{(1-2^{1-s})} \sum_1^\infty \frac{(-1)^{n-1}}{n^s} =$

$$\frac{(-1)^{n-1}}{(1-2^{1-s})} \prod_p (1 - p^{-s})^{-1} \quad (s \in \mathbb{C} \text{ and } \text{Re}(s) > 0 \wedge (s \neq 1), n \in \mathbb{Z}_+, p \in \mathbb{Z}_+, s \in \mathbb{C}, n \text{ goes through all the natural numbers}, p \text{ goes through all the prime numbers}).$$

Let's prove that  $\zeta(s)$  and  $\zeta(\bar{s})$  are complex conjugations of each other.

Picture in picture above 3 is that part of the content about the  $\eta(s)(s \in \mathbb{C})$  function definition and  $\eta(s)(s \in \mathbb{C})$  function and Riemann  $\zeta(s)(s \in \mathbb{C})$  function expression of the relationship, apparently  $L(s, X(n))(s \in \mathbb{C}, X(n) \in \mathbb{R}, n$  traverses all natural numbers). It is easy to see that the Dirichlet function  $L(s, X(n))(s \in \mathbb{C}, X(n) \in \mathbb{R}, n$  traverses all natural numbers) is a summation function, just like the Riemann  $\zeta(s)(s \in \mathbb{C})$  function. I defined  $s = \rho + yi$  ( $\rho \in \mathbb{R}, y \in \mathbb{R}$  and  $y \neq 0, s \in \mathbb{C}$ ), the Landau-Siegel function  $L(\beta, X(n))(\beta \in \mathbb{R}, X(n) \in \mathbb{R}, n$  traverses all natural numbers) is equivalent to let me define  $s = \beta + 0i$  ( $\beta \in \mathbb{R}$ ), that is, let  $y = 0$ , then the contents of Picture 2 become the contents of picture 4 below:

$$\begin{aligned}
 L(s, X(n)) &= \sum_{n=1}^{\infty} \frac{X(n)}{x^s} = \frac{X(n)\eta(s)}{(1-2^{1-s})} = \frac{X(n)}{(1-2^{1-s})} \sum_{n=1}^{\infty} \frac{(-1)^{n-1}}{x^s} = \frac{X(n)}{(1-2^{1-s})} \sum_{n=1}^{\infty} \frac{(-1)^{n-1}}{x^{\rho+yi}} = \\
 &= \frac{(-1)^{n-1}}{(1-2^{1-s})} \sum_{n=1}^{\infty} X(n) \left( \frac{1}{x^\rho} + \frac{1}{x^{yi}} \right) = \frac{(-1)^{n-1}}{(1-2^{1-s})} \sum_{n=1}^{\infty} X(n) x^{-\rho} \frac{1}{(\cos(\ln x) + i \sin(\ln x))^y} = \\
 &= \frac{1}{(1-2^{1-s})} \sum_{n=1}^{\infty} X(n) x^{-\rho} (\cos(y \ln x) - i \sin(y \ln x)) = \\
 &= \left( \frac{1}{(1-2^{1-s})} \sum_{n=1}^{\infty} X(n) x^{-\rho} (\cos(0 \cdot \ln x) - i \sin(0 \cdot \ln x)) \right) = \\
 &= \frac{1}{(1-2^{1-\beta})} \sum_{n=1}^{\infty} (X(1)1^{-\beta} + X(2)2^{-\beta} + X(3)3^{-\beta} + \dots + X(n-1)(n-1)^{-\beta} + \\
 &X(n)(n)^{-\beta} \text{ ( } x \text{ goes through all positive integers, } n \text{ goes through all positive integers,} \\
 &\text{for multiplication) ,}
 \end{aligned}$$

Obviously, when  $X(n)=1$  ( $n$  traverses all natural numbers), because the real exponential function of the real number has a function value greater than zero, so  $n^{-\beta} > 0$  ( $n$  traverses all natural numbers) and  $\left| \frac{1}{(1-2^{1-\beta})} \right| \neq 0$ , it can be known that when  $X(n)=1$  ( $n$  traverses all natural numbers), then  $L(\beta, 1) \neq 0$  ( $\beta \in \mathbb{R}, X(n) \in \mathbb{R}$  and  $X(n)=1, n$  traverses all natural numbers) so for Riemann  $\zeta(s)(s \in \mathbb{C})$  functions, its corresponding landau-siegel function  $L(\beta, 1)(\beta \in \mathbb{R}, X(n) \in \mathbb{R}$  and  $X(n)=1, n$  traverses all natural numbers) of pure real zero does not exist, This means that the Riemann  $\zeta(s)(s \in \mathbb{C})$  function does not have a zero of a pure real variable  $s$ . Look at the content of picture 5 below:

$$\begin{aligned}
 L(\beta, X(n)) &= \\
 &= \frac{1}{(1-2^{1-\beta})} \sum_{n=1}^{\infty} X(n) x^{-\beta} (\cos(y \ln x) - i \sin(y \ln x)) = \\
 &= \left( \frac{1}{(1-2^{1-\beta})} \sum_{n=1}^{\infty} X(n) x^{-\beta} (\cos(0 \cdot \ln x) - i \sin(0 \cdot \ln x)) \right) = \\
 &= \frac{1}{(1-2^{1-\beta})} \sum_{n=1}^{\infty} (X(1)1^{-\beta} + X(2)2^{-\beta} + X(3)3^{-\beta} + \dots + X(n-1)(n-1)^{-\beta} + \\
 &X(n)(n)^{-\beta} \text{ ( } x \text{ goes through all positive integers, } n \text{ goes through all positive integers,} \\
 &\text{for multiplication) ,}
 \end{aligned}$$

Obviously, when  $X(n) \neq 0$  ( $n$  traversing all natural numbers), because the function value of the real exponential function of the real number is greater than zero,  $n^{-\beta} > 0$  ( $n$  traverses all natural numbers) and  $\left| \frac{1}{(1-2^{1-\beta})} \right| \neq 0$ , it can be known that when  $X(n) \neq 0$  ( $n$  traversing all positive integers), then  $L(\beta, X(n)) \neq 0$  ( $\beta \in \mathbb{R}, X(n) \in \mathbb{R}$  and  $X(n) \neq 0, n$  traverses all natural numbers), so for the dirichlet function  $L(s, X(n))=0$  ( $s \in \mathbb{C}, X(n) \in \mathbb{R}$  and  $X(n) \neq 0, n$  traverses all natural numbers) is true, Its corresponding landau-siegel function  $L(\beta, X(n))$  ( $\beta \in \mathbb{R}, X(n) \in \mathbb{R}$  and  $X(n) \neq 0, n$  traverses all natural numbers) of pure real zero does not exist, This means that the

Dirichlet function  $L(s, X(n))$  ( $s \in \mathbb{C}, X(n) \in \mathbb{R}$  and  $X(n) \neq 0$ ,  $n$  traverses all positive integers) does not exist zero for which the variable  $s$  is a pure real number.

Now I summarize the Dirichlet function  $L(s, X(n))$  ( $s \in \mathbb{C}, X(n) \in \mathbb{R}$ ,  $n$  traverses all positive integers) as follows:

1: When  $X(n)=1$  ( $n$  traverses all positive integers), the generalized Riemannian hypothesis and the generalized Riemannian conjecture degenerate to the ordinary Riemannian hypothesis and the ordinary Riemannian

conjecture, whose nontrivial zeros  $s$  satisfy  $s = \frac{1}{2} + ti$  ( $t \in \mathbb{R}$  and  $t \neq 0$ ), and ordinary Riemann

$\zeta(s) = L(s, X(n))$  ( $s \in \mathbb{C}, X(n) \in \mathbb{R}$  and  $X(n)=1, n$  traverses all natural numbers) the corresponding Landau-siegel function  $L(\beta, 1) \neq 0$  ( $\beta \in \mathbb{R}, X(n) \in \mathbb{R}$  and  $X(n)=1, n$  traverses all natural numbers), ordinary Riemann hypothesis and ordinary Riemann hypothesis all hold, and for Riemann  $\zeta(s)$  ( $s \in \mathbb{C}$ ) function, its corresponding Landau-Siegel function  $L(\beta, 1)$  ( $\beta \in \mathbb{R}, X(n) \in \mathbb{R}$  and  $X(n)=1, n$  traverses all natural numbers) does not exist pure real zero, which also shows that Riemann  $\zeta(s)$  ( $s \in \mathbb{C}$ ) function does not exist zero when variable  $s$  is a pure real zero.

2: when the  $X(n) \neq 0$  ( $n$  traverses all natural numbers), Dirichlet function  $L(s, X(n))$  ( $s \in \mathbb{C}, X(n) \in \mathbb{R}$  and  $X(n) \neq 0, n$  traverses all natural numbers) has zero, its nontrivial zero meet  $s = \frac{1}{2} + ti$  ( $t \in \mathbb{R}$  and  $t \neq 0$ ). For dirichlet function

$L(s, X(n))$  ( $s \in \mathbb{C}, X(n) \in \mathbb{R}$  and  $X(n) \neq 0, n$  traverses all positive integers), its corresponding Landau-siegel function  $L(\beta, X(n))$  ( $\beta \in \mathbb{R}, X(n) \in \mathbb{R}$  and  $X(n) \neq 0, n$  traverses all natural numbers) of pure real zero does not exist, In other words, it shows that the Dirichlet function  $L(s, X(n))$  ( $s \in \mathbb{C}, X(n) \in \mathbb{R}$  and  $X(n) \neq 0, n$  traverses all natural numbers) does not exist for the zero of a pure real variable  $s$ , so if  $X(n) \neq 0$  ( $n$  traverses all natural numbers), then both the generalized Riemannian hypothesis and the generalized Riemannian conjecture hold and the Generalized Riemann  $L(s, X(n))$  ( $s \in \mathbb{C}, X(n) \in \mathbb{R}$  and  $X(n) \neq 0, n$  traverses all positive integers) function of nontrivial zero  $s$  also

meet  $s = \frac{1}{2} + ti$  ( $t \in \mathbb{R}$  and  $t \neq 0$ ). Now we know that merely proving that the nontrivial zero  $s$  of the Riemann

conjecture  $L(s, 1)$  ( $s \in \mathbb{C}, x(n) \in \mathbb{R}$  and  $x(n)=1, n$  traverses all natural numbers) and the generalized Riemann

conjecture  $L(s, X(n))$  ( $s \in \mathbb{C}, X(n) \in \mathbb{R}$  and  $X(n) \neq 0, n$  traverses all natural numbers) satisfies  $s = \frac{1}{2} + ti$  ( $t \in \mathbb{R}, t \neq 0$ ) is

sufficient to prove that the twin primes, Polignac's conjecture, Goldbach's conjecture are all true.  $L(s, x(p)) = 0$  ( $s \in \mathbb{C}, x(p) \in \mathbb{R}$  and  $x(p)=1, p$  traverses all odd primes, including 1) and the generalized Riemann conjecture  $L(s, X(p)) = 0$  ( $s \in \mathbb{C}, X(p) \in \mathbb{R}$  and  $X(p) \neq 0, p$  traverses all odd primes, including 1) prove that the twin primes, Polignac's conjecture, Goldbach's conjecture are all true. When  $L(s, x(p)) = 0$  ( $s \in \mathbb{C}, x(p) \in \mathbb{R}$  and  $x(p)=1, p$  traverses all odd primes, including 1) and the generalized Riemann conjecture  $L(s, X(p)) = 0$  ( $s \in \mathbb{C}, X(p) \in \mathbb{R}$  and

$X(p) \neq 0, p$  traverses all odd primes, including 1), then  $s = \frac{1}{2} + ti$  ( $t \in \mathbb{R}, t \neq 0$ ).

Because when  $X(p) \equiv 0$  ( $p$  traverses all odd primes, including 1), then  $L(s, X(p)) = 0$  ( $s \in \mathbb{C}, X(n) \in \mathbb{R}$  and  $X(p) \equiv 0, p$  traverses all odd primes, including 1) was established. At the same time  $L(s, X(p))$  ( $s \in \mathbb{C}, X(p) \in \mathbb{R}$  and  $X(p) \equiv 0, p$  traverses all odd primes, including 1) the corresponding landau-siegel function  $L(\beta, 0)$  ( $\beta \in \mathbb{R}, X(p) \in \mathbb{R}$  and  $X(p) = 0, p$  traverses all odd primes, including 1) expression as shown in picture 7 as follows:



$$\begin{aligned} L(\beta, X(p)) &= \sum_{p=1}^{\infty} X(p) x^{-p} (\cos(y \ln x) - i \sin(y \ln x)) = \sum_{p=1}^{\infty} X(p) p^{-\beta} (\cos(y * \\ \ln p) - i \sin(y * \ln p)) &= \sum_{p=1}^{\infty} X(p) p^{-\beta} (\cos(0 * \ln p) - i \sin(0 * \ln p)) = \\ \sum_{p=1}^{\infty} X(p) p^{-\beta} &= X(p) \sum_{p=1}^{\infty} p^{-\beta} = X(p) (1^{-\beta} + 3^{-\beta} + 5^{-\beta} + \dots + (p)^{-\beta} + \dots) \quad (\beta \in \\ \mathbb{R}, p \in \mathbb{Z}_+, x \text{ and } p \text{ traverse all odd primes, including } 1), \end{aligned}$$

According to the red bottom line in Picture 7 above, we already know that since  $X(p) \equiv 0$  ( $p$  traverses all odd primes, including 1), it is obvious that  $L(\beta, 0) = 0$  ( $\beta \in \mathbb{R}$ ) holds. The characteristic function  $X(p)$  in this special Dirichlet function  $L(s, X(p))$  ( $s \in \mathbb{C}, X(p) \in \mathbb{R}$  and  $X(p) \equiv 0$ ,  $p$  traverses all odd primes, including 1) has the following properties:

- 1: There is a positive integer  $q=2k$  ( $k$  traverses all positive integers) such that  $X(p+q) = X(p) \equiv 0$  ( $k$  traverses all positive integers,  $p$  traverses all odd numbers, including 1);
- 2: when  $n$  ( $n$  traverses all odd numbers) and  $q$  are non-mutual primes,  $X(n) = 0$  ( $n$  traverses all odd numbers);
- 3: For any odd prime number  $a$  and any odd prime number  $b$ ,  $X(a) * X(b) = X(a*b)$  ( $a$  is any odd prime number including 1 and  $b$  is any odd prime number including 1,  $*$  means multiply);

From the above three properties, and from the fact that  $L(\beta, 0) = 0$  ( $\beta \in \mathbb{R}, X(p) \in \mathbb{R}$  and  $X(p) \equiv 0$ ,  $p$  traverses all odd primes, including 1), it is obvious that we know that twin primes, Polignac's conjecture and Goldbach's conjecture all hold.

Now I summarize the Dirichlet function  $L(s, X(n))$  ( $s \in \mathbb{C}, X(n) \in \mathbb{R}$ ,  $n$  traverses all positive integers) as follows:

- 1: When  $X(n) = 1$  ( $n$  traverses all positive integers), the generalized Riemannian hypothesis and the generalized Riemannian conjecture degenerate to the ordinary Riemannian hypothesis and the ordinary Riemannian conjecture, whose nontrivial zeros  $s$  satisfy  $s = \frac{1}{2} + it$  ( $t \in \mathbb{R}$  and  $t \neq 0$ ), and ordinary Riemann  $\zeta(s) = L(s, X(n))$  ( $s \in \mathbb{C}, X(n) \in \mathbb{R}$  and  $X(n) = 1$ ,  $n$  traverses all natural numbers) the corresponding Landau-siegel function  $L(\beta, 1) \neq 0$  ( $\beta \in \mathbb{R}, X(n) \in \mathbb{R}$  and  $X(n) = 1$ ,  $n$  traverses all natural numbers), ordinary Riemann hypothesis and ordinary Riemann hypothesis all hold, and for Riemann  $\zeta(s)$  ( $s \in \mathbb{C}$ ) function, its corresponding Landau-Siegel function  $L(\beta, 1)$  ( $\beta \in \mathbb{R}, X(n) \in \mathbb{R}$  and  $X(n) = 1$ ,  $n$  traverses all natural numbers) does not exist pure real zero, which also shows that Riemann  $\zeta(s)$  ( $s \in \mathbb{C}$ ) function does not exist zero when variable  $s$  is a pure real zero.
- 2: When  $X(n) \equiv 0$  ( $n$  traverses all positive odd numbers, including 1), then  $X(p) \equiv 0$  ( $p$  traverses all odd primes, including 1), a special Dirichlet function  $L(s, X(p))$  ( $s \in \mathbb{C}, X(p) \in \mathbb{R}$  and  $X(p) \equiv 0$ ,  $p$  traverses all odd primes, including 1) has zero, and when zero is obtained, the independent variable  $s$  is any complex number. This special Dirichlet function  $L(s, X(p))$  ( $s \in \mathbb{C}, X(p) \in \mathbb{R}$  and  $X(p) \equiv 0$ ,  $p$  traverses all odd prime, including 1) the corresponding Landau - siegel function  $L(\beta, 0) = 0$  ( $\beta \in \mathbb{R}, X(p) \in \mathbb{R}$  and  $X(p) \equiv 0$ ,  $p$  traverses all odd prime, including 1) holds, so for this particular Dirichlet function  $L(s, X(p)) = 0$  ( $s \in \mathbb{C}, X(p) \in \mathbb{R}$  and  $X(p) \equiv 0$ ,  $p$  traverses all odd primes, including 1) holds. The existence of a pure real zero of the corresponding Landau-Siegel function  $L(\beta, 0)$  ( $\beta \in \mathbb{R}, X(p) \in \mathbb{R}$  and  $X(p) \equiv 0$ ,  $p$  traverses all odd prime numbers, including 1) shows that the twin prime numbers, Polignac conjecture and Goldbach conjecture are all true.

3: when the  $X(n) \neq 0$  ( $n$  traverses all natural numbers), Dirichlet function  $L(s, X(n))$  ( $s \in \mathbb{C}, X(n) \in \mathbb{R}$  and  $X(n) \neq 0, n$  traverses all natural numbers) has zero, it's nontrivial zero meet  $s = \frac{1}{2} + ti$  ( $t \in \mathbb{R}$  and  $t \neq 0$ ). For Dirichlet function  $L(s, X(n))$  ( $s \in \mathbb{C}, X(n) \in \mathbb{R}$  and  $X(n) \neq 0, n$  traverses all positive integers), it's corresponding Landau-Siegel function  $L(\beta, X(n))$  ( $\beta \in \mathbb{R}, X(n) \in \mathbb{R}$  and  $X(n) \neq 0, n$  traverses all natural numbers) of pure real zero does not exist. In other words, it shows that the Dirichlet function  $L(s, X(p))$  ( $s \in \mathbb{C}, X(p) \in \mathbb{R}$  and  $X(p) \neq 0, p$  traverses all natural numbers) does not exist for the zero of a pure real variable  $s$ , so if  $X(n) \neq 0$  ( $n$  traverses all natural numbers), then both the generalized Riemannian hypothesis and the generalized Riemannian conjecture hold and the Generalized Riemann  $L(s, X(n))$  ( $s \in \mathbb{C}, X(n) \in \mathbb{R}$  and  $X(n) \neq 0, n$  traverses all positive integers) function of nontrivial zero  $s$  also meet  $s = \frac{1}{2} + ti$  ( $t \in \mathbb{R}$  and  $t \neq 0$ ). Now we know that merely proving that the nontrivial zero  $s$  of the Riemann conjecture  $L(s, 1)$  ( $s \in \mathbb{C}, x(n) \in \mathbb{R}$  and  $x(n) = 1, n$  traverses all natural numbers) and the generalized Riemann conjecture  $L(s, X(n))$  ( $s \in \mathbb{C}, X(n) \in \mathbb{R}$  and  $X(n) \neq 0, n$  traverses all natural numbers) satisfies  $s = \frac{1}{2} + ti$  ( $t \in \mathbb{R}, t \neq 0$ ) is sufficient to prove that the twin primes, Polignac's conjecture, Goldbach's conjecture are all true. It is also proved that a special class of generalized Riemann hypothesis  $L(s, X(p))$  ( $s \in \mathbb{C}, X(p) \in \mathbb{R}$  and  $X(p) \neq 0, p$  traverses all odd prime numbers, including 1) exists corresponding Landau-Siegel functions  $L(\beta, X(p)) = 0$  ( $s \in \mathbb{C}, X(p) \in \mathbb{R}$  and  $X(p) \neq 0, p$  traverses all odd prime numbers, including 1) is equal to prove that twin prime numbers, Polignac conjecture, Goldbach conjecture are all true.  $L(s, x(p)) = 0$  ( $s \in \mathbb{C}, x(p) \in \mathbb{R}$  and  $x(p) = 1, p$  traverses all odd primes, including 1) and the generalized Riemann conjecture  $L(s, X(p)) = 0$  ( $s \in \mathbb{C}, X(p) \in \mathbb{R}$  and  $X(p) \neq 0, p$  traverses all odd primes, including 1) prove that the twin primes, Polignac's conjecture, Goldbach's conjecture are all true. When  $L(s, x(p)) = 0$  ( $s \in \mathbb{C}, x(p) \in \mathbb{R}$  and  $x(p) = 1, p$  traverses all odd primes, including 1) and the generalized Riemann conjecture  $L(s, X(p)) = 0$  ( $s \in \mathbb{C}, X(p) \in \mathbb{R}$  and  $X(p) \neq 0, p$  traverses all odd primes, including 1) prove that the twin primes, Polignac's conjecture, Goldbach's conjecture are all true,

then  $s = \frac{1}{2} + ti$  ( $t \in \mathbb{R}, t \neq 0$ ).

The following proofs are performed in Euclidean three-dimensional space and Euclidean two-dimensional surfaces:

Poincare conjecture: A geometry must be a ball if all the points on it can be reduced to a single point in the same direction. In short, the closed manifold of  $n$  dimensions is homeomorphic to the sphere of  $n$  dimensions. Next I will prove the Poincare conjecture in Euclidean three-dimensional Spaces and two-dimensional surfaces. For the proofs of Poincare conjecture in Spaces higher than three dimensions and surfaces higher than two dimensions, I will introduce them in my other papers.

Before proving the Poincare conjecture of the two-dimensional sphere of Euclidean three-dimensional space, I first prove the existence problem that it is possible to tripartite any Angle with an ungraduated ruler and a compass.

Proof: If there is any Angle  $\angle A$ , take the vertex of Angle  $A$  as the center of the circle, and draw an arc with any length  $R$  as the radius, the two rays intersecting Angle  $A$  are at two points  $B$  and  $C$ . And respectively  $B, C$  two points as the center of the circle, with the same arbitrary length  $L$  as the radius of the arc. Two arcs intersect at point  $P$ , connect two points  $A$  and  $P$  with a non-scale rule, get a straight line  $AP$ , intersection arcs  $\overline{BC}$  is at point  $Q$ , so  $\angle QAB = \angle CAQ$ . Then use the ungraduated straightedge to connect  $B$  and  $C$ , point  $A$  as the center of the circle, the length  $R$  of line segment  $AB$  as the radius of the arc, point  $C$  as the center of the circle, the length  $m$  of line segment  $BC$  as the radius of the arc, the two arcs intersect at point  $D$ , use the ungraduated straightedge to connect two points  $C$  and  $D$  and two points  $A$  and  $D$ , the line segment  $CD$

and AD are obtained. For  $\triangle ACD$  and  $\triangle QAC$ ,  $AD=AQ, CD=CQ, AC=CA$ , so the triangles  $\triangle ACD$  and  $\triangle QAC$  are identical, so  $\angle DAC=\angle CAQ$ . For  $\triangle DAC$  and  $\triangle QAB$ ,  $AD=AB, BQ=CD, QB=CD$ , so  $\triangle DAC$  and  $\triangle QAB$  are identical, so  $\angle DAC=\angle QAB=\angle CAQ$ , so the line AP and AC divide  $\angle BAD$  into three equal parts. Since  $\angle BAC$  is an arbitrary Angle,  $\angle BAD$  is also an arbitrary Angle, and each bisecting Angle  $\angle DAC$ ,  $\angle CAQ$ , and  $\angle QAB$  are also arbitrary angles. Therefore, the three equal points of any Angle exist, and the three equal points of any Angle can also be made indirectly by using a non-graduated ruler and a compass.

In fact, all curvatures, including the series composed of many curvatures, which are also called curvature flows, are originated from the "flow number" proposed by Newton when he founded calculus. The origin of the concept of slope of a point on a curve is also the "flow number" proposed by Newton when he founded calculus. The curvature of the curve corresponds to any two adjacent points on the transcurve L (note: the curve is also called an arc, called a manifold in topology), assuming that the two adjacent points are M and M', respectively, the tangent lines  $L_1$  and  $L_2$  of their outer tangent circles, and the two tangent lines intersect. Suppose that the smaller Angle between the two tangents  $L_1$  and  $L_2$  is called the outer tangential Angle  $\beta$ , and the larger Angle between the two tangents  $L_1$  and  $L_2$  is called the outer tangential Angle  $\beta'$ , obviously  $\beta+\beta'=\pi$  radians, because they are collinear. Join M and M' to get the line MM'. Suppose that the Angle between tangent  $L_1$  and line segment MM' through M, that is, the direction Angle between tangent  $L_1$  and line segment MM', also called the Angle between tangent  $L_1$  and line segment MM', denoting its magnitude as  $\alpha$ , the Angle between tangent  $L_2$  and line segment MM' through M', That is, the direction Angle between the tangent line  $L_2$  and the line segment MM' is also called the tangent Angle between the tangent line  $L_2$  and the line segment MM', and its magnitude is  $\alpha'$ . Suppose that the length of the arc  $\overline{MM'}$  of a curve L between two points M and M' is, as M' tends to M along the curve L, if there is a limit to the average curvature of the arc  $\overline{MM'}$ , then this limit is called the

curvature of the curve L at point M, denoted K, that is  $K=\lim_{M' \rightarrow M} \left| \frac{\Delta\alpha}{\Delta s} \right|$ , or

$K=\lim_{\Delta s \rightarrow 0} \left| \frac{\Delta\alpha}{\Delta s} \right| = \left| \frac{d\alpha}{ds} \right|$ . When M approaches M' along the curve L, if the limit of the average curvature

of the arc MM' exists, then K' is called the curvature of the point M' on the curve L with respect to the point M on the curve L, denoted K', that is  $K'=\lim_{M \rightarrow M'} \left| \frac{\Delta\alpha}{\Delta s} \right|$ , or  $K'=\lim_{\Delta s \rightarrow 0} \left| \frac{\Delta\alpha}{\Delta s} \right| = \left| \frac{d\alpha}{ds} \right|$ .

It should be noted that the above two curvatures K and K' are often not zero, because the two points M and M' are not necessarily located on the same tangent circle. Poincare's conjecture states that all points on a closed manifold moving in the same direction can be reduced to a single point, and then the geometry made up of all such closed manifolds must be a sphere. When the Poincare conjecture holds, then any two adjacent points on all closed manifolds, assumed to be M and M', must be on the same outer tangent circle, and all closed manifolds must be compact and simply connected. The concept of slope on a curve is the value of the tangent of any point on the curve, such as the Angle between the tangent lines  $L_1$  and  $L_2$  of any point M or M' of the curve L and the horizontal X axis of the rectangular coordinate system in which it is located. Newton's "flow number" is actually a differential, and in particular the "flow number" already includes the concept of curvature and slope at any point on the curve, and also includes the concept of curvature flow and slope flow. The first meaning of the flow number is a series of numbers, Newton said "flow number" refers to the curvature of all points on the curve and the slope of all points on the curve of the series, and Newton also pointed out that the essence of the differential is the limit, the essence of the integral is the sum. Newton has made clear the most central idea and concept of calculus, the essence of the limit is the limit of extreme values, is the value of some ultimate point.

I began to prove Poincare's conjecture: First of all, the necessary and sufficient condition for the Poincare conjecture to be true is that all closed manifolds can be converted to the curvature of all points on the closed manifolds by topological transformations. The sequence of values of all these curvatures is called the curvature flow of the closed manifold. If all closed manifolds with zero curvature flow are converted to circles, then Poincare's conjecture holds. Since any Angle can be bisected by an ungraduated ruler and compass, an Angle equal to the bisected Angle of this arbitrary Angle can be made by an ungraduated ruler and compass outside any ray of this arbitrary Angle, so any Angle can be bisected by an ungraduated ruler and compass. Because above, when I proved that there are three equal points of any Angle, I first took an arbitrary Angle, and then I divided it into two equal parts, and on the basis of the two equal parts of any Angle, I proved that I could make an Angle of half the Angle of this arbitrary Angle. So if you combine this new Angle with the original arbitrary Angle, then the number of radians of the entire Angle is 1.5 times the number of radians of the original arbitrary Angle, which is also a new Angle. Since the original angular radian is arbitrary, the radian of this new Angle is also arbitrary, and the 2 bisection angles of the original arbitrary Angle and the 3 bisection angles of the new arbitrary Angle are equal, and the radian number of each such bisection Angle is also arbitrary until it is zero. If the number of radians of each bisection of any Angle is considered as a unit, then the number of radians of any Angle is 2, which is the Angle of 2 units, and the number of radians of the new arbitrary Angle is 3, which is the Angle of 3 units. If there are P of these arbitrary angles and Q of these new arbitrary angles, then there are infinitely many of these bisecting angles. Since all non-negative integers can be written as  $N=2P+3Q$  (P, Q are non-negative integers), N can be iterated over all non-negative positive numbers. Here's how I prove it. Proof: when P and Q are zero, then  $N=0$ ; If P is a non-negative integer and Q is odd, then  $N=2P+3Q=(2P+2Q)+Q=2(P+Q)+Q$  is odd; If P is a non-negative integer and Q is even, then  $N=2P+3Q=(2P+2Q)+Q=2(P+Q)+Q$  is even; So, if P and Q are non-negative integers, then  $N=2P+3Q=(2P+2Q)+Q=2(P+Q)+Q$  goes through all non-negative integers. Since all non-negative integers are either odd or even, now  $N=2P+3Q$  includes them all, so all non-negative integers can be written in the form  $N=2P+3Q$  (P, Q are non-negative integers), so any Angle can be equally divided by any infinite n (n traverses all non-negative integers). When any Angle is 360 degrees, take the common vertex O of all bisected angles as the center of the circle, draw an arc with any length as the radius R, and intersect each ray at  $P_1, P_2, P_{n-1}, \dots, P_n$ , and connect  $P_1, P_2, P_{n-1}, \dots, P_n$  from end to end, forms a closed manifold, then an circumference can also be equally divided by any n (n traverses all non-negative integers). Because the curvature of a curve is the rate of rotation of the tangent direction Angle of a point on the curve against the arc length, it can be defined by differentiating, indicating the degree to which the curve deviates from the straight line. It is a number that indicates the degree of curvature of a curve at a certain point. The greater the curvature, the greater the curvature of the curve, and the reciprocal of the curvature is the radius of curvature. The curvature of the curve L at a point M on it can also be understood in this way: half of the smaller pinch Angle  $2\alpha$  (the tangent Angle of the tangent Angle  $\alpha$  is formed after any two adjacent points M on the closed curve L intersect the two tangents of  $M'$  (M and  $M'$  are located just on some outer tangent circle), that is, the tangent value  $\text{tg}(\alpha)$  of the tangent Angle  $\alpha$ . The Angle between the tangent line and the string is called the chord Angle, the Angle of the smaller Angle is called the inner chord Angle, and the Angle of the larger Angle is called the outer chord Angle. In general, the tangent Angle refers to the inner sine Angle, and the inner sine Angle plus the outer sine Angle is  $\pi$  radians. For the Angle between any two tangents on the circle, the absolute value of the ratio of the tangent Angle (equal to half of the outer Angle of the tangent)  $\Delta\alpha$  to the change of the length  $\Delta s$  of arc  $\overline{M'M}$  (the value is called the average curvature of the arc), when the change of arc length  $\Delta s$  approaches zero, Its limit value is the

curvature of the point  $M'$  on the curve  $L$  with respect to the point  $M$  on the curve  $L$ . What needs to be said is why do you want to use the smaller Angle and not the larger Angle? The answer is simply convenience. The larger Angle is called the inside Angle of the tangent line, the smaller Angle is called the outside Angle of the tangent line, and the sum of the outside Angle of the tangent line and the inside Angle of the tangent line is  $\pi$  radian Angle, in general, the tangent Angle refers to the outside Angle of the tangent line. Curvature is always relative, it's always a point of curvature  $M$  relative to any other point of curvature  $M'$ , where  $M$  and  $M'$  are adjacent to each other, curvature is not absolute, there is no absolute curvature.

Then when any closed manifold  $L$  passes through two adjacent vertices  $M$  and  $M'$  of the inner positive  $n$  square of the outer tangent circle, when  $n$  ( $n$  is a non-negative integer) approaches infinity, and any vertex  $M'$  of the inner positive  $n$  square approaches along the curve  $L$  to another adjacent vertex  $M$  of the inner positive  $n$  square ( $M'$  can be either to the left of  $M$  or to the right of  $M$ ), The length of the chord  $|M'M|$  and the arc  $\overline{M'M}$  between any two adjacent points  $M$  and  $M'$  become smaller and smaller. The smaller Angle formed by the intersection of the two adjacent vertices on the curve  $L$  that are also the tangent lines of the two adjacent vertices  $M$  and  $M'$  on the square with the positive  $n$  is also getting smaller and smaller (the tangent Angle  $2\alpha$ ), and the half of the tangent Angle is the tangent Angle  $\alpha$  (the tangent Angle is just twice the tangent Angle for the circle, and this is not necessarily the case for other curves). Tangent Angle  $\alpha$  as the variation of  $\Delta\alpha$  and arc  $\overline{M'M}$  as long  $S$  the variation of  $\Delta S$  as the absolute value of the ratio of the  $\left|\frac{\Delta\alpha}{\Delta S}\right|$  also with arc  $\overline{M'M}$  long as change  $\Delta S$  tend to be zero, its limit value  $K = \lim_{\Delta S \rightarrow 0} \left|\frac{\Delta\alpha}{\Delta S}\right| =$

$\left|\frac{d\alpha}{ds}\right|$  that is smaller and smaller, tending to zero, and eventually reach zero, Finally, the curvature  $K$  of point  $M$  with respect to point  $M'$  becomes zero.

Conversely, when any closed manifold  $L$  passes through two adjacent vertices  $M$  and  $M'$  of the inner positive  $n$  square of the circle, when  $n$  ( $n$  is a non-negative integer) approaches infinity, and any vertex  $M$  of the inner positive  $n$  square approaches along the curve  $L$  to another adjacent vertex  $M'$  of the inner positive  $n$  square ( $M$  can be either to the left of  $M'$  or to the right of  $M'$ ), The length of the chord  $|M'M|$  and the arc  $\overline{M'M}$  between any two adjacent points  $M$  and  $M'$  become smaller and smaller. The smaller Angle formed by the intersection of the two adjacent vertices on the curve  $L$  and the tangents of the two adjacent vertices  $M$  and  $M'$  on the inner positive  $n$  square (tangent Angle  $2\alpha$ ) is also getting smaller. Half of the outer Angle of the tangent, the Angle of the tangent Angle  $\alpha$  (the outer Angle of the tangent Angle is just twice the Angle of the tangent Angle for a circle, but this is not necessarily the case for other curves), is also getting smaller and smaller. Tangent Angle  $\alpha$  as the variation of  $\Delta\alpha$  and arc  $\overline{M'M}$  as long  $S$  the variation of  $\Delta S$  as the absolute value of the ratio of the also with arc  $\overline{M'M}$  long as change  $\Delta S$  tend to be zero, its limit value  $K' = \lim_{\Delta S \rightarrow 0} \left|\frac{\Delta\alpha}{\Delta S}\right| = \left|\frac{d\alpha}{ds}\right|$  that is smaller and smaller, tending to zero, and eventually reach zero, Finally, the curvature  $K'$  of the point  $M'$  with respect to the point  $M$  becomes zero.

Ince  $M$  and  $M'$  are any adjacent two points on a closed manifold  $L$ , without losing generality, if all adjacent two points on a closed manifold  $L$  have exactly the same properties as any adjacent two points  $M$  and  $M'$ , then the curvature  $K$  of any point on all adjacent two points on a closed manifold  $L$  is zero with respect to the other point, Then all points on a closed manifold  $L$  have zero curvature  $K$  with respect to their neighbors. And since both  $M$  and  $M'$  are located on the inner circle where the positive  $N$ -square is located, and since  $M$  and  $M'$  are any adjacent two points on the closed manifold  $L$ , without loss of generality, if all adjacent two points on the closed manifold  $L$  have exactly the same properties as any adjacent two points  $M$  and  $M'$ , then all adjacent two points on the closed manifold  $L$  are located on the inner circle where the positive infinite  $N$ -square is

located, Moreover, all points on the closed manifold  $L$  are located on the inner circle of the positive infinite  $n$  square.

Then on the inner circle of the positive infinite  $n$  square, the curvature of any point with respect to its neighbors is zero. At the same time, if all closed manifolds have the property of a closed manifold  $L$ , then all points on such closed manifolds are located on the inner circle of the positive infinite  $n$  square, their curvature with respect to their neighbors is zero, and all such closed manifolds are circles. The necessary and sufficient condition for the Poincaré conjecture to hold is that all closed manifolds can be transformed topologically into closed manifolds with zero curvatures, that is, into circles, and that the geometry formed by such closed manifolds must be a sphere. A circle is essentially a special type of positive  $n$  ( $n$  traverses all non-negative integers) square. When  $n$  is a positive integer of finite size, no matter how small the length of each side of the positive  $n$  square is, it is greater than zero, and when  $n$  is infinite, taking all non-negative integers, then each side is as small as zero, and the positive  $n$  square becomes a circle. My method uses the concept of curvature proposed by Gauss in Euclidean differential topological geometry, and the method of dividing any Angle into three equal parts by an ungraduated ruler and a compass, proving Gauss's conjecture that the curvature of a circle in Euclidean differential topological geometry is zero. Then a closed positive  $n$  square, when  $n$  is a positive integer and tends to infinity, is a circle, and the curvature of every point on it with respect to its nearest neighbor is zero, and the curvature of every point on the circle of the Gaussian conjecture is zero. So this closed square with positive  $n$  ( $n$  traverses all non-negative integers) is a circle. Since all points on the circumference of the circle can be condensed into a single point in the same direction, in line with the premise of the Poincaré conjecture, the three-dimensional geometry formed by all such closed manifold must be a ball, in line with the conclusion of the Poincaré conjecture, which holds in Euclidean three-dimensional Spaces and two-dimensional surfaces.

Since any adjacent two points  $M$  and  $M'$  of any closed manifold  $L$  are any adjacent vertices of a positive infinite  $N$ -square, if their curvature is zero, then they are all on the inner circle where the positive infinite  $N$ -square is located. When  $n$  is infinite, all the vertices of the positive infinite  $n$  square are on the inner circle in which they are located, and if all the vertices have zero curvature with respect to their neighbors, the positive infinite  $n$  square will coincide with the inner circle in which it is located, and the positive infinite  $n$  square will become a circle, so it is impossible for the area of a circle to be the area of a positive finite square, The square of the circle conjecture of the ancient Greek three cubits is not valid.

The square of the circle in the conjecture of the three great geometric ruler in ancient Greece should mean the square of the circle. Since we already know that a circle is a special positive infinite  $n$  ( $n$  is a non-negative integer approaching infinity) square, it cannot be a positive finite square, so it cannot be a positive square. If "square the circle" in the drawing conjecture of the three great geometric ruler in ancient Greece means to draw with a straight ruler and a compass, and to convert the area of a circle to the area of a square, it will be impossible to achieve. Gauss was right that points on a circle do have zero curvature with respect to their neighbors. Therefore, all points on such a closed manifold can be condensed into one point in the same direction, which conforms to the premise of Poincaré's conjecture, and all points on such a closed manifold have zero curvature with respect to their neighbors, so they are a compact closed manifold, and they are all circles.

In the assumption of the Poincaré conjecture that "all closed manifold condense to a point in the same direction", if the manifold is compact, it is a circle, which is equivalent to the fact that the curvature of any point on the manifold with respect to the nearest neighboring point is zero. A closed manifold whose curvature is a non-zero constant is definitely not a circle, and any point on it is not compact, although it can be condensed to a point in the same direction, and the absolute value of the curvature of any point on the closed manifold with respect to the nearest neighboring point is a constant greater than zero. A circle is essentially a special positive  $n$

square (n traverses all non-negative integers). When n is an infinite positive integer, if the closed manifold must not be a compact manifold, then the length of each side of a square with positive n (n is an arbitrarily finite non-negative integer) and the length of its corresponding arc are greater than zero. When n is infinite, and n takes all non-negative integers, then the length of each of its sides and the length of the arc corresponding to each of its sides will be reduced to zero, and then the positive n (n takes all non-negative integers) square will be a circle. The curvature of each point on the circle is equal to zero with respect to the nearest neighboring point, which conforms to Gauss's conjecture that the curvature of every point on the circle is zero. Since all points on the circumference of a circle can be condensed into a single point in the same direction, and the circle is a compact closed manifold, conforming to the premise of Poincare's conjecture, a three-dimensional geometry consisting of all such compact closed manifold whose curvature is zero at each point must be a sphere. It is consistent with the conclusion of the Poincare conjecture, so the Poincare conjecture is valid in Euclidean three-dimensional space and two-dimensional surface.

Suppose the area of the circle is S, the circumference of the circle is C, the diameter of the circle is d, the radius of the circle is R, and C' is the circumference of the positive n-sided shape, r is the distance between the center of the positive n-boundary and any of its vertices D<sub>i</sub> (i traverses all the full numbers), |D<sub>i</sub>D<sub>i-1</sub>| is the distance between any two adjacent vertices D<sub>i</sub> and D<sub>i-1</sub> of a regular polygon,  $\pi = \frac{C}{d} = \frac{C}{2r}$ ,  $\lambda = \max(|D_2D_1|, |D_3D_2|, |D_4D_3|, \dots, |D_iD_{i-1}|)$ .

Then the area of the i-th isosceles triangle shape in orthomorphosis is:

$$S_i = 2 * \frac{1}{2} * \frac{1}{2} * |D_iD_{i-1}| * H = \frac{1}{2} * \frac{C'}{n} * H = \frac{C'}{2n} * \sqrt{r^2 - \frac{C'^2}{4n^2}}$$

Suppose the area of a positive infinite polygon is S',  $\lambda \rightarrow 0$  as  $n \rightarrow \infty$ , and  $C' \rightarrow C$ ,

Then

$$S' = \lim_{\lambda \rightarrow 0, C' \rightarrow C} \sum_{i=1}^{\infty} S_i = \lim_{\lambda \rightarrow 0, C' \rightarrow C} \sum_{i=1}^{\infty} S_i = \lim_{\lambda \rightarrow 0, C' \rightarrow C} \sum_{i=1}^{\infty} \frac{C'}{2n} * \sqrt{r^2 - \frac{C'^2}{4n^2}}$$

because  $\lim_{\lambda \rightarrow 0, C' \rightarrow C} \frac{C'}{2n} * \sqrt{r^2 - \frac{C'^2}{4n^2}} = S$ , then  $S' = S$ .

So the area of a positive infinite polygon is the area of the outer circle of its positive infinite n (n traverses all non-negative integers) edge shape.

Therefore, the area of the positive infinite n (n traversing all non-negative integers) is  $S' = \pi r^2$ , that is to say, the circle can only be transformed into the positive infinite n (n traversing all non-negative integers) edge shape, can not be transformed into a positive finite polygon such as a regular quadrilateral, the area of the circle is impossible to be the area of the positive square.

Does disjoint mean parallel? How to unify Euclidean geometry, Lobachevsky geometry and Riemannian geometry? Disjoint may not parallel, disjoint can be parallel or not parallel, not parallel does not necessarily

intersect; Intersect can have points of intersection or it can have no points of intersection; Parallelism can have points of intersection (such as overlap) or it can have no points of intersection. In order to unify Euclidean geometry, Lobachev geometry, and Riemannian geometry, I rewrote the fifth postulate of geometry. The other four formulas do not change, they are:

Postulate 1: a straight line can be made from any point to any point.

Postulate 2: a finite line can continue to be extended.

Postulate 3: circles can be drawn at any point and at any distance.

Postulate 4: All right angles are equal.

Postulate 5: Beyond a known line, it may not be possible to make any line parallel to a known line, if a line can be made parallel to a known line, then at least one line can be made parallel to a known line, and even any number of lines can be made parallel to a known line. On the other hand, if you go beyond a line, you may not be able to make any line intersect a known line, and if you can make a line intersect a known line, you can make at least one line intersect a known line, and you can even make any number of lines intersect a known line.

Newton's universal gravitation and the unification of quantum mechanics, please refer to the content I published in the journal of the American academy of multidisciplinary research and development(AJMRD)paper"A new space-time theory"

(please visit: <https://www.ajmrd.com/vol-6-issue-5/>;

Or <https://www.ajmrd.com/wp-content/uploads/2024/05/D643745.pdf>) associated with the quantum mechanics theory.The Newtonian gravitation between an object A and an object B is F, then their force F, using the relevant theory of quantum mechanics, can be expressed in terms of the mass of the object m,

combined with other physical quantities:
$$F = G \frac{Mm}{r^2} = \left| -\frac{mC^2}{r} \right| = \left| -\frac{mhC \times C}{h \times r} \right| \approx \frac{1.24eV \times \mu m \times m \times C}{hr} =$$

$\frac{1.24 \times 10^{-6} eV \times m \times C}{hr}$ . In the above formula:The 'x' symbol means multiplication,

M is the mass of the object A in kilograms,

m is the mass of the object B in kilograms.

r is the average distance of the force between the object A and the object B, in meters,

h is Planck's constant,  $h=6.62606957(29) \times 10^{-34} J \cdot s$ ,

$hc \approx 1.24 eV \cdot \mu m = 1.24 \times 10^{-6} eV \cdot m$ ,

1eV=1 electron volt,

1 $\mu m$ =1micron= $10^{-6}m$ ,

G is Newton's universal gravitation constant,  $G=(6.67 \mp 0.07) \times 10^{-11} m^3/(kg^{-1} \cdot s^{-2})$ ,

C is the propagation rate of light in vacuum,  $C \approx 2.997924583 \times 10^8 m/s$ .

A new working principle of controlled nuclear fusion ——my idea on the working principle of

controlled nuclear fusion : Inertial magnetic confinement of deuterium and tritium will gather them into a specific region (small fusion ring), and use the laser beam generated by battery discharge to continuously irradiate this specific region (small fusion ring), generating hundreds of millions of degrees of high temperature, so that the deuterium and tritium in this specific region produce fusion, generating a large number of high temperature heat. And these high temperature heat into another large specific area (big fusion ring) through helium, when starting the nuclear reactor, the controlled nuclear polymerization device small fusion ring work first (preheat), a steady stream of high temperature heat generated in the small fusion ring into the big fusion ring, the heat is constantly imported and enriched into the big fusion ring. So that the temperature in the big fusion ring also reaches hundreds of millions of degrees, so that the inertial magnetic confinement of deuterium and tritium in the big fusion ring produces nuclear fusion, and the heat is continuously generated and enriched in the big fusion ring, maintaining the temperature of hundreds of millions of degrees, so that the nuclear fusion reaction of deuterium and tritium in the big fusion ring can continue. When the energy produced by the nuclear fusion reaction of deuterium and tritium confined by inertial magnetic confinement in the big fusion ring begins to gain, and the gain reaches a sufficient proportion, a part of the gained energy is exported to drive a steam turbine or gas turbine to generate electricity. Part of the electricity emitted charges the battery, so that the laser fusion reaction in the small fusion ring can continue, and the amount of battery discharge is reasonably distributed, and the remaining part of the electricity is output to the external grid through the transmission line.



Assume that only a finite number of primes  $p_i$  make  $2^{p_i} - 1$  can become a prime number, now construct  $Q=2^{2^k}(2^{p_i}-1)=2^{2^k+p_i}-2^{2^k}+2^{2^k}-1=2^{2^k}(2^{p_i}-1)+(2^k+1)(2^k-1)$  ( $i \in Z^+, k \in Z^+$ ). Because of having an infinite number of prime number, so  $2k + p_i$  ( $i \in Z^+, k \in Z^+$ ) can always is a prime number, assuming  $p_j = 2k + p_i$  ( $i \in Z^+, j \in Z^+, k \in Z^+$ ). When  $k \neq p_i$  ( $i \in Z^+, k \in Z^+$ ), because  $2^{2^k}(2^{p_i}-1)$  can not be divisibled by all primes less than  $2^{2^k}(2^{p_i}-1)$ , according to the definition of prime Numbers, so when  $k \neq p_i$  ( $i \in Z^+, k \in Z^+$ ), then  $2^{p_i} - 1 = 2^{2^k}(2^{p_i}-1)$  is a prime number, this contradicts the previous assumption, so there are not only a finite number of prime numbers  $p_i$  that make  $2^{p_i} - 1$  prime, so there are an infinite number of prime numbers  $p_i$  make  $2^{p_i} - 1$  ( $i \in Z^+$ ) can be a prime number. Below I to prove this, assuming  $2^{2^k} = 2u = 2^n P_m$  ( $k \in Z^+, u \in Z^+, m \in Z^+, n \in Z^+$ ), First take all the primes, and then take any number of primes from all the primes, allow to repeat any number of the same prime number, also allow to repeat any number of prime numbers, and then multiply all these obtained primes, their product is represented by  $P_m$ . So  $2^{2^k}(2^{p_i} - 1) + 2^{2^k} - 1$  ( $i \in Z^+, k \in Z^+$ ) cannot be divided exactly by 2 and all primes of a prime. Obviously  $2^{2^k}(2^{p_i} - 1) + 2^{2^k} - 1 > 2^{p_i} - 1$  ( $i \in Z^+, k \in Z^+$ ), at the same time  $2^{2^k}(2^{p_i} - 1) + 2^{2^k} - 1 > P_j$  ( $i \in Z^+, k \in Z^+, j \in Z^+$ ),  $P_j$  is the 'largest' prime of all primes. According to the definition of a prime number, a positive integer that is not evenly divided by 2 and any of the prime numbers must be a prime number, So  $2^{2^k}(2^{p_i} - 1) + 2^{2^k} - 1$  ( $i \in Z^+, k \in Z^+$ ) must be a prime number,  $(2^{p_i+2^k} - 1)$  ( $i \in Z^+, k \in Z^+$ ) must also be a prime number. This contradicts the previous assumption that there are only a finite number of Mersenne primes; there are obviously more Mersenne primes than  $2^{p_i} - 1$  ( $i \in Z^+$ ). So it is wrong to assume that there are only a finite number of Mersenne primes, or that there is a maximum number of Mersenne primes. Since primes of the form  $2^{p_i} - 1$  ( $i \in Z^+, p_i$  is prime) are called Mersenne primes, there are an infinite number of Mersenne primes and the Mersenne conjecture holds. Suppose there is any odd number  $O_j$ , then any even number  $E = O_j + 1$ . Hypothesis  $2u = 2^n P_m$  ( $k \in Z^+, u \in Z^+, m \in Z^+, n \in Z^+$ ),  $P_m$  for any odd,  $O_j = 2u + 1$  ( $u \in Z^+$ ), then  $E = O_j + 1 = (2u + 1) + 1 = [(2^n \times (p_1)^{n_1} \times (p_2)^{n_2} \times (p_3)^{n_3} \times \dots \times (p_i)^{n_i} \times \dots) + 1] + 1$  ( $p_1, p_2, p_3, p_4, \dots, p_k, \dots, p_i, \dots \in Z^+, n_1, n_2, n_3, n_4, \dots, n_i, \dots \in Z^+, u \in Z^+, i \in Z^+$ ),  $p_1, p_2, p_3, p_4, \dots, p_k, \dots, p_i, \dots$  represents all prime numbers. Then  $E = O_j + p_q = (2u + 1) + p_q = [(2^n \times (p_1)^{n_1} \times (p_2)^{n_2} \times (p_3)^{n_3} \times \dots \times (p_i)^{n_i} \times \dots) + 1] + p_q$  ( $q \in Z^+$ ),  $p_q$  is a prime number, or  $E = O_j + 1 = (2u + 1) + 1 = [(2^n \times (p_1)^{n_1} \times (p_2)^{n_2} \times (p_3)^{n_3} \times \dots \times (p_i)^{n_i} \times \dots) + 1] + 1 - p_k + p_k = [(2^n \times (p_1)^{n_1} \times (p_2)^{n_2} \times (p_3)^{n_3} \times \dots \times (p_k)^{n_k} \times \dots \times (p_i)^{n_i} \times \dots) - 1] \times p_k + (p_k + 1)$ ,  $[(2^n \times (p_1)^{n_1} \times (p_2)^{n_2} \times (p_3)^{n_3} \times \dots \times (p_k)^{n_k} \times \dots \times (p_i)^{n_i} \times \dots) - 1]$  can't be divided exactly by any one of all the prime Numbers primes, So according to the definition of a prime number, cannot be divided exactly by any prime positive integers must be prime Numbers, so  $[(2^n \times (p_1)^{n_1} \times (p_2)^{n_2} \times (p_3)^{n_3} \times \dots \times (p_k)^{n_k} \times \dots \times (p_i)^{n_i} \times \dots) - 1]$  must be a prime number, denoted by  $p_j$  ( $j \in Z^+$ ), if  $(p_k + 1)$  is a prime number, which we denote by  $p_v$  ( $v \in Z^+$ ), then for any sufficiently large even number  $E$ , assuming that  $E$  is greater than the product of all primes, then any sufficiently large even number  $E$  can be expressed as the sum of the product of one prime  $p_j$  and the other prime  $p_q$ , or any sufficiently large even number  $E$  can be expressed as the sum of the product of one prime  $p_v$  ( $v \in Z^+$ ) and two other primes  $p_j$  ( $j \in Z^+$ ) and  $p_k$  ( $k \in Z^+$ ), is  $E_j = O_j + 1 = (2u + 1) + 1 = p_j \times p_k + p_v$ . Or  $(p_k + 1)$  is an odd number, and Suppose that when  $p_k$  is added,  $(p_k + 1)$  must be represented only by the product of two primes, one of which is  $p_g$  ( $g \in Z^+$ ) and the other by  $p_r$  ( $r \in Z^+$ ).  $p_1, p_2, p_3, p_4, \dots, p_k, \dots, p_i, \dots$  Representing all primes, then any sufficiently large even number  $E$  can be expressed as the sum of the product of a prime  $p_r$  ( $r \in Z^+$ ) and two other primes  $p_j$  ( $j \in Z^+$ ) and  $p_g$  ( $g \in Z^+$ ), is also  $E = O_j + 1 = (2u + 1) + 1 = [(2^n \times (p_1)^{n_1} \times (p_2)^{n_2} \times (p_3)^{n_3} \times \dots \times (p_k)^{n_k} \times \dots \times (p_i)^{n_i} \times \dots) - 1] \times p_g + p_r = (p_j \times p_g) + p_r$  ( $j \in Z^+, g \in Z^+, r \in Z^+$ ).

**Thanks**

Thank you for reading this paper.

## V. CONTRIBUTION

The sole author, poses the research question, demonstrates and proves the question.

### **Author**

Name: Liao Teng (1509135693@139.com), Sole author

Setting: Tianzheng International Institute of Mathematics and Physics, Xiamen, China

Work unit address: 237 Airport Road, Weili Community, Huli District, Xiamen City

## REFERENCES

- [1] Riemann: 《On the Number of Prime Numbers Less than a Given Value》 ;
  
- [2] John Derbyshire (America): 《PRIME OBSESSION》 P218, BERHARD RIEMANNAND THE GREATEST UNSOIVED PROBLEM IN MATHMATICS,Translated by Chen Weifeng,Shanghai Science and Technology Education Press, China,<https://www.doc88.com/p-54887013707687.html>;
  
- [3] Xie Guofang: On the number of prime numbers less than a given value - Notes to Riemann's original paper proposing the Riemann conjecture,