**The New Prime theorem（15）**



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**Abstract:** Using Jiang function we prove that there exist infinitely many primes  such that each of  is a prime.

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**Theorem.** Let  be a given prime.

 （1）

There exist infinitely many prime  such that each of  is a prime.

**Proof**. We have Jiang function[1]

, （2）

where ,  is the number of solutions of congruence

 （3）

From (3) we have , if  then , if  then . From (3) we have

. （4）

We prove that there exist infinitely many primes  such that each of  is a prime. Jiang function is a subset of Euler function: .

We have asymptotic formula [1]

. （5）

where .

Example 1. Let . From (1) we have

 （6）

We have Jiang function

 （7）

There exist infinitely many primes  such that  and  are all prime.

We have asymptotic formula

 （8）

Example 2. Let , from (1) we have

 （9）

We have jiang function

, （10）

where is the number of solutions of congruence

 （11）

From (11) we have , , , , , ,  otherwise.

Substituting it into (10) we have.

 （12）

We prove that there exist infinitely many primes  such that each of  is prime.

Note. The prime numbers theory is to count the Jiang function  and Jiang singular series [1-2], which can count the number of prime number. The prime number is not random. But Hardy singular series  is false. [2-5], which can not count the number of prime numbers.

**Note:**

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**References**

1. Chun-Xuan Jiang, Jiang’s function in prime distribution. http://www. wbabin.net/math /xuan2. pdf. http://wbabin.net/xuan.htm#chun-xuan.
2. G. H. Hardy and J. E. Littlewood, Some problems of “Partitio Numerorum”, III: On the expression of a number as a sum of primes. Acta Math., 44(1923)-70.
3. B. Green and T. Tao, Linear equations in primes. To appear, Ann. Math.
4. D. Goldston, J. Pintz and C. Y. Yildirim, Primes in tuples I. Ann. Math., 170(2009) 819-862.
5. Vinoo Cameron. **Prime Number 19, The Vedic Zero And The Fall Of Western Mathematics By Theorem.** *Nat Sci* 2013;11(2):51-52. (ISSN: 1545-0740). <http://www.sciencepub.net/nature/ns1102/009_15631ns1102_51_52.pdf>.
6. Vinoo Cameron, Theo Den otter. **PRIME NUMBER COORDINATES AND CALCULUS.** *Rep Opinion* 2012;4(10):16-17. (ISSN: 1553-9873). <http://www.sciencepub.net/report/report0410/004_10859report0410_16_17.pdf>.
7. Vinoo Cameron, Theo Den otter. **PRIME NUMBER COORDINATES AND CALCULUS.** *J Am Sci* 2012;8(10):9-10. (ISSN: 1545-1003). <http://www.jofamericanscience.org/journals/am-sci/am0810/002_10859bam0810_9_10.pdf>.
8. Chun-Xuan Jiang. **Automorphic Functions And Fermat’s Last Theorem (1).** *Rep Opinion* 2012;4(8):1-6. (ISSN: 1553-9873). <http://www.sciencepub.net/report/report0408/001_10009report0408_1_6.pdf>.
9. Chun-Xuan Jiang. **Jiang’s function  in prime distribution.** *Rep Opinion* 2012;4(8):28-34. (ISSN: 1553-9873). <http://www.sciencepub.net/report/report0408/007_10015report0408_28_34.pdf>.
10. Chun-Xuan Jiang**. The Hardy-Littlewood prime *k*-tuple conjecture is false.** *Rep Opinion* 2012;4(8):35-38. (ISSN: 1553-9873). <http://www.sciencepub.net/report/report0408/008_10016report0408_35_38.pdf>.
11. Chun-Xuan Jiang. **A New Universe Model.** *Academ Arena* 2012;4(7):12-13 (ISSN 1553-992X). <http://sciencepub.net/academia/aa0407/003_10067aa0407_12_13.pdf>.
12. Chun-Xuan Jiang. **The New Prime theorem（15）****.** *Academ Arena* 2015;7(1s): 21-22. (ISSN 1553-992X). <http://www.sciencepub.net/academia>. 15.

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