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## 递归法计算波利那克徐氏数的FORTRAN源程序

A FORTRAN source program for calculating the Polignac-Xu' s numbers with the recursive method

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徐万东

( 天津大学理学院; )

**摘要:** 数论中,除了哥德巴赫猜想:任何大于6的偶数都可以表为二个不相等的奇素数之和,还有一个与它类似的重要问题:是否存在一个偶数不可以表为二个奇素数之差?美国数学家阿普斯托尔把该问题列为数论中关于素数的12个未解难题之一。我们称每个偶数表为二个奇素数之差的差式数目为波利那克徐氏数。在前期证明否定了该猜测之后,本文给出了用递归法计算波利那克徐氏数的FORTRAN源程序。从计算结果可以看到,波利那克徐氏数是随着偶数的增大而振荡增大,这不但验证了这个猜测是不成立的,而且也给前期的数学归纳法证明提供了充分的依据。  
**关键词:** 哥德巴赫猜想类型问题;波利那克徐氏数;偶数;素数;素数分布

Xu Wandong

( School of Science, Tianjin University, Tianjin, 300072, China; )

**Abstract:** In the field of number theory, in addition to Goldbach' s conjecture, there is another similar problem: Is there an even number  $>2$  which is not the difference of two primes? An American mathematics T. M. Apostol concluded this is one of 12 outstanding unsolved problems concerning prime numbers. The number of the difference formulae of two odd primes for expressing every even number is named one of Polignac-Xu' s. After given a deny reply for this problem with a mathematical induction proof, we advanced a FORTRAN source program for calculating Polignac-Xu' s number with recursive method and calculated some results for many even numbers. From these results, we can see that the Polignac-Xu' s number is oscillatingly increased as even number increases. And this not only verified the conjecture mentioned above but offered a distinctly evidence for the former proof of it with mathematical induction also.  
**Keywords:** Problem of Goldbach' s conjecture type; Polignac-Xu' s number; prime; distribution of primes;

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作者简介:  
通信联系人: 徐万东

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