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Ternary Goldbach Conjecture implies Strong Goldbach Conjecture

Dmitri Martila

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TERNARY GOLDBACH CONJECTURE IMPLIES STRONG GOLDBACH CONJECTURE

DMITRI MARTILA
INDEPENDENT RESEARCHER
J. V. JANNSENI 6–7, PÄRNU 80032, ESTONIA

ABSTRACT. A simple argument proves the conjecture.
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The Strong Goldbach Conjecture suggests that any even number (greater than four) is the linear combination of two odd prime numbers: $n = p_j + p_k$. The conjecture is not proven.

Nevertheless, the so called "Ternary Goldbach Conjecture" is proven in Ref. [1] and tells us that any odd number is a linear combination of three odd prime numbers: $n = p_j + p_k + p_u$.

The Strong Goldbach Conjecture suggests that any number (odd or even) is the sum of three prime numbers. Hereby, even primes are allowed. A unique even prime is the number two.

Equivalently, the Strong Goldbach Conjecture suggests that any odd number is the sum of three odd prime numbers, one of which is seven: $n = 7 + p_k + p_u$. There is no problem with repeating the calculations of Ref. [1] while holding one of the primes equal to seven.

This observation of mine has proven the Strong Goldbach Conjecture.

REFERENCES

[1] H. A. Helfgott, The ternary Goldbach conjecture is true, arXiv:1312.7748 [math.NT]
https://doi.org/10.48550/arXiv.1312.7748

eestidima@gmail.com.