

A Discovery on the Symmetrical Pattern of Mirror Primes in P^2 : Applications in the Formal Proof of the Goldbach Conjecture

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Abstract : The base 6 structure and properties of mirror primes are discovered in this work towards the proof of Goldbach Conjecture. This paper reveals a fundamental pattern on pairs of mirror primes adjacent to any even number $n_e > 2$ with symmetrical distances on both sides determined by a methodology of Mirror Prime Decomposition (MPD). MPD leads to a formal proof of the Goldbach conjecture, which states that the conjecture holds because any pivot even number, $n_e > 2$, is a sum of at least an adjacent pair of primes divided by 2. This work has not only revealed the analytic pattern of base 6 primes but also proven the infinitive validation of the Goldbach conjecture.

Keywords : number theory, primes, mirror primes, double recursive patterns, Goldbach conjecture, formal proof, mirror-prime decomposition, applications

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