ISSN: 2834-7706

Review article

Journal of Mathematical Techniques and Computational Mathematics

Prime Limiting Function

Prashant Chauhan

Research and Development

***Corresponding author:**
Prashant Chauhan, Kaushal, Teleportation Lab, Research and Development, Meerutk, 150 Chandrika Colony, Shivaji Road, Meerut, Uttar Pradesh, India-250001.

Submitted: 16 Nov 2022; **Accepted:**24 Nov 2022; **Published:**08 Dec 2022

Citation: Chauhan, P. (2022). Prime Limiting Function. *J Math Techniques Comput Math*, , 1(3), 185-186.

Abstract

Among all number series, prime number series is most mysterious. Even after years of work, this series never fail to amaze us. Another amazing fact is realized and reciprocated with this research is that any three consecutive prime numbers can be reduced to the first prime number present in the series. Also, using this limiting function a question is imposed on the existence of negative prime numbers. This series can also be viewed as a symmetric series about 2 i.e. the first prime number.

Keywords: *Prime Numbers; Prime Limiting Function; Defense Encryption.*

Prime Limiting Function

The theorem states that if we took any three consecutive prime numbers [1] let say in increasing order then they can be limited as: Let P_1, P_2 and P_3 be any three consecutive prime numbers then the following relation will hold true on integer scale:

$$\frac{P_1+P_3}{P_2} \cong 2 \qquad (1)$$

Equation 1 will also hold true for negative P1, P2 and P3. Thus, it can be rewritten as:

$$\left|\frac{P_1+P_3}{P_2}\right| \cong 2 \qquad (2)$$

Also, if we consider real number scale then regression analysis can be used to obtain a straight line passing through 2 where the graph is in between prime numbers and prime limiting function.

Verification of Prime Limiting Function

1. 1213 (P_1), 1217 (P_2) & 1223 (P_3)
Using equation 1,

$$\frac{1213+1223}{1217} = 2.00164$$

On integer scale, 2.00164 ~2

2. 11551 (P_1), 11579 (P_2) & 11587 (P_3)
Using equation 1,

$$\frac{11551+11587}{11579} = 1.99827$$

On integer scale, 1.99827~2

3. 59051 (P_1), 59053 (P2) & 59063 (P_3)
Using equation 1,

$$\frac{59051+59063}{59053} = 2.00074$$

On integer scale, 2.00074~2

4. 101833 (P_1), 101837 (P_2) & 101839 (P_3)
Using equation 1,

$$\frac{101833+101839}{101837} = 1.99998$$

On integer scale, 1.99998~2

5. 184559 (P_1), 184567 (P_2) & 184571 (P_3)
Using equation 1,

$$\frac{184559+184571}{184576} = 1.99988$$

On integer scale, 1.99988~2

6. 7006693 (P_1), 7012367 (P_2) & 7034003 (P_3)
Using equation 1,

$$\frac{7006693+7034003}{7012367} = 2.00227$$

On integer scale, 2.00227~2

7. 123316621 (P_1), 123316651 (P_2) & 123316703 (P_3)
Using equation 1,

$$\frac{123316621+123316703}{123316651} = 2.00000$$

On integer scale, 2.00000~2

8. 237262351 (P_1), 237262373 (P_2) & 237262393 (P_3)
Using equation 1,

$$\frac{237262351+237262393}{237262373} = 1.99999$$

On integer scale, 1.99999~2

9. 256588273 (P_1), 256588307 (P_2) & 256588313 (P_3)
Using equation 1,

$$\frac{256588273+256588313}{256588307} = 1.99999$$

On integer scale, 1.99999~2

Using equation 2, if we apply negative sign before the above prime limiting examples, then also we will achieve numerical value of 2 at integer scale. This prime limiting function holds various advantages in cryptography and will hold various applications in defense and technological advancements.

Discussion

Prime number series holds various algorithmic advantages in various domains including defense and more. Prime number series can also be seen as symmetric about 2 and symmetry holds the maximum probability of encryption. I believe that the understanding of the above fact will lead India to a bright future in terms of technological revolutions.

References

1. Caldwell, C. K. (2020). The first fifty million primes.