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Research on an Even Number Which Minus 2 Can be Exactly Divided by 6 Can be Expressed as the Sum of Several Sets of Two Prime Numbers

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Abstract: Using a 0 to N_3 segment X_B number axis to move two number axis units to the right and then overlap with a 0 to N_3 segment X_A number axis in the same direction, it's found that the overlapping number axis points of the two prime numbers are a set of twin prime numbers, and the law of twin prime numbers smaller than N_3. Then, using the two X_A number axes of the same length with them to overlapped in the opposite direction, it is found that the overlapping axis points of the twin primes are P (1,1), which is the twin primes of N_3, which proves that N_3 can also be expressed as the sum of several groups of two primes. Comparing the two overlapping number axes, it is found that the $X_A\backslash X_A'$ overlapping number axes are symmetrical, and it is found that prime numbers that make $6P_a$ exactly divide (N_3-$2P_a$) or $6P_b$ exactly divide ((N_3+$2P_b$) can also increase the table method number of P(1,1) prime pairs of N_3, which proves that the number of P (1,1) primes of N_3 to the table group is about equal to or more than half of the number of twin primes which is smaller than N_3.

1. Introduction

By analyzing the smaller even numbers, it is found that except for 8, the other even number which minus 2 can be exactly divided by 6 can be expressed as the sum of two P_A= (6m+1) primes, and the table method group count increases with the increase of even numbers, such as 14=(7+7), 26=(7+19)=(13+13), 50=(7+43)=(13+37)=(19+31). And the table method group count is also closely related to the number of groups of twin primes smaller than the even number.

The even number N_3 (N_3=6m+2, m≥2) is given. Except for 8, the other even numbers which minus 2 can be exactly divided by 6 are in N_3.

2. Characteristics of Twin Primes and Their Distribution on the Number Axis [1]

Except for 2 and 3, the composite numbers that cannot be exactly divided by 2 or 3 are all in the odd numbers of A=6m+1 and B=6m-1 [2]. The prime numbers are represented by P, and the composite numbers are represented by H. If removes H_A from A, the remaining is P_A; if removes H_B from B, the remaining is P_B (the prime number in this paper does not include 2 and 3, and the composite number does not include the composite number that can be exactly divided by 2 or 3).

Make X_A number axes that show only odd numbers A and X_B number axes that show only odd numbers B. The parallel line of the vertical axis is made through the N_3 point, and the 0 to N_3 segments are intercepted respectively. Move the X_B segment to the right by two units vertically up to overlap X_A, forming a twin prime overlapping number axes from 0 to N_3 (LXAXB), where the B odd numbers all overlap with the A odd number, and the two primes form a twin prime overlapping number axes point.

Features of LXAXB:

1) The X_A and X_B axes overlap in the same direction.

2) The odd number A and B overlap to form (A, B) overlapping axis points, and the difference between the two numbers is 2.

3) There are $N_3/6$ sets of (A, B) overlapping number axis points.

4) Frequency curves of the same wavelength neither intersect nor overlap.

5) The frequency curves of different wavelengths of the two number axes intersect at the overlapping number axis points, forming the LHH group with overlapping composite numbers (H_A, H_B) of both Ep or Fp and Gp or Sp. The (#H_A-LHH) group has only the (H_A, P_B) overlapping number axis points of Ep or Fp, and the (#H_B-LHH) group has only the (H_B, P_A) overlapping number axis points of Gp or Sp. The remaining prime axis points overlap, forming L_{N3} groups of (P_A, P_B) with no frequency curve, and the sum of the four overlapping axis points is equal to the total number of groups (A, B).

The number of groups of twin primes is obtained by using the residual relation:

$$L_{N3}= N_3/6 -LHH-(\#H_A-LHH)-(\#H_B-LHH) = N_3/6 +LHH-(\#H_A+\#H_B) \tag{1}$$

3. Characteristics of N_3 Overlapping Number Axis are Analyzed by Overlapping Two X_A Number Axes in the Opposite Direction

3.1 Make $X_A \backslash X_A'$ Overlapping Number Axes

Take two X_A from 0 to N_3 and place them in the first and fourth quadrants of the planar rectangular coordinate system respectively.

The X_A of the fourth quadrant is flipped 180°, the N_3 point is on the Y axis, the direction is left, the Ep' is still above the number axis, and the Fp' is still below the number axis, which is called X_A' number axis. The X_A' after flipping is only opposite to the X_A, and other properties remain unchanged. X_A' vertically moves up and overlaps with X_A to form the $X_A \backslash X_A'$ overlapping axis (XAXA) of N_3. (Fig.1)

XAXA is equivalent to replacing X_B of LXAXB with X_A and then flipping 180°, or replacing X_B' of N_2 overlapping number axis XAXB [1] with X_A'. Because X_A and X_B are the same in nature, its evaluation is the same as that of N_2 overlapping number axis. On XAXA, the A' odd number of X_A' all overlaps with the A odd number of X_A (Except for the largest A and A', which both overlap with the 1 of another number axis), and the two composite numbers overlap as (H_A, H_A') overlapping axis points. The two primes overlap as (P_A, P_A') overlapping number axis points, which are a set of P (1, 1) prime pairs of N_3. Although the X_A' is in the opposite direction of X_A, the frequency curve is not directional, and the intersection rule of the frequency curve is not directional. Through the intersection rule of the frequency curve, the rule of (H_A, H_A') overlapping axis points is found, and the rule of P (1, 1) prime pairs of N_3 is found.

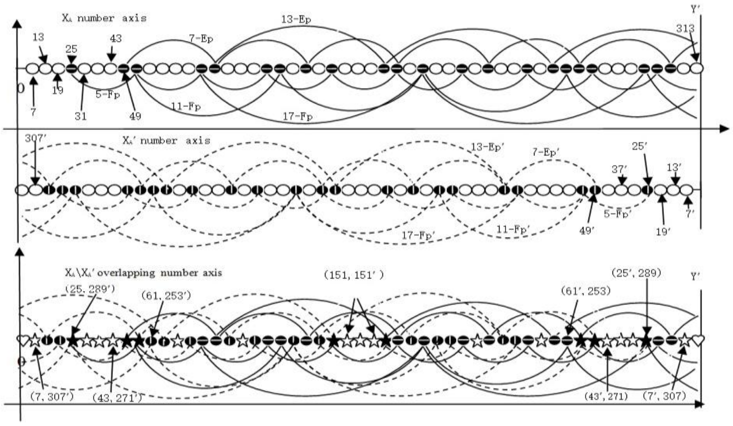


Figure 1: $X_A \backslash X_A'$ overlapping number axis (N_3=314): X_A and X_A' are oppositely overlapped. The solid pentagram is (H_A, H_A'), the hollow pentagram is (P_A, P_A'), the dot with horizontal line is (H_A, P_A'), the dot with vertical line is (H_A', P_A), and the heart shape is that the prime number 313 overlaps with1 of the other number axis and does not form (A, A')overlapping number axis points.

There are two cases of XAXA:

1) If $6P_a$ can not exactly divide (N_3-$2P_a$) nor can $6P_b$ exactly divide (N_3+$2P_b$) , there will be no frequency curve overlap, which is called $XAXA_1$.

2) If (N_3-$2P_a$) is divisible by $6P_a$ or (N_3+$2P_b$) is divisible by $6P_b$, then there is a corresponding frequency curve overlap, called $XAXA_2$.

3.2 Characteristics of the Overlapping Number Axis Points and the Group Count of $XAXA_1$

3.2.1 Characteristics of $XAXA_1$

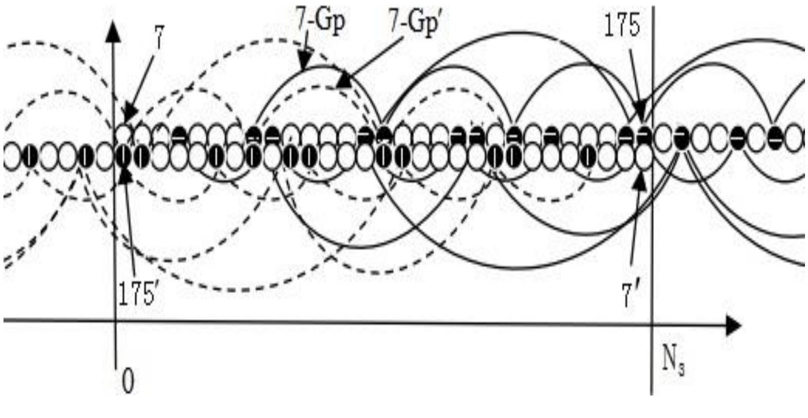


Figure 2: Pulling X_A' left and right can form any $X_A \backslash X_A'$ overlapping number axis (when N_3= 182, 182-2×7 can be exactly divided by 6×7, and while a prime factor 7 exists, 7-Gp/7-Gp′ is made overlapped)

1) Two identical X_A overlap in the opposite directions.

2) Two A odd numbers overlap to form (A, A') overlapping number axis points, and the two numbers are complementary, and their sum is equal to N_3.

3) There are (N_3/6-1) sets of (A, A') overlapping number axis points, which is one set less than (A, B) of equal length LXAXB.

4) Frequency curves with the same wavelength neither intersect nor overlap.

5) The (P_A, P_A') is evenly distributed on $XAXA_1$.

3.2.2 The number of (H_A, H_A') overlapping composite group count of frequency curve intersection

The frequency curves of different wavelengths of the two axes will intersect on $XAXA_1$ to form (H_A, H_A') overlapping number axis points with both Ep or Fp and Ep' or Fp'. The group count of (H_A,H_A') is equal to the quotient obtained by dividing the length of the overlapping number axis by 6 times the product of the wavelength roots of the relevant frequency curve.

The Ep\Gp intersection [1] of LXAXB is the same as the Ep\Ep' intersection of $XAXA_1$. Ep and Ep′ with the same wavelength neither intersect nor overlap, but Ep and other Ep' do intersect. One or more Ep will also intersect with one or more Ep' at the same overlapping number axes point, with $\sum_{ee'}$ comprehensively representing the Ep\Ep' intersection (H_A, H_A') group count.

The Ep\Sp intersection [1] of LXAXB is the same as the Ep\Fp′ intersection of $XAXA_1$. Both Ep and Fp' intersect, and one or more Ep will also intersect with one or more Fp' at the same overlapping number axes point, and the group count of (H_A, H_A') where Ep\Fp' intersects is represented by $\sum_{ef'}$.

The Fp\Gp intersection [1] of LXAXB is the same as the Fp\Ep' intersection of $XAXA_1$. Fp and Ep′ intersect with each other, and one or more Fp will also intersect with one or more Ep' at the same overlapping number axis point. The group count of (H_A, H_A') where Fp\Ep' intersects is represented by $\sum_{fe'}$.

The Fp\Sp intersection [1] of LXAXB is the same as the Fp\Fp' intersection of $XAXA_1$. Fp and Fp' with the same wavelength neither intersect nor overlap, but Fp and other Fp' do intersect. One or more Fp will also intersect with one or more Fp' at the same overlapping number axes point, with $\sum_{ff'}$ comprehensively representing the Fp\Fp' intersection (H_A, H_A')group count.

Same as the intersection of multiple frequency curves [1] of LXAXB, the two frequency curves can also intersect at the same point with the third frequency curve, and the three frequency curves can also intersect at the same point with the fourth frequency curve. The intersection of multiple frequency curves takes up more frequency curve axis points, which reduces the group count of (H_A, H_A') counted by the intersection of the two frequency curves, and such reduced group count is represented by $\sum_{efe'f'}$.

N_3HH is used to represent the group count of all (H_A, H_A') overlapping number axis points: $N_3HH=\sum_{ee'}+\sum_{ef'}+\sum_{fe'}+\sum_{ff'}-\sum_{efe'f'}$

It is the same as the LHH calculation formula [1] of the group count of overlapping composite of LXAXB, and the number is basically equal.

3.2.3 The group count of (H, P) overlapping number axis points of the frequency curve with only one number axis

X_A has $\#H_A$ H_A. Except for the N_3HH groups of (H_A, H_A') composed of H_A and H_A', the remaining H_A overlaps with P_A' to form the ($\#H_A$-N_3HH) groups of overlapping number line points with only Ep or Fp (H_A, P_A').

X_A has $\#H_A$ H_A'. Except for the N_3HH groups of (H_A, H_A') composed of H_A and H_A', the remaining H_A' overlaps with P_A to form the ($\#H_A'$-N_3HH) groups of overlapping number line points with only Ep′ or Fp′(H_A', P_A).

3.2.4 The group count of (P_A, P_A') overlapping axis points without frequency curve

The remaining prime axis points overlap to form (P_A, P_A') overlapping axis points without frequency curve. The sum of the four overlapping axis points is equal to the total group count of (A, A′) overlapping axis points.

The group count of (P_A, P_A') overlapping number axes points is obtained by using the residual relation:

$$d = (N_3/6 - 1) - N_3HH - 2(\#H_A - N_3HH) = (N_3/6 - 1) + N_3HH - 2\#H_A \tag{2}$$

It is known that the number of composite axis points of X_A and X_B with equal length is basically equal [2], so $2\#H_A$ and $(\#H_A+\#H_B)$ is basically equal. There are $(N_3/6-1)$groups of (A, A') overlapping axis points in $XAXA_1$, which is one group less than the (A, B) overlapping axis points of LXAXB with equal length, and the larger even number is ignored, so the group count of d and L_{N3} is basically equal.

3.2.5 Symmetry of $XAXA_1$

If the axis points A_1 of X_A and $(N_3-A_1)'$ of X_A' overlap, then $(N_3- A_1)$ of X_A must overlap with the complementary A_1' of X_A'. Although there are two different sets of overlapping axis points on $XAXA_1$, their odd pairs are the same. The distance between one set of overlapping axis points and the origin of X_A is equal to the distance between the other set of overlapping axis points and the origin of X_A', that is, they are symmetrical for the midpoint of $XAXA_1$ (Fig.1 and Fig.2).

If $(N_3/6-1)$ is an even number, the midpoint of $XAXA_1$ is not on the (A, A') overlapping axis points, and the axis points on both sides of the midpoint are symmetrical, then there are $(N_3/6-1) \div 2$ sets of (A, A') odd pairs. If $(N_3/6-1)$ is an odd number, the midpoint of $XAXA_1$ is a set of the same A, and the remaining points of the overlapping number axes are symmetric with each other, then there are $N_3/12$ groups of (A, A') odd pairs, and this difference is ignored when N_3 is larger.

Therefore, the group count of the composite pairs corresponding to (H_A, H_A') on $XAXA_1$ is equal to half of the group count of (H_A, H_A') overlapping axis points N_3HH, and the group count of P (1, 1) prime pairs corresponding to (P_A, P_A') overlapping axis points D_{N3} is equal to half of the group count of (P_A, P_A') overlapping axis points d.

3.2.6 The similarities and differences between $XAXA_1$ and LXAXB

3.2.6.1 The similarities

1) $XAXA_1$ has $(N_3/6-1)$ groups of (A, A'), which is one group less than group (A, B) of equal length LXAXB. For larger N_3, the difference of the total number of groups of overlapping number axis points is ignored, so the total number of groups is basically equal.

2) The rule of frequency curve intersection is consistent.

3) Frequency curves with the same wavelength neither intersect nor overlap.

4) The group count of N_3HH and LHH is basically equal.

5) The group count of (P_A, P_A') overlapping axis points d is basically equal to that of (P_A, P_B) overlapping axis points L_{N3}.

3.2.6.2 The differences

1) $XAXA_1$ is composed of two X_A with opposite directions. LXAXB is composed of one X_A and one X_B, and the directions of the two axes are the same.

2) $XAXA_1$ overlapping axis points are two A odd numbers, two numbers are complementary, and their sum is equal to N_3; the overlapping axis points of LXAXB are one A and one B, and the difference between the two numbers is 2.

3) $XAXA_1$ is symmetrical for the midpoint; LXAXB has no symmetry.

4) The (P_A, P_A') overlapping axis points are evenly distributed on $XAXA_1$. The (P_A, P_B) overlapping axis points are dense first and then sparse on LXAXB.

5) The P (1, 1) prime pair group count D_{N3} of N_3 is equal to half of the group count d of the $(P_A,$

P_A') overlapping axis points of $XAXA_1$. The group count of twin primes L_{N3} which is smaller than N_3 is equal to the group count of (P_A, P_B) overlapping axis points of LXAXB.

3.2.7 Variance analysis

According to the comparison between randomly selected $XAXA_1$ and LXAXB of equal length, the group count of P (1, 1) prime pairs of $XAXA_1$ is slightly less than half of the group count of twin prime pairs of LXAXB of equal length.

From the analysis of the residual relationship, for the even number of N_3, $\#H_A$ is fixed, only the change of the group count of (H_A, H_A') will affect the group count of (P_A, P_A').

3.2.7.1 The intersection of non-composite number dash lines of a frequency curve

Ep extends to the left side of the Y axis with a dash line, and has a dash line intersection with X_A, which is the non-composite number dash line intersection of the frequency curve. It is the prime number of the wavelength root itself, and the non-composite dash line intersection of Ep is at the left end. Fp has no dash line intersection.

X_A flips 180 °to become X_A', and the dash line intersection of Ep' moves to the right.

3.2.7.2 The influence of the intersection point of non-composite dash line on (H_A, H_A')

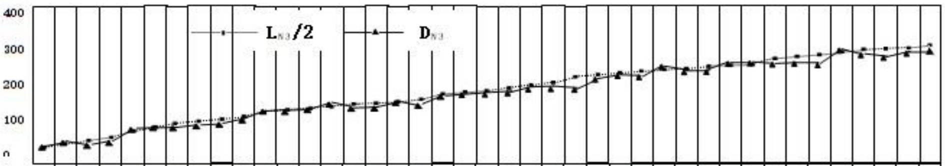
The number axis segment from 0 to the intersection of non-composite dash lines is the non-composite segment (NOH) of the frequency curve. Remove NOH, the remaining number axis segment is the segment where the frequency curve intersects with other frequency curves. The exact group conut of (H_A, H_A') is obtained by dividing the length of the intersection area by 6 times the product of the wavelength roots of the correlated frequency curve.

Both Ep and Sp have NOH, and the NOH of Ep and Sp on LXAXB is at the left end. The intersection of Ep\Sp: The two NOH overlap and the intersection area only remove the larger wavelength NOH.

The intersection of Ep\Ep': remove the NOH of the left end Ep, and then remove the NOH of the right end Ep'. Compared with the Ep\Sp intersection area with both NOH of LXAXB, the smaller wavelength NOH is removed, which shortens the intersection area and may reduce one group (H_A, H_A'). The larger the even number, the more the frequency curve; the more the intersection of Ep\ Ep', and the more the chance of reducing one group (H_A, H_A'), but the proportion of reduced groups in the whole N_3HH is very small. According to the group count of all Ep\Ep′ intersection, the area of the curved trapezoid is counted. The curved trapezoid is composed of (#Ep-1)×#Ep vertical lines representing Ep\Ep′ intersection. Each vertical line is composed of $N_3/(6P_a*P_a')$ points representing the group count of (H_A, H_A'). The denominator of the reduced group count in the proportion of N_3HH is the area of the curved trapezoid, and the numerator is half the length of the curved edge (calculated as equal as or less than half of the group count of each vertical line (H_A, H_A')), so the proportion of (H_A, H_A') reduction is very small.

3.2.7.3 Influence of intersection starting point on (H_A, H_A')

Fp\Fp' has no NOH, Ep\Fp', Fp\Ep' has only one NOH, and these three kinds of intersections have not shortened the intersection area because of X_A flipping 180 °. However, compared with the LXAXB overlap axis, there are also differences in the length of the intersection area due to different starting points, resulting in differences between the group count of (H_A, H_A') and (H_A, H_B).



N_3	14	1004	1994	3032	4016	5006	6002	6998	8006	9008	10016	11006	12014	13004
w	1				1	1						1	1	1
$D_{N3}/(L_{N3}/2)$	100.0000	105.8823	90.0000	87.8048	103.8461	98.4126	87.3239	88.8888	88.5057	94.7368	101.9607	97.2727	97.4358	102.4193
$L_{N3}/2$	1	17	30	41	52	63	71	81	87	95	102	110	117	124
D_{N3}	1	18	27	36	54	62	62	72	77	90	104	107	114	127

N_3	13994	15014	16004	17012	18002	19004	20012	21002	22004	23006	24008	25022	26006	27008
w			1			1				1			1	
$D_{N3}/(L_{N3}/2)$	91.5384	96.3235	100.0000	90.5405	97.4522	99.3865	97.0760	96.0674	97.3118	92.2680	88.0597	95.5882	96.6666	93.4883
$L_{N3}/2$	130	136	142	148	157	163	171	178	186	194	201	204	210	215
D_{N3}	119	131	142	134	153	162	166	171	181	179	177	195	203	201

N_3	28004	29006	30026	31016	32024	33008	34004	35012	36026	37028	38018	39002	40022
w	1			1									
$D_{N3}/(L_{N3}/2)$	103.1390	96.0698	95.2991	100.8368	98.3673	92.9411	95.4022	89.9628	100.7272	96.0573	92.2807	95.8762	93.8983
$L_{N3}/2$	223	229	234	239	245	255	261	269	275	279	285	291	295
D_{N3}	230	220	223	241	241	237	249	242	277	268	263	279	277

Figure 3: There is no significant difference between D_{N3} and $L_{N3}/2$ for even number N_3 which is without prime factors

The intersection starting point of two frequency curves on LXAXB is fixed, such as 145, the intersection starting point of 5-Fp\11-Sp (abscissa); 121, the intersection starting point of 11-Fp\17-Sp. The intersection starting point of $XAXA_1$ is related to N_3. When N_3 is equal to 1004, 10004 and 100004, the intersection starting point of 5-Fp\11-Fp' is 25, 115 and 25, and the intersection starting point of 11-Fp\17-Fp' is 715, 1045 and 979. The intersection area is slightly longer when the starting point of the intersection is small, and the intersection area is slightly shorter when the starting point of the intersection is large, which may make the (H_B, H_B') of $XAXA_1$less than 1 group or more than 1 group of (H_A, H_B) of LXAXB. The smaller even number will affect the ratio of the table method group count to the group count of twin prime, but the differences caused by different starting points are partially offset by the intersection of many frequency curves and the intersection of multiple frequency curves. Although the number of differences is not small, it has an impact on the group count of overlapping composite number, but it has little effect on the ratio of the group count of twin prime.

Due to the combined effect of these factors, the overlapping composite number of $XAXA_1$ is slightly less than that of LXAXB, so (P_A, P_A') is reduced, but the proportion of reduction is very small. According to the comparison between randomly selected $XAXA_1$ and isometric LXAXB, the average group count of P (1, 1) prime pairs of $XAXA_1$ is about 1.2% less than half of the group count of twin prime pairs of LXAXB, but not up to 5%. According to statistical regulations, there is no significant difference (Fig. 3).

Therefore, the group count of P (1, 1) prime pairs corresponding to (P_A, P_A') of $XAXA_1$ is about half of the group count of twin prime pairs smaller than N_3: $D_{N3} \approx 0.5L_{N3}$

If (N_3-3) is a prime number, the N_3 can also be expressed as (P_B+3) prime pairs (In the figure, w= 1 indicates that the even number has the N_3=(P_B+3) table method, but the group count can be ignored.)

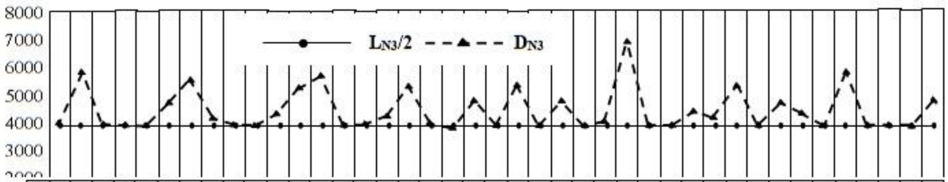
3.3 Characteristics of the overlapping number axis points and the group count of $XAXA_2$

On $XAXA_1$, the frequency curves with the same wavelength do not intersect or overlap, but intersect with other frequency curves. The unintersected number axis points overlap with the prime number axis points of another number axis, forming (H_A', P_A) and (H_A, P_A') overlapping number axis points.

On $XAXA_2$, if (N_3-2P_a) can be exactly divided by 6P_a, then the Ep with P_a as the wavelength root completely overlaps with the Ep' with the same wavelength (Fig.2), and the total number of composite number axis points(H_A, H_A'), then (H_A, H_A') increases. At the same time, the overlap with the other number axis primes is reduced, so that (P_A, P_A') increases. The increased group count is about ($L_{N3}\times 0.494\times(1+3\div P_a)\div P_a$), which means this increased group count is about $1/P_a$ of half group count of twin prime (Figure 4). And every (P_a-1) N_3, there is a N_3 that can be exactly divided by the ($6P_a$), so that (P_A, P_A') increases.

Similarly, if (N_3+2P_b) can be exactly divided by $6P_b$, then the Fp of the P_b for the wavelength root completely overlaps with the Fp' with the same wavelength root, which reduces the overlap with the prime number of the other number axis, and increases the (P_A, P_A'). And every (P_A-1)N_3, there is a N_3 that can be exactly divided by the ($6P_b$), so that (P_A, P_A') increases. These primes that make $6P_a$ exactly divide (N_3-2P_a) or $6P_b$ exactly divide (N_3+2P_b) and increase (P_A, P_A') are called prime factors of the even number.

If multiple P_a can make $6P_a$ exactly divide (N_3-2P_a) or multiple P_b can make $6P_b$ exactly divide ((N_3+2P_b), or both P_a and P_b can make $6P_a$ exactly divide (N_3-2P_a), and $6P_b$ exactly divide (N_3+2P_b), then (P_A, P_A') is affected by these prime factors.



N_3	W	D_{N3}	$L_{N3}/2$	Prime factors
10000004		4160	4084	53, 89
10000010		5951	4084	5, 11
10000016		4042	4084	
10000022		4071	4084	107
10000028		4059	4084	
10000034		4855	4084	7, 61
10000040	1	5695	4084	5, 23
10000046		4298	4085	19
10000052		4073	4085	
10000058		4062	4085	
10000064		4420	4085	13, 601
10000070		5393	4085	5, 97
10000076		5796	4085	7, 11, 17, 191
10000082		4032	4085	
10000088		4080	4085	149, 839
10000094		4336	4085	29, 43, 401
10000100		5421	4085	5, 73, 137
10000106		4120	4085	71
10000112		3993	4085	
10000118		4880	4085	7
10000124	1	4048	4085	
10000130		5445	4085	5, 103, 971
10000136	1	4038	4085	
10000142		4921	4085	11, 13, 269
10000148		4033	4085	
10000154	1	4188	4085	41
10000160		6981	4085	5, 7, 19, 47
10000166		4043	4085	
10000172		4030	4085	
10000178		4547	4085	17, 23
10000184		4363	4085	31, 37, 109
10000190	1	5484	4085	5
10000196	1	4073	4085	
10000202	1	4855	4085	7
10000208		4464	4085	11
10000214	1	4081	4085	
10000220		5942	4085	5, 13
10000226		4040	4085	
10000232		4080	4085	
10000238		3999	4085	
10000244		4900	4085	7, 139, 257

Figure 4: The influence of prime factors on continuous N_3 even number D_{N3}

The increase of (P_A, P_A') is inversely proportional to the size of the prime factor. The smaller the prime factor, the more (P_A, P_A') increases. It is also related to the number of prime factors. The more prime factors, the more (P_A, P_A') increase (Fig.4). However, the prime factor does not change the symmetry of the overlapping number axis. And due to symmetry, the increased P (1, 1) prime pairs are only half of the increased (P_A, P_A') overlapping axis points.

Therefore, the group count of (P_A, P_A') overlapping axis points of XAXA is approximately equal to or more than the group count of (P_A, P_B) overlapping axis points of LXAXB, and the group count of P (1, 1) prime pairs corresponding to (P_A, P_A') is approximately equal to or more than half of the group count of twin prime pairs: $D_{N3}\geq 0.5L_{N3}$.

3.4 The Group Count of P (1, 1) Prime Pair of Infinity N_3

P_A is infinite [2]. When N_3 increases to ($2N_3$ -2), there will be no P_A from 0 to N_3 number axis and no P_A from N_3 to ($2N_3$-2) number axis, and the intersection rule of frequency curve remains unchanged. Therefore, N_3 doubling still follows the rule of $D_{N3}\geq 0.5L_{N3}$. N_3 infinitely doubles, and these properties will not change. At present, although it is not certain that the group count of twin prime is infinite; the known number of twin primes will not disappear. The group count of P (1, 1) prime pairs of infinite N_3 must be more than half of the known group count of twin prime.

3.5 Group Count of P (1, 1) Prime Pairs of Continuous N_3 Even Number

In the planar rectangular coordinate system, a parabola ($L_{N3}/2$ curve) is formed by connecting the points with N_3 as the abscissa and $0.5L_{N3}$ as the vertical coordinate, which is half of the group count of twin prime smaller than N_3. Then connect the points with N_3 as the abscissa and the P (1, 1) prime pair of N_3 as the vertical coordinate to the group count D_{N3} (D_{N3} connection). The influence of the prime factor makes the D_{N3} of the adjacent N_3 vary greatly, and the standard curve cannot be formed. The above of the connection line is uneven and irregular, like a crocodile tail. With the increase of the even number, the shape is like a hand-painted porcupine back, and the many lowest points below the connection line (the (P_A, P_A') group count of $XAXA_1$ is the point of the vertical coordinate) form a smooth curve, which is basically consistent with the $L_{N3}/2$ curve. The connection line does not break through the $L_{N3}/2$ curve downward (basically) no matter how it fluctuates. The overall trend of the connection increases with the increase of N_3 (Fig.4).

4. Conclusion

The even number 8 can be expressed as the sum of (3+5), and the other even number which minus 2 can be exactly divided by 6 can be expressed as the sum of two P_A. The table method group count is approximately equal to or more than half of the group count of twin prime smaller than the even number.

References

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[2] Xiao Yichun. Classification of Prime Number. Digital Users. 2022 (5): 140.