Review article

Investigated prime numbers corresponding to trivial zeros of Riemann hypothesis

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Abstract

At first, each prime number was related to each non-trivial zero point, we thought from equation (2).
However, when calculated, it turned out that each prime number is not related to the nontrivial zeros, and is related to trivial zeros.

Introduction

$$\zeta(s) = \sum_{n=1}^{\infty} \frac{1}{n^s} \tag{1}$$

$$\zeta(s) = \frac{2^s}{2^s - 1} \frac{3^s}{3^s - 1} \frac{5^s}{5^s - 1} \frac{7^s}{7^s - 1} \cdots\cdots \tag{2}$$

We started searching by considering that one or more of the prime numbers infinitely following 2^s, 3^s, 5^s, 7^s, 11^s in equation (2) should be close to zero.

zeta[17^(0.5+21.022i)]
As in the above example, we set a star on which non-trivial zeros and which prime numbers correspond.

And we prepared a correspondence table like the one below, but it turned out finally that it corresponded to obvious zero point in the end.
The one closest to zero was taken as the prime number corresponding to the nontrivial zero point.

I chose the one with the smallest value at which non-trivial zero, as shown below, and attached a star. Then it became as follows.
Marks that are close to trivial zero points.
zeta[17^(0.5+21.022i)]

It was almost the same as what I had attached a star on.
We found that ^s of prime numbers such as 2^s, 3^s, 5^s, 7^s, 11^s, 13^s in equation (2) are associated with trivial zero points.

I got it in the previous manuscript
zeta[17^(0.5+21.022i)] etc.
There is nothing in the form of the form which takes a value which almost agrees with the trivial zero point other than the one taking a very low value.

For example,

Zeta[7^(0.5+i98.8312)]

0.0641562... −
0.00343108... i

(using the principal branch of the logarithm for complex exponentiation)

7^(0.5+i98.8312) = -2.05812... - 1.66257... i------(a)

zeta[17^(0.5+21.022i)]

$-0.00168725\ldots +$
$0.00422886\ldots i$

(using the principal branch of the logarithm for complex exponentiation)

17^(0.5+21.022i)= −4.08807... + 0.536333... i------(b)

Zeta[17^(0.5+i105.447)]

$-0.00479939\ldots -$
$0.0138017\ldots i$

(using the principal branch of the logarithm for complex exponentiation)

17^(0.5+i105.447)= −3.93584... − 1.22848... i------(c)
(a)(b)(c) are relation consist.

Also, as shown below, if (prime)^s is very close to 0,
zeta [2^(0.5 + i 25.0109)] =
Its value is not close to 0 as shown in Fig.

zeta[2^(0.5+i25.0109)]=

$0.189967\ldots +$
$0.381792\ldots i$

(using the principal branch of the logarithm for complex exponentiation)

2^(0.5+i25.0109)= 0.0812375... − 1.41188... i
and,
zeta[3^(0.5+i32.93506)]

$0.281268\ldots +$
$0.310896\ldots i$

(using the principal branch of the logarithm for complex exponentiation)

3^(0.5+i32.93506)= 0.0944298... − 1.72947... i

I wrote in the previous manuscript as follows. But this was a mistake.

T_1 =14.1347......Correspond to pimary number 3,17

T_2 =21.022...... Correspond to pimary number 17

T_3 =25.0108......Correspond to pimary number 23,31

T_4 =30.4248...... Correspond to pimary number 37

T_5 =32.9350...... Correspond to pimary number 41,73,107

T_6 =37.5861...... Correspond to pimary number 45,71

T_7 =40.9187...... Correspond to pimary number 37

T_8 =43.3270...... Correspond to pimary number 17

T_9 =48.0051...... Correspond to pimary number 19

T_{10}=49.7738...... Correspond to pimary number 17

T_{11}=52.9703...... Correspond to pimary number 53

T_{12}=56.4462...... Correspond to pimary number 17

T_{13}=59.3470...... Correspond to pimary number 53, 59

T_{14}=60.8317...... Correspond to pimary number 19

T_{15}=65.1125...... Correspond to pimary number 19,23,41

T_{16}=67.0798...... Correspond to pimary number 2, 23, 71

T_{17}=69.5464...... Correspond to pimary number 61

T_{18}=72.0672...... Correspond to pimary number 11,17

T_{19}=75.7047...... Correspond to pimary number 7,19,23

T_{20}=77.1448...... Correspond to pimary number 13

T_{21}=79.3374...... Correspond to pimary number 13,29

T_{22}=82.9104...... Correspond to pimary number 67

T_{23}=84.7355...... Correspond to pimary number 71,103

T_{24}=87.4253...... Correspond to pimary number 17

....
....
....

Discussion

2^(0.5+i14.1347)=−1.31715... − 0.514893... i

2^(0.5+i21.022)=−0.594904... + 1.28300... i

zeta[2^(0.5+i25.0109)]=

0.189967... +
0.381792... *i*

(using the principal branch of the logarithm for complex exponentiation)

2^(0.5+i25.0109)=0.0812375... − 1.41188... i..........££££

2^(0.5+i30.4249)= −0.876633... + 1.10974... i

2^(0.5+i32.93506)=−0.946359... − 1.05091... i

2^(0.5+i37.9351)=0.562331... + 1.29761... i

2^(0.5+i40.9187)=−1.40870... − 0.124780... i

3^(0.5+i14.1347)=−1.70425... + 0.309080... i

3^(0.5+i21.022)= −0.779658... − 1.54665... i

3^(0.5+i25.0109)= −1.21039... + 1.23893... i

3^(0.5+i30.4249)= −0.735313... + 1.56822... i

zeta[3^(0.5+i32.93506)]

0.281268... +
0.310896... *i*

(using the principal branch of the logarithm for complex exponentiation)

3^(0.5+i32.93506)= 0.0944298... − 1.72947... i..........££££

3^(0.5+i37.9351)= −1.16218... − 1.28427... i

3^(0.5+i40.9187)=0.976998... + 1.43020... i

5^(0.5+i14.1347)= −1.62421... − 1.53686... i

5^(0.5+i21.022)= −1.67530... + 1.48100... i

5^(0.5+i25.0109)= −1.86150... + 1.23888... i

5^(0.5+i30.4249)=0.601388... − 2.15368... i

zeta[5^(0.5+i32.93506)]

0.0228509... −
0.0152426... *i*

(using the principal branch of the logarithm for complex exponentiation)

5^(0.5+i32.93506)= −2.05943... + 0.871056... i..........££

5^(0.5+i37.9351)= −0.459280... − 2.18839... i

5^(0.5+i40.9187)=−2.22069... + 0.261775... i

7^(0.5+i14.1347)=−1.90037... + 1.84081... i..........££

7^(0.5+i21.022)=−2.63995... − 0.175070... i

7^(0.5+i25.0109)=−0.0680465... − 2.64488... i..........££££

7^(0.5+i30.4249)=−2.33922... + 1.23614... i

7^(0.5+i32.93506)=0.817136... + 2.51640... i

7^(0.5+i37.9351)=−0.0241587... − 2.64564... i..........££££

7^(0.5+i40.9187)=−1.23698... − 2.33878... i

Zeta[7^(0.5+i98.8312)]

0.0641562... −
0.00343108... *i*

(using the principal branch of the logarithm for complex exponentiation)

7^(0.5+i98.8312) = −2.05812... − 1.66257... i..........££

11^(0.5+i14.1347)=−2.61198... + 2.04391... i

11^(0.5+i21.022)= 3.28274... + 0.472899... i

11^(0.5+i25.0109)= −3.18446... − 0.926949... i

11^(0.5+i30.4249)=−2.53863... − 2.13433... i

11^(0.5+i32.93506)= −3.00774... − 1.39769... i

11^(0.5+i37.9351)= −3.28334... + 0.468690... i

11^(0.5+i40.9187)= −2.47282... − 2.21024... i

13^(0.5+i14.1347)= 0.454794... − 3.57675... i

13^(0.5+i21.022)= −3.14092... − 1.77049... i

13^(0.5+i25.0109)= 0.895372... + 3.49261... i

13^(0.5+i30.4249)=−3.16159... + 1.73330... i

13^(0.5+i32.93506)= −3.39158... + 1.22359... i

13^(0.5+i37.9351)= −3.59167... + 0.316024... i

13^(0.5+i40.9187)=−1.02742... − 3.45607... i

17^(0.5+i14.1347)= −2.89004... + 2.94069... i

zeta[17^(0.5+21.022i)]

− 0.00168725... +
0.00422886... *i*

(using the principal branch of the logarithm for complex exponentiation)

17^(0.5+i21.022)=−4.08807... + 0.536333... i.......... ££

Zeta[17^(0.5+i43.3271)]

− 0.00329615... −
0.00902419... *i*

(using the principal branch of the logarithm for complex exponentiation)

17^(0.5+i43.3271)=−4.01188... − 0.951230... i.......... ££

Zeta[17^(0.5+i49.7738)]

− 0.00594552... +
0.0182577... *i*

(using the principal branch of the logarithm for complex exponentiation)

17^(0.5+i49.7738)=−3.87048... + 1.42106... i.......... ££

Zeta[17^(0.5+i56.4462)]

− 0.00467447... +
0.0133697... *i*

(using the principal branch of the logarithm for complex exponentiation)

17^(0.5+i56.4462)=−3.94247... + 1.20703... i.......... ££

Zeta[17^(0.5+i72.0672)]

−0.000957110... +
0.000647963... i

(using the principal branch of the logarithm for complex exponentiation)

17^(0.5+i72.0672)= −4.12213... + 0.0897520... i..........££

17^(0.5+i98.8312)=−3.78446... − 1.63643... i

Zeta[17^(0.5+i105.447)]

−0.00479939... −
0.0138017... i

(using the principal branch of the logarithm for complex exponentiation)

17^(0.5+i105.447)= −3.93584... − 1.22848... i..........££

19^(0.5+i14.1347)= −3.10475... − 3.05950... i

19^(0.5+i21.022)=2.59240... − 3.50420... i

19^(0.5+i25.0109)= −0.799056... − 4.28503... i

19^(0.5+i30.4249)= −0.212938... + 4.35369... i

zeta[19^(0.5+i32.93506)]

−0.0148318... +
0.0235496... i

(using the principal branch of the logarithm for complex exponentiation)

19^(0.5+i32.93506)= −3.99048... + 1.75386... i.........££

19^(0.5+i37.9351)= 0.741950... − 4.29529... i

19^(0.5+i40.9187)= 1.96904... + 3.88882... i

23^(0.5+i14.1347)=4.52611... + 1.58565... i

23^(0.5+i21.022)= −4.78746... + 0.283203... i

23^(0.5+i25.0109)=−4.76232... + 0.565949... i

23^(0.5+i30.4249)=1.96202... + 4.37613... i

23^(0.5+i32.93506)=−4.40811... + 1.88906... i

23^(0.5+i37.9351)= 4.34872... − 2.02203... i

23^(0.5+i40.9187)=−4.19730... + 2.32006... i

29^(0.5+i14.1347)=−4.79678... − 2.44763... i

29^(0.5+i21.022)= −0.545432... + 5.35747... i

29^(0.5+i25.0109)=−4.43267... + 3.05801... i

29^(0.5+i30.4249)=−1.83582... + 5.06258... i

29^(0.5+i32.93506)= −3.14844... − 4.36891... i

29^(0.5+i37.9351)= −2.60162... + 4.71504... i

29^(0.5+i40.9187)= 4.86138... − 2.31667... i

31^(0.5+i14.1347)= −0.866742... − 5.49989... i

31^(0.5+i21.022)= −5.55514... + 0.374717... i

31^(0.5+i25.0109)=−2.70194... − 4.86821... i

31^(0.5+i30.4249)= −3.85442... − 4.01789... i

31^(0.5+i32.93506)= 5.56776... + 0.00689896... i

31^(0.5+i37.9351)= −0.597090... − 5.53566... i

31^(0.5+i40.9187)=−3.64367... + 4.20995... i

Zeta[37^(0.5 + i30.4249)]

0.000376748... −
0.00374031... *i*

(using the principal branch of the logarithm for complex exponentiation)

37^(0.5+i30.4249)= −6.05595... + 0.570493... i..........££

Zeta[37^(0.5+i40.9187)]

0.000356135... +
0.00399719... *i*

(using the principal branch of the logarithm for complex exponentiation)

37^(0.5+i40.9187)= −6.05285... − 0.602494... i..........££

Zeta[37^(0.5+i75.7047)]

0.000473048... +
0.00164874... *i*

(using the principal branch of the logarithm for complex exponentiation)

37^(0.5+i75.7047)= −6.07663... − 0.273003... i..........££

41^(0.5+i14.1347)= −3.89518... + 5.08208... i

41^(0.5+i21.022)= −5.69979... + 2.91760... i

41^(0.5+i25.0109)=1.28965... − 6.27191... i

41^(0.5+i30.4249)= 6.36281... − 0.717413... i

41^(0.5+i32.93506)= −6.25516... + 1.36856... i

41^(0.5+i37.9351)= −5.62863... + 3.05262... i

41^(0.5+i40.9187)= 2.56821... + 5.86552... i

43^(0.5+i14.1347)=−6.36377... + 1.58189... i

43^(0.5+i21.022)= −5.66399... − 3.30443... i

43^(0.5+i25.0109)= 6.45524... − 1.15319... i

43^(0.5+i30.4249)= 1.52044... + 6.37874... i

43^(0.5+i32.93506)= −1.41540... − 6.40286... i

43^(0.5+i37.9351)= −1.69189... − 6.33542... i

43^(0.5+i40.9187)= −6.55351... + 0.226979... i

47^(0.5+i14.1347)= −3.62529... − 5.81870... i

47^(0.5+i21.022)= 5.04598... − 4.64091... i

47^(0.5+i25.0109)=−3.14803... + 6.09015... i

47^(0.5+i30.4249)= −4.25387... − 5.37630... i

47^(0.5+i32.93506)= 2.85580... + 6.23253... i

zeta[47^(0.5+i37.9351)]

0.979943... +
0.458201... *i*

(using the principal branch of the logarithm for complex exponentiation)

47^(0.5+i37.9351)=0.194154... + 6.85290... i-------££££

47^(0.5+i40.9187)= 6.13264... + 3.06444... i

53^(0.5+i14.1347)= 6.61803... − 3.03343... i

53^(0.5+i21.022)= −1.52666... + 7.11824... i

53^(0.5+i25.0109)= 2.43061... − 6.86237... i

53^(0.5+i30.4249)=1.12810... + 7.19218... i

53^(0.5+i32.93506)=2.73888... - 6.74526... i

53^(0.5+i37.9351)= 7.15851... - 1.32503... i

53^(0.5+i40.9187)=4.50463... - 5.71911... i

59^(0.5+i14.1347)=3.57895... + 6.79641... i

59^(0.5+i21.022)=-4.80476... - 5.99285... i

59^(0.5+i25.0109)= 0.910985... + 7.62693... i

59^(0.5+i30.4249)=-0.262957... - 7.67664... i

59^(0.5+i32.93506)=-5.38149... + 5.48084... i

59^(0.5+i37.9351)= -5.65282... - 5.20054... i

59^(0.5+i40.9187)= -7.23341... - 2.58415... i

61^(0.5+i14.1347)= 0.105398... + 7.80954... i

61^(0.5+i21.022)= 0.195177... - 7.80781... i

61^(0.5+i25.0109)=-5.11991... + 5.89801... i

61^(0.5+i30.4249)= 6.48646... - 4.35038... i

61^(0.5+i32.93506)= -7.45354... - 2.33339... i

61^(0.5+i37.9351)= 3.30955... - 7.07438... i

61^(0.5+i40.9187)=1.06208... - 7.73770... i

Zeta[61^(0.5+i69.5464)]

0.00150589... −
0.000642545... *i*

(using the principal branch of the logarithm for complex exponentiation)

61^(0.5+i69.5464)= −7.80973... − 0.0901801... i..........££

67^(0.5+i14.1347)=

67^(0.5+i21.022)=

67^(0.5+i25.0109)=

67^(0.5+i30.4249)=

67^(0.5+i32.93506)=

67^(0.5+i37.9351)=

67^(0.5+i40.9187)=

Zeta[67^(0.5+i82.9104)]

0.000173911... +
0.00945142... *i*

(using the principal branch of the logarithm for complex exponentiation)

67^(0.5+i82.9104)=−8.14109... + 0.850049... i..........££

71^(0.5+i14.1347)= −7.13264... − 4.48614... i

71^(0.5+i21.022)= −0.628560... + 8.40267... i

71^(0.5+i25.0109)=8.25703... − 1.67972... i

71^(0.5+i30.4249)= −5.32764... − 6.52811... i

71^(0.5+i32.93506)=−4.69319... + 6.99814... i

71^(0.5+i37.9351)= −0.730759... − 8.39440... i

71^(0.5+i40.9187)=0.546699... − 8.40840... i

73^(0.5+i14.1347)=−4.94139... − 6.97013... i

73^(0.5+i21.022)= −5.22934... + 6.75677... i

73^(0.5+i25.0109)=7.52210... + 4.05192... i

73^(0.5+i30.4249)= 1.36716... − 8.43391... i

73^(0.5+i32.93506)=−8.52589... + 0.556080... i

73^(0.5+i37.9351)=7.03324... − 4.85114... i

73^(0.5+i40.9187)= 7.96838... − 3.08300... i

79^(0.5+i14.1347)= 4.25949... − 7.80107... i

79^(0.5+i21.022)= −6.51341... − 6.04777... i

79^(0.5+i25.0109)= −6.95615... + 5.53281... i

79^(0.5+i30.4249)= 4.85364... + 7.44595... i

79^(0.5+i32.93506)=7.30937... − 5.05698... i

79^(0.5+i37.9351)= −6.50963... + 6.05183... i

79^(0.5+i40.9187)= −8.54534... + 2.44481... i

83^(0.5+i14.1347)= 8.48443... − 3.31881... i

83^(0.5+i21.022)= 1.95155... − 8.89896... i

83^(0.5+i25.0109)=−7.70218... − 4.86584... i

83^(0.5+i30.4249)= −7.27631... + 5.48228... i

83^(0.5+i32.93506)= 4.75630... + 7.77030... i

zeta[83^(0.5+i37.9351)]

−0.263299... −
4.08528... *i*

(using the principal branch of the logarithm for complex exponentiation)

83^(0.5+i37.9351)= −3.93026... − 8.21907... i---------££

83^(0.5+i40.9187)= 1.55601... − 8.97657... i

89^(0.5+i14.1347)= 7.71263... + 5.43280... i

89^(0.5+i21.022)= 9.37452... + 1.05753... i

89^(0.5+i25.0109)= 6.34934... − 6.97753... i

89^(0.5+i30.4249)=−0.875793... − 9.39324... i

89^(0.5+i32.93506)= −9.28383... − 1.67646... i

89^(0.5+i37.9351)= 7.61810... + 5.56458... i

89^(0.5+i40.9187)= 1.07319... + 9.37274... i

97^(0.5+i14.1347)= −2.52736... + 9.51906... i

97^(0.5+i21.022)=−3.38639... + 9.24837... i

97^(0.5+i25.0109)= 2.44135... + 9.54148... i

97^(0.5+i30.4249)=5.68841... + 8.04003... i

97^(0.5+i32.93506)= 9.76820... − 1.25787... i

97^(0.5+i37.9351)= −7.17586... − 6.74588... i

97^(0.5+i40.9187)= 2.59341... − 9.50127... i

101^(0.5+i14.1347)= −7.42083... + 6.77726... i

101^(0.5+i21.022)= −9.36865... + 3.63708... i

101^(0.5+i25.0109)= −6.92493... + 7.28322... i

101^(0.5+i30.4249)= −5.78774... + 8.21596... i

101^(0.5+i32.93506)= 3.61519... + 9.37712... i

101^(0.5+i37.9351)= 6.60151... − 7.57761... i

101^(0.5+i40.9187)= 9.44343... + 3.43827... i

103^(0.5+i14.1347)=−9.08065... + 4.53232... i

zeta[103^(0.5+i21.022)]

0.00136307... +
0.00955359... *i*

(using the principal branch of the logarithm for complex exponentiation)

103^(0.5+i21.022)= −10.1400... − 0.425120... i--------££

103^(0.5+i25.0109)= −9.63310... + 3.19428... i

103^(0.5+i30.4249)= −9.49651... + 3.57997... i

103^(0.5+i32.93506)= −2.78357... + 9.75970... i

103^(0.5+i37.9351)= 10.0872... − 1.11696... i

103^(0.5+i40.9187)= 4.13156... + 9.26986... i

Zeta[103^(0.5+i84.7355)]

0.00236420... +
0.00600092... *i*

(using the principal branch of the logarithm for complex exponentiation)

103^(0.5+i84.7355)=−10.1452... − 0.273951... i..........££

zeta[103^(0.5+i103.726)]

−0.00395087... +
0.0195608... *i*

(using the principal branch of the logarithm for complex exponentiation)

103^(0.5+i103.726)= −10.1179... − 0.793068... i..........££

zeta[107^(0.5+i14.1347)]

0.00324267... +
0.0223079... *i*

(using the principal branch of the logarithm for complex exponentiation)

107^(0.5+i14.1347)= −10.3145... − 0.781144... i

107^(0.5+i21.022)= −6.88242... − 7.72219... i

107^(0.5+i25.0109)=−8.34165... − 6.11693... i

107^(0.5+i30.4249)=−7.21657... − 7.41087... i

Zeta[107^(0.5 + i32.9351)]

0.00671072... −
0.00975244... *i*

(using the principal branch of the logarithm for complex exponentiation)

107^(0.5 +i32.9351)= −10.3366... + 0.392516... i..........££

zeta[109^(0.5+i14.1347)]

−0.650000... −
0.314195... *i*

(using the principal branch of the logarithm for complex exponentiation)

109^(0.5+i14.1347)=-9.85184... - 3.45560... i

....
....

result

In this way it is assumed that prime numbers are related to trivial zero points and are not related to nontrivial zeros.

And,
zeta[3^(0.5+i32.93506)]

0.281268... +
0.310896... *i*

(using the principal branch of the logarithm for complex exponentiation)

3^(0.5+i32.93506)= 0.0944298... - 1.72947... i..........££££
and,
zeta[47^(0.5+i37.9351)]

0.979943... +
0.458201... *i*

(using the principal branch of the logarithm for complex exponentiation)

47^(0.5+i37.9351)= 0.194154... + 6.85290... i--------££££
etc.
In many cases, it does not take a value close to 0 as shown in Fig.
3^(0.5+i32.93506)= 0.0944298... - 1.72947... i
and
47^(0.5+i37.9351)= 0.194154... + 6.85290... i etc.
It seems better to examine by the way
Zeta[107^(0.5 + i32.9351)].

References

1) https://en.wikipedia.org/wiki/Riemann_hypothesis

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I would like to receive an email. I will not answer the phone.

Currently 56 years old
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（I am very poor of English. Almost all document are google-translation.）
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