Riemann's Hypothesis and Conjecture of Birch and Swinnerton-Dyer are False

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ABSTRACT

All eyes are on the Riemann's hypothesis, zeta, and L-functions, which are false, read this paper.
The Euler product converges absolutely over the whole complex plane. Using factorization method, we can prove that Riemamn's hypothesis and conjecture of Birch and Swinnerton-Dyer are false. All zero computations are false, accurate to six decimal places. Riemann's zeta functions and $L-$ functions are useless and false mathematical tools. Using it one cannot prove any problems in number theory. Euler totient function $\phi(n)$ and Jiang's function $J_{n+1}(\omega)$ will replace zeta $L-$ and functions.

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1.Introduction

The function $\zeta(s)$ defined by the absolute convergent series

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

In complex half-plane, Re $(s)>1$ is called the Riemann's zeta function.

The Riemann's zeta function has a simple pole with the residue 1 at $s=1$ and the function $\zeta(s)$ is analytically continued to the whole complex plane. We then define the $\zeta(s)$ by the Euler product

$$\zeta(s)=\prod_{P}(1-P^{-s})^{-1}, \tag{2}$$

Where the product is taken all primes P, $s=\sigma+it, i=\sqrt{-1}$, σ and t are real.

The Rieman's zeta function $\zeta(s)$ has no zeros in Re $(s)>1$. The zeros of $\zeta(s)$ in $0<$ Re $(s)<1$ are called the nontrivial zeros. In 1859 G. Riemann conjectured that every zero of $\zeta(s)$ would lie on the line Re $(s)=1/2$. It is called the Riemenn's hypothesis (Riemann, 1859). We have

$$\zeta(s=\sigma+it,\sigma\geq 1)\neq 0 \tag{3}$$

We define the elliptic curve (Coates, 2007)

$$E_D : y^2 = x^3 - D^2 x, \qquad (4)$$

Where D is the congruent number?

Assume that D is square-free. Let P be a prime number which does not divide $2D$. Let N_P denote the numbers of pairs (x, y) where x and y run over the integers modulo P, which satisfy the congruence

$$y^2 \equiv x^3 - D^2 x \text{ Mod } P. \qquad (5)$$

Put

$$a_P = P - N_P \qquad (6)$$

We then define the $L-$ function of E_D by the Euler product

$$L(E_D, s) = \prod_{(P,2D)=1} (1 - a_P P^{-s} + P^{1-2s})^{-1} \qquad (7)$$

Where the product is taken over all primes P which do not divide $2D$. The Euler product converges absolutely over the half plane Re $(s) > 3/2$, but it can be analytically continued over the whole complex plane. For this function, it is the vertical line Re $(s) = 1$ which plays the analogue of the line Re $(s) = 1/2$ for the Riemann zeta function and the Dirichlet $L-$ functions. Of course, we believe that every zero of $L(E_D, s)$ in Re $(s) > 0$ should lie on the line Re $(s) = 1$. It is called a conjecture of Birch and Swinnerton-Dyer (BSD). We have

$$L(E_D, s = \sigma + it, \sigma \geq 3/2) \neq 0 \qquad (8)$$

2. Riemann's Hypothesis is false:

Theorem 1. Euler product converges absolutely in Re $(s) > 1$. Let $s_0 = 1/2 +$ it, using factorization method we have

$$\zeta(s_0 = 1/2 + it) \neq 0 \qquad (9)$$

Proof. Let $s = 2s_0, 2.2s_0, 2.8s_0, 3s_0, 4s_0, 5s_0, \cdots P_0 s_0$

We have the following Euler product equations

$$\zeta(2s_0) = \zeta(s_0) \prod_P (1 + P^{-s_0})^{-1} \neq 0, \qquad (10)$$

$$\zeta(2.2s_0) = \zeta(s_0) \prod_P (P^{-1.2s_0} + \frac{1 - P^{-1.2s_0}}{1 - P^{-s_0}})^{-1} \neq 0, \qquad (11)$$

$$\zeta(2.8s_0) = \zeta(s_0) \prod_P (P^{-1.8s_0} + \frac{1 - P^{-1.8s_0}}{1 - P^{-s_0}})^{-1} \neq 0, \qquad (12)$$

$$\zeta(3s_0) = \zeta(s_0) \prod_P (1 + P^{-s_0} + P^{-2s_0})^{-1} \neq 0, \qquad (13)$$

$$\zeta(4s_0) = \zeta(s_0) \prod_P (1 + P^{-s_0})^{-1} \prod_P (1 + P^{-2s_0})^{-1} \neq 0, \qquad (14)$$

$$\zeta(5s_0) = \zeta(s_0) \prod_P (1 + P^{-s_0} + P^{-2s_0} + P^{-3s_0} + P^{-4s_0})^{-1} \neq 0, \qquad (15)$$

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$$\zeta(P_0 s_0)=\zeta(s_0)\prod_P (1+\cdots+P^{-(P_0-1)s_0})^{-1}\neq 0, \tag{16}$$

Since the Euler product converges absolutely in Re $(s)>1$, the equation (10)-(16) are true.
From (10)-(16) we obtain

$$\zeta(s_0)\neq 0 \tag{9}$$

All zero computations are false and approximate, accurate to six decimal places. Using three methods we proved the RH is false (Jiang, 2005). Using the same Method we are able to prove that all Riemann's hypotheses also are false. All $L-$ functions are false and useless for number theory.

3. The Conjecture of Birch and Swinnerton-Dyer is false:

Theorem 2. Euler product converges absolutely in Re $(s)>3/2$. Let $s_1=1+it$. Using factorization method, we have

$$L(E_D, s_1=1+it)\neq 0 \tag{17}$$

Proof. Let $s=2s_1, 3s_1, 4s_1, \cdots$

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$$L(E_D,2s_1)=L(E_D,s_1)\prod_{(P,2D)=1}\left(P^{-2s_1}+\frac{1-(a_P+1)P^{-2s_1}+a_P P^{-3s_1}}{1-a_P P^{-s_1}+P^{1-2s_1}}\right)^{-1}\neq 0 \tag{18}$$

$$L(E_D,3s_1)=L(E_D,s_1)\prod_{(P,2D)=1}\left(P^{-4s_1}+\frac{1-a_P P^{-3s_1}-P^{-4s_1}+a_P P^{-5s_1}}{1-a_P P^{-s_1}+P^{1-2s_1}}\right)^{-1}\neq 0 \tag{19}$$

$$L(E_D,4s_1)=L(E_D,s_1)\prod_{(P,2D)=1}\left(P^{-6s_1}+\frac{1-a_P P^{-4s_1}-P^{-6s_1}+a_P P^{-7s_1}}{1-a_P P^{-s_1}+P^{1-2s_1}}\right)^{-1}\neq 0 \tag{20}$$

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Since the Euler product converges absolutely in Re $(s)>3/2$, equations (18)-(20) are true.
From (18) - (20) we obtain

$$L(E_D,s_1)\neq 0 \tag{17}$$

All zero computations are false and approximate. Using the same method we are able to prove all $L(E,s)\neq 0$ in the whole complex plane.

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The elliptic curves are not related with the Diophantine equations and number theory (Frey, 1986). Frey and Ribet did not prove the link between the elliptic curve and Fermat's equation (Frey, 1986; Ribet, 1990). Wiles proved Taniyama-Shimura conjecture based on the works of Frey, Serre, Ribet, Mazuer and Taylor, which have nothing to do with Fermat's last theorem (Wiles, 1995). "Taniyama-Shimura conjecture" was in obscurity for about 20 years till people seriously started thinking about elliptic curves. Mathematical proof does not proceed by personal abuse, but by show careful logical argument. Wiles proof of Fermat's last theorem is false (Taylor, 1997; Ribet & Hayes, 1994, Zhivotov,2006a, Zhivotov, 2006b). In 1991 Jiang proved directly Fermat's last heorem (Jiang, 2012a).

4. Conclusion:

The zero computations of zeta functions and $L-$ functions are false. Riemann's zeta functions and $L-$ functions are useless and false mathematical tools. Using it one cannot prove any problems in number theory (Arthur, et al., 2011). The heart of Langlands program (LP) is the $L-$ functions (Gelbart, 1984). Therefore, LP is false. Wiles proof of Fermat last theorem is the first step in LP. Using LP one cannot prove any problems in number theory, for example, Fermat's last theorem (Wiles, 1995). Euler totient function $\phi(n)$ and Jiang's function $J_{n+1}(\omega)$ will replace Riemann's zeta functions and $L-$ functions [Gelbart, 1984; Jiang, 2012b; Chun-Xuan, 2016].

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