

Zeta-functions and L -functions

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I am interested in analytic number theory related with various zeta-functions and L -functions. Especially I study about the zeros of automorphic L -functions. Historically, Euler started to study zeta-function by using the analytic method for investigation of prime numbers. Riemann considered zeta-function of complex variable and mentioned the relation between the zeros of zeta-function and the distribution of prime numbers. Now we know the prime number theorem, which means the asymptotic equation of the number of primes. This theorem was obtained by the zero-free region of Riemann's zeta-function and complex analysis. After that many zeta-functions and L -functions were introduced in Number Theory. These functions include the properties of the objects of interest, such as analytic class number formula and analytic rank of elliptic curves.

Keywords : Automorphic L -functions, Zeros, Special values, Analytic rank of elliptic curve