

Weighted one-level density for Dirichlet L -functions and automorphic L -functions

SHINGO SUGIYAMA

Kanazawa University (Japan)

At the end of the 20th century, a relation between number theory and physics was considered by Katz-Sarnak. Katz and Sarnak suggested that zeros of L -functions should distribute like eigenvalues of random matrices. In this talk, we suggest the weighted density conjecture of zeros for families of L -functions. Moreover we show several pieces of evidence supporting this conjecture, such as symmetric power L -functions attached to modular forms, Dirichlet L -functions, shifted Riemann zeta functions and quadratic Dirichlet L -functions. The results on Dirichlet L -functions and on shifted Riemann zeta functions are joint work with Ade Irma Suriajaya (Kyushu University). The result on quadratic Dirichlet L -functions is joint work with Kohta Gejima (Otani University).