

On the extreme values of Euler-Kronecker constants

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The Euler-Kronecker constant, introduced by Yasutaka Ihara in the 2000s, is a natural generalization of the classical Euler-Mascheroni constant to number fields. The Euler-Mascheroni constant plays a fundamental role in analytic number theory and appears in many asymptotic formulas involving prime numbers and harmonic sums.

Despite considerable progress in recent years, many aspects of the value distribution of Euler-Kronecker constants remain mysterious, even in the case of Abelian extensions. Since the Euler-Kronecker constant can be expressed as the logarithmic derivative of the Dedekind zeta function at $s = 1$, its value distribution is closely related to the possible existence of Siegel zeros. In this talk, we report an result on extreme value estimates of Euler-Kronecker constants of some abelian fields under the Generalized Riemann Hypothesis.