ICTS Seminar

Title : Moments of the Hurwitz zeta function with irrational shifts

Speaker : Anurag Sahay (Purdue University, USA)

Date : Friday, 07 November 2025

Time : 9:30 AM (IST)

Abstract : The Hurwitz zeta function is a shifted integer analogue of the Riemann zeta function, with a shift parameter $0<\alpha\leqslant 1$. We will consider moments of the Hurwitz zeta function on the critical line with a focus on the case where the shift α is irrational. We will briefly review the deep literature on moments of the Riemann zeta function, before talking about the case of Hurwitz with rational α, which leads naturally into moments of products of Dirichlet L-functions. Heuristics involving random matrix theory can then be used to predict an asymptotic formula for all integer moments.

For irrational α, we will discuss recent work joint with Winston Heap investigating these moments, where we established that the fourth moment is of the order $T(\log T)^2$ assuming that α is not too well-approximable by rationals (concretely, when its irrationality exponent $\mu(\alpha)$ is less than 3).

Venue : Online
Zoom Link: https://icts-res-in.zoom.us/j/93231938657?pwd=Jl8GbklJTX7totWStWhCJMDKBLxYyn.1
Meeting ID: 932 3193 8657
Passcode: 070708