

MCMQ Seminar: Giorgio Cipolloni

Wednesday, 25 February 2026 11:30 (1 hour)

Title: The mystery of universality of random matrices

Abstract: Over the past fifteen years, our understanding of universality in random matrix theory has undergone a remarkable transformation. For many models of large random matrices, it is now known that both eigenvalue statistics and eigenvector structures exhibit universal behavior that depends only on the symmetry class and not on the fine details of the matrix entries. This universality lies at the heart of deep conjectures in mathematical physics—connecting topics as diverse as quantum chaos, number theory, and high-dimensional statistics.

We will survey these advances with a focus on Wigner matrices, Hermitian or symmetric random matrices with i.i.d. entries up to the symmetry constraint.