

北京师范大学 随机数学研究中心

学术报告

报告人: 许媛媛 (中科院)

题目: Universality of extremal eigenvalues of large non-Hermitian random matrices

时间: 2024 年 4 月 22 日 (周五) 下午 2: 00-4: 00

地点: 后主楼 1124

摘要: We will report recent progress on the universality of extremal eigenvalues of a large random matrix with i.i.d. entries. Beyond the radius of the celebrated circular law, we will establish a precise three-term asymptotic expansion for the largest eigenvalue (in modulus) with an optimal error term. Based on this result, we will further show that the properly normalized largest eigenvalue converges to a Gumbel distribution as the dimension goes to infinity. Furthermore, we also prove that the argument of the largest eigenvalue is uniform on the unit circle and that the extremal eigenvalues form a Poisson point process. Similar results also apply to the rightmost eigenvalues. These results are based on several joint works with Giorgio Cipolloni, Laszlo Erdos, and Dominik Schroder.