

國立中央大學數學系

專題演講

主 講 人：葉永南教授 (中央研究院數學研究所)

演講題目：Asymptotic normality criteria of coefficients of a polynomial and their applications in combinatorics

演講茶會：2019年12月13日(星期五) 2:30 p.m. ~ 3:00 p.m.

茶會地點：中央大學鴻經館M306

演講時間：2019年12月13日(星期五) 4:00 p.m. ~ 5:00 p.m.

演講地點：中央大學鴻經館M107

Abstract：

The asymptotic distribution theory for coefficients of a polynomial is an active topic in asymptotic analysis. In 1967, Harper proposed a criterion to measure the asymptotic normality of a series of numbers, when he researched the asymptotic behavior of Stirling numbers of the second kind. In this paper, we aim to develop some further asymptotic normality criteria of coefficients of a polynomial with all real roots or purely imaginary roots (including 0). These new asymptotic normality criteria turn out to be very efficient and have abundant applications in combinatorics, mainly including the coefficients of a series of characteristic polynomials of adjacency matrix, Laplacian matrix, signless Laplacian matrix, skew-adjacency matrix, chromatic polynomial, and some graph numbers, such as matching numbers, independence numbers, clique numbers. Among which, we generalize and verify some conjectures about asymptotic normality in combinatorics, e.g., the matching numbers proposed by Godsil and Kahn, the (signless) Laplacian coefficients claimed by Wang et al.

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