

# 國立清華大學數學系學術演講

## NTHU MATH Colloquium

講題 Heat flow on random polynomials

講者 Dr. Ching Wei Ho (Academia Sinica)

時間 2023.10.23 (Mon.) 16:00 – 17:00

地點 第三綜合大樓**2樓 Room 201**

茶會 15:30, Room 707

### Abstract

It is a classical problem to study the evolution of roots of polynomials under application of a differential operator. In this talk, I will discuss the heat evolution of random polynomials with a rotationally invariant root distribution on the complex plane. The limiting root distribution of the heat-evolved random polynomial can be completely determined in terms of its log potential. For example, when a Weyl polynomial, whose root distribution converges to the uniform distribution on the unit disk, undergoes heat flow, the limiting root distribution is uniform on some ellipse until time 1 at which it becomes exactly the semicircle law. This is joint work with Brian Hall, Jonas Jalowy, and Zakhar Kabluchko.