



統計科學研究所

INSTITUTE OF  
STATISTICAL SCIENCE



統計所學術演講



中研院統計所

## 學術演講

講題：The genus distribution of cubic graphs and asymptotic number of rooted cubic maps with high genus

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時間：2022年12月6日(星期二)，10:30-12:00

地點：統計所308會議室

### Abstract

Let  $C_{\{n,g\}}$  be the number of rooted cubic maps with  $2n$  vertices on the orientable surface of genus  $g$ . We show that the sequence  $(C_{\{n,g\}} : g \geq 0)$  is asymptotically normal with mean and variance asymptotic to  $(1/2)(n - \ln n)$  and  $(1/4)\ln n$ , respectively. We derive an asymptotic expression for  $C_{\{n,g\}}$  when  $(n - 2g)/\ln n$  lies in any closed subinterval of  $(0, 1)$ . Using rotation systems and Bender's theorem about generating functions with fast-growing coefficients, we derive simple asymptotic expressions for the numbers of rooted regular maps, disregarding the genus.

In particular, we show that the number of rooted cubic maps with  $2n$  vertices, disregarding the genus, is asymptotic to  $(3/\pi)n! 6^n$ .

※ 實體與線上視訊同步進行。

※ 茶會：上午10：10開始。