統計科學研究所
INSTITUTE OF STATISTICAL SCIENCE

SEMINAR STATAS

Seminar

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

Speaker：Prof. Jason (Zhicheng) Gao (高志成 教授)
(School of Mathematics and Statistics, Carleton University, Canada)

Time：10:30 AM~12:00 PM, Tuesday, Dec 6, 2022

Place：Room308 , Institute of Statistical Science

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 >= 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.

※Online live streaming through Cisco Webex will be available.

※ The tea reception will be held at 10:10.