國立陽明交通大學應用數學系
學術演講公告

主講人：陳志漢 教授（國立中山大學 應用數學系）
講　題：An isoperimetric sloshing problem in shallow containers
時　間：113 年 12 月 3 日(星期二) 下午 13:30 –14:20

Abstract

The classical isoperimetric inequality asserts that the sphere encloses the largest volume with a given surface area, but we can pretty much ask the problem of optimising any quantity with a given geometrical constraint. We will review existing results for the problem of optimising the kth-eigenvalue of the Laplacian with various boundary conditions subject to volume constraint. We will then discuss the problem of optimising the first nonzero eigenvalue of a certain coupled ODE that is motivated by the sloshing problem in fluid dynamics.

主講人：Dr. Harry Richman (NCTS)
講　題：Perspectives on tropical geometry, old and new
時　間：113 年 12 月 3 日(星期二) 下午 14:30 –15:20

Abstract

Tropical geometry is a way to approach geometry at "extreme magnitudes", and to work with "combinatorial shadows" of algebraic varieties. It is a recent branch of mathematics, but its central ideas can be traced back much farther. I will present some ideas underlying tropical mathematics, starting with two tools for solving for roots of a single-variable polynomial equation: Descartes's "rule of signs" and Newton polygons. In more modern mathematics, these tools are extended to "higher dimension" versions and used for understanding moduli spaces of varieties and their degenerations. I will describe these ideas through examples and cover some current developments.

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