

# 國立陽明交通大學應用數學系

## 學術演講公告

主講人：林晉宏 教授(中山大學應數系)

講 題：Inverse eigenvalue problem of a graph

時 間：111 年 3 月 15 日(星期二) 下午 2:00 –3:00

地 點：(光復校區) 科學一館 223 室

### Abstract

We often encounter matrices whose pattern (zero-nonzero, or sign) is known while the precise value of each entry is not clear. Thus, a natural question is what we can say about the spectral property of matrices of a given pattern. When the matrix is real and symmetric, one may use a simple graph to describe its off-diagonal nonzero support. For example, it is known that an irreducible tridiagonal matrix (whose pattern is described by a path) only allows eigenvalues of multiplicity one. In contrast, a periodic Jacobi matrix (whose pattern is described by a cycle) allows multiplicity two but no more. The inverse eigenvalue problem of a graph (IEPG) focuses on the matrices whose pattern is described by a given graph and studies their possible spectra. In this talk, we will go through some of the histories of the IEPG and see how combinatorial methods (zero forcing) and analytic methods (implicit function theorem) can come into play in modern-day research.

敬請公告 歡迎參加

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