

THE UNIVERSITY



OF HONG KONG

*Institute of Mathematical Research  
Department of Mathematics*

# COLLOQUIUM

## Isospectrality in number theory, geometry and combinatorics

**Professor Wen-Ching Winnie Li**  
The Pennsylvania State University, USA

### **Abstract**

In 1966, Marc Kac posed the question “Can one hear the shape of a drum?” It can be rephrased as “Does the spectrum of the Laplacian on a compact Riemannian manifold determine the manifold up to isometry?” This problem had attracted a lot of attention. To this day, interesting pairs of isospectral but nonisometric manifolds, graphs and complexes have been constructed. Many constructions are based on Sunada’s algebraic criterion published in 1985. In this talk we shall discuss isospectrality in the context of number theory, geometry and combinatorics, the role played by Sunada’s criterion, and connections to zeta functions.

Date: January 27, 2016 (Wednesday)

Time: 3:00 – 4:00pm

Place: Room 210, Run Run Shaw Bldg., HKU

*All are welcome*