



THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Department of Mathematics

SEMINAR ON APPLIED MATHEMATICS

Computational Optimization of Spectral Band-gap for Periodic Wave Operators

By

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Abstract

In this talk, we consider the optimization problem of maximizing the shared gap between two spectral bands of two periodic wave operators that attain different topological invariant. I will present an efficient semi-definite optimization approach to solve the underlying optimization problem subject to the PDE constraints in the form of the eigenvalue problem. I will also introduce a computational strategy to preserve the topology of the photonic crystal during the optimization.

Date : 04 June 2025 (Wednesday)

Time : 11:00a.m.-12:00noon

Venue : Room 4504 (Lift 25/26)

All are Welcome!