THE HONG KONG POLYTECHNIC UNIVERSITY
香港理工大學

DEPARTMENT OF APPLIED MATHEMATICS
應 用 數 學 系

The Hong Kong Polytechnic University
Department of Applied Mathematics

Colloquium

Finite Element/Holomorphic Operator-Value Function Approach for Nonlinear Eigenvalue Problems

By

Prof. Jiguang SUN
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Abstract

We propose a new approach combining the holomorphic operator value function and finite elements for some nonlinear eigenvalue problems. The eigenvalue problem is formulated as the eigenvalue problem of a holomorphic Fredholm operator function of index zero. Finite element methods are used for discretization. The convergence of eigenvalues/eigenvectors is proved using the abstract approximation theory for holomorphic operator functions. Then the spectral indicator method is extended to compute the eigenvalues. The proposed approach is employed to compute the band structures of photonic crystals.

Date: 7 April 2022 (Thursday)
Time: 10:00-11:00 (Hong Kong Standard Time GMT +8)
Venue: Online Talk via Zoom (Meeting ID: 919 2384 8283)
Speaker: Prof. Jiguang Sun, Michigan Technological University
Host: Dr. Buyang Li, The Hong Kong Polytechnic University
Click to join:
https://polyu.zoom.us/j/91923848283?pwd=dy93VHBMU3hlc1ZBdWVZTDZxY09HZz09

Click to join

*** * * ALL ARE WELCOME * * ***

For enrolment, please send your name and email to wai-yan.moon@polyu.edu.hk on or before 6 April 2022