



DEPARTMENT OF APPLIED MATHEMATICS

應 用 數 學 系

**The Hong Kong Polytechnic University
Department of Applied Mathematics**

Colloquium

**Fast Solvers for Edge Element Discretizations of Time-harmonic
Maxwell Equations**

by

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South China Normal University**

Abstract

In this talk, we will introduce some fast solvers for edge element discretizations of time-harmonic Maxwell equations. We first present the classical two grid method, iterative two grid method and improved two-grid method. Secondly, we design and analysis the corresponding additive Schwarz preconditions, the key is to construct a special "coarse mesh" space, which adds the kernel of the curl-operator in a fine space to a coarse mesh space, to solve the original problem, and then uses the fine mesh space to solve the $H(\text{curl})$ -elliptic problem. Numerical experiments show the efficiency of the proposed approach.

Date : 24 January, 2018 (Wednesday)

Time : 10:00a.m. – 11:00a.m.

Venue : TU801, The Hong Kong Polytechnic University

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