



The Hong Kong University of Science and Technology

Department of Mathematics

Seminar on Applied Mathematics

*A fast algorithm for electromagnetic scattering
from axis-symmetric objects*

by

Prof. Jun LAI
Zhejiang University

Abstract

Fast, high-accuracy algorithms for electromagnetic scattering from axisymmetric objects are of great importance when modeling physical phenomena in optics, materials science (e.g. metamaterials), and many other fields of applied science. In this talk, we develop an FFT-accelerated separation of variables solver that can be used to efficiently invert integral equation formulations of Maxwell's equations for scattering from axisymmetric bodies. Using a standard variant of Müller's integral representation of the fields, our numerical solver rapidly and directly inverts the resulting second-kind integral equation. The solver is also extended to geometries with non-smooth generating curves and the scattering from large cavities.

Date: Thursday, 8 August 2019

Time: 4:00p.m. – 5:00p.m.

**Venue: Room 5506, Academic Building
(Lifts 25-26), HKUST**

All are welcome!