



The Hong Kong University of Science and Technology

Department of Mathematics

Seminar on Applied Mathematics

**Extended Sampling Method for
Inverse Scattering Problems**

by

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Abstract

A new sampling method for inverse scattering problems is proposed to process far field data of one incident wave. The method sets up ill-posed integral equations and uses the (approximate) solutions to reconstruct the target. In contrast to the classical linear sampling method, the kernels of the associated integral operators are the far field patterns of sound-soft balls. The measured data is moved to right hand sides of the equations, which gives the method the ability to process limited aperture data. Furthermore, a multilevel technique is employed to improve the reconstruction. Numerical examples show that the method can effectively determine the location and approximate the support with little a priori information of the unknown target.

Date: Wednesday, 19 September 2018
Time: 4:00p.m. – 5:00p.m.
**Venue: Room 3472, Academic Buildings
(Lifts 25, 26), HKUST**

All are welcome!