國立中正大學數學系
暨應用數學碩士班、統計科學碩士班
學　術　演　講

A Bayesian Interpretation of the Inverse Scattering Problem

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Abstract

We study the inverse scattering problem of recovering an unknown refractive index from far-field data within a Bayesian framework. The data consist of large collections of noisy discrete samples of the scattering amplitude.

Our focus is on the frequentist properties of the posterior distribution as the sample size grows, in particular on establishing posterior consistency together with an explicit contraction rate in terms of the sample size.

This talk is based on joint work with Takashi Furuya and Jenn-Nan Wang[1,2].

A MATLAB implementation of the MCMC algorithm is available in our GitHub repository
(https://github.com/puzhaokow1993/MCMC_inverse_scattering).

[1] Takashi Furuya, Pu-Zhao Kow and Jenn-Nan Wang, Consistency of the Bayes method for the inverse scattering problem. Inverse Problems (2024)
https://doi.org/10.1088/1361-6420/ad3089

[2] Takashi Furuya, Pu-Zhao Kow and Jenn-Nan Wang, Consistency of the Bayes method for the inverse scattering problem with randomly truncated Gaussian priors. Inverse Probl. Imaging. (2025)
https://doi.org/10.3934/ipi.2025040

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地　點：本校數學館 527 教室（嘉義縣民雄鄉大學路 168 號）

茶　會：15:30~16:00 數學館四樓 409 室舉行

歡迎參加　敬請公佈
交通資訊及校內地圖請參閱如下網址
https://math.ccu.edu.tw/p/404-1069-12096.php?Lang=zh-tw