國立清華大學數學系學術演講
NTHU MATH Colloquium

講題　Baxter-type convergence results for a block Toeplitz system under long memory, with statistical applications

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時間　2022.12.19 (Mon.) 16:00 – 17:00

地點　第三綜合大樓**2樓 Room 201（請同學配戴口罩）**

茶會　15:30, Room 707

Abstract

The Wiener--Hopf (WH) equation is a semi-infinite Toeplitz system of equations that has diverse applications. In practice, truncation of the system is inevitable to calculate the solution of the WH equation in a finite time. Baxter's inequality provides an L_1-bound for the approximation error between the WH solution and its finite-section solution. However, this inequality is only valid for symbols with short memory. In this talk, we derive the Baxter-type convergence results for a block Toeplitz system when the corresponding matrix-valued symbol has a long memory. A key ingredient is using a series expansion of the inverse of a finite-order Toeplitz matrix. Based on these results, we show the Baxter-type convergence for linear prediction problems for multivariate long memory stationary processes. If time permits, we will discuss the frequency domain interpretation our approaches. This is a joint work with Akihiko Inoue.