# 國立中山大學應用數學系
# 學術演講

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講　題：Limiting Spectral Distribution of a Symmetrized Auto-Cross Covariance Matrix

時　間：2014/05/30（星期五）15：10～16：00

地　點：理學院四樓理 SC 4009-1 室

茶　會：16:00 於理 SC 4010 室 (系辦公室)

## 摘要

This paper studies the limiting spectral distribution (LSD) of a symmetrized auto-cross covariance matrix. The auto-cross covariance matrix is defined as $M_\tau = \frac{1}{2T}\sum_{j=1}^{T}(e_j e_{j+\tau}^* + e_{j+\tau} e_j^*)$, where $e_j$ ' s are $n$ dimensional vectors of independent standard complex components with properties stated in Theorem (1.1) and $\tau$ is the lag. $M_0$ is well studied in the literature whose LSD is the Marcenko-Pastur (MP) Law. The contribution of this paper is in determining the LSD of $M_\tau$ where $\tau \geq 1$. It should be noted that the LSD of the $M_\tau$ does not depend on $\tau$. This study arose from the investigation of and plays an key role in the model selection of any large dimensional model with a lagged time series structure, which is central to large dimensional factor models and singular spectrum analysis.

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