

國立成功大學統計學系暨數據科學研究所

專題演講

演講者： Prof. Keunbaik Lee
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時 間： 2020年11月26日（星期四） 15:30 - 16:30

地 點： 統計學系三樓視聽教室（62331）

（演講將以網路互動影音方式進行）

題 目： Analysis of Multivariate Longitudinal Data Using ARMA
Cholesky and Hypersphere Decompositions

摘 要

In longitudinal data with many replications, the high-order autoregressive (AR) structure of covariance matrix is required to capture the serial correlations between repeated outcomes. Thus, the high-order AR structure requires many parameters underlying the dynamic data dependence. In this paper, we proposed an autoregressive moving-average (ARMA) structure of covariance matrix involving multivariate linear models instead of the high-order AR structure of covariance matrix. We decomposed the covariance matrix using autoregressive moving-average Cholesky decomposition (ARMACD) to explain the correlations between responses at each time point, the correlation within separate responses over time, and the cross-correlation between different responses at different times. The ARMACD facilitates nonstationarity and heteroscedasticity of the covariance matrix, and the estimated covariance matrix is guaranteed to be positive definite. We illustrated the proposed methods using data derived from a study of nonalcoholic fatty liver disease.

敬請公佈 歡迎蒞臨

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敬邀

協辦單位：國立成功大學附設醫院巨量科學中心

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