



A Note on Central Limit Theorems for Linear Spectral Statistics of Large Dimensional F-matrix

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Sample covariance matrix and multivariate F -matrix play important roles in multivariate statistical analysis. The central limit theorems (CLT) of linear spectral statistics associated with these matrices were established in Bai and Silverstein (2004) and Zheng (2012) which received considerable attentions and have been applied to solve many large dimensional statistical problems. However, the sample covariance matrices used in these papers are not centralized and there exist some questions about CLT's defined by the centralized sample covariance matrices. In this note, we shall provide some short complements on the CLT's in Bai and Silverstein (2004) and Zheng (2012), and show that the results in these two papers remain valid for the centralized sample covariance matrices, provided that the ratios of dimension p to sample sizes (n, n_1, n_2) are redefined as $p/(n-1)$ and $p/(n_i-1)$, $i=1,2$, respectively.

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