Comments on the recursive formula on spectral moments of Wishart matrix and on the Rao score test statistics under model with BCS structured covariance matrix

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Abstract

Presentation consists of two distinct parts, although clearly in whole talk the interest in covariance matrix and Wishart matrix as such is expressed.

Firstly, the new comments on results regarding general recursive formula for $E[\prod_{i=0}^{k} Tr\{W^{m_i}\}]$, where $W \sim \mathcal{W}_p(I, n)$ denotes a real Wishart matrix will be given.

The second part of the talk focus on the distribution of Rao score test statistics under the multivariate model with block compound symmetry covariance structure. Here, presentation includes work in progress that after improvements aim to be published in joint paper with K. Filipiak and D. Klein that are authors of [2].

Keywords

Wishart matrix, Spectral moments, Recursive formula, Rao score test, Block compound symmetry structure.

References

[1] Pielaszkiewicz, J. M., D. von Rosen, and M. Singull (2017). On $E\big[\prod_{i=0}^{k} Tr\{W^{m_i}\}\big]$, where $W \sim \mathcal{W}_p(I, n)$. *Communications in Statistics - Theory and Methods 46,* 2990–3005.

[2] Roy, A., K. Filipiak and D. Klein (2018) Testing a block exchangeable covariance matrix, *Statistics 52(2),* 393–408.