

# Trace of powers of Wishart matrices in testing covariance matrix

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## Abstract

Assume that a matrix  $X : p \times n$  is matrix normally distributed and that the Kolmogorov condition, i.e.,  $\lim_{n,p \rightarrow \infty} \frac{n}{p} = c > 0$ , holds. Then, following [3], a test for identity of the covariance matrix using a goodness-of-fit approach is recalled. Calculations are based on a recursive formula derived by [1]. Recently, new extension of recursive formula into general covariance matrix  $\Sigma$  was derived by [4]. Talk addresses this extension and it's possible use for testing more general structures of covariance matrices.

## Keywords

trace, spectral moments, high-dimensional regime, Wishart matrix, covariance matrix, recursive formula.

## References

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