Testing independence under the doubly multivariate models with block compound symmetry covariance structure using Rao score test

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Abstract

The goal of this talk is to verify the hypothesis related to independence of features between any two time points in block compound symmetry structure in doubly multivariate model.

The Rao score test was determined for such hypothesis. It was compared with the test which is based on the likelihood ratio, F-test [1] and Roy's Largest Root test. These tests were compared in terms of their power and asymptotic convergence of their distributions for various number of individuals, features or time points.

Finally, Rao score test was applied to real data example.

Keywords

Testing, Rao score test, Likelihood ratio test, F-test, Roy's test.

References

[1] Fonseca, M., Kozioł, A. and Zmyślony, R. (2018). Testing hypotheses of covariance structure in multivariate data. *Electronic J. Linear Algebra 33*, 53–62.