Rao score test for covariance structures included in quadratic subspace

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Abstract

In this talk we present general hypothesis related to covariance structures included in (commutative) quadratic subspace of symmetric positive definite matrices. We derive the Rao score test statistic (RST) and we verify its convergence to the asymptotic chi-square distribution. For real-data example we compare the decisions about rejection of specific hypotheses using empirical distribution of RST, limiting distribution as well as the decisions taken with the use of exact likelihood ratio test statistic distribution.