



ESTIMATORS COMPARISON OF SEPARABLE COVARIANCE STRUCTURE WITH ONE COMPONENT AS COMPOUND SYMMETRY MATRIX*

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Abstract. The maximum likelihood estimation (MLE) of separable covariance structure with one component as compound symmetry matrix has been widely studied in the literature. Nevertheless, the proposed estimates are not given in explicit form and can be determined only numerically. In this paper we give an alternative form of MLE and we show that this new algorithm is much quicker than the algorithms given in the literature.

Another estimator of covariance structure can be found by minimizing the entropy loss function. In this paper we give three methods of finding the best approximation of separable covariance structure with one component as compound symmetry matrix and we compare the quickness of proposed algorithms.

We conduct simulation studies to compare statistical properties of MLEs and entropy loss estimators (ELEs), such as biasedness, variability and loss.

Key words. Separable covariance structure, Compound symmetry, Likelihood function, Entropy loss function, Estimation, Block trace operator.

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