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CLASSIFIERS FOR DOUBLY MULTIVARIATE DATA

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Abstract

This paper proposes new classifiers under the assumption of multivariate normality for multivariate repeated measures data (doubly multivariate data) with Kronecker product covariance structures. These classifiers are especially useful when the number of observations is not large enough to estimate the covariance matrices, and thus the traditional classifiers fail. The quality of these new classifiers is examined on some real data. Computational schemes for maximum likelihood estimates of required class parameters, and the likelihood ratio test relating to the structure of the covariance matrices, are also given.

Keywords: classifiers, repeated measures data (doubly multivariate data), Kronecker product covariance structure, compound symmetry covariance structure, AR(1) covariance structure, maximum likelihood estimates, likelihood ratio tests.

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