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ESTIMATION OF THE NUMBER OF COMPONENTS OF FINITE MIXTURES OF MULTIVARIATE DISTRIBUTIONS

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Abstract. An estimator of the number of components of a finite mixture of k-dimensional distributions is given on the basis of a one-dimensional independent random sample obtained by a transformation of a k-dimensional independent random sample. A consistency of the estimator is shown. Some simulation results are given in a case of finite mixtures of two-dimensional normal distributions.

Key words and phrases: k-dimensional finite mixture, normal pdf, number of components, one-dimensional finite mixture, orthogonal matrix.