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# LINEAR RELATIVE CANONICAL ANALYSIS OF EUCLIDEAN RANDOM VARIABLES, ASYMPTOTIC STUDY AND SOME APPLICATIONS

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**Abstract.** We introduce the Linear Relative Canonical Analysis (LRCA) of Euclidean random variables. Then similar properties than for usual linear Canonical Analysis are obtained. Furthermore, we develop an asymptotic study of LRCA and apply the obtained results to tests for lack of relative linear association, dimensionality and invariance.

*Key words and phrases*: Canonical analysis, relative canonical analysis, asymptotic study, linear relative association, invariance, additional information, (relative) canonical coefficient, partial canonical correlation.