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The finite sample properties of sparse M-estimators with pseudo-observations

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Abstract

We provide finite sample properties of general regularized statistical criteria in the presence of pseudo-observations. Under the restricted strong convexity assumption of the unpenalized loss function and regularity conditions on the penalty, we derive non-asymptotic error bounds on the regularized M-estimator. This penalized framework with pseudo-observations is then applied to the M-estimation of some usual copula-based models. These theoretical results are supported by an empirical study.

Keywords Copulas · Non-convex regularizer · Pseudo-observations · Statistical consistency

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