

CONVERGENCE RATE IN CLT FOR VECTOR-VALUED RANDOM FIELDS
WITH SELF-NORMALIZATION

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Abstract: Statistical version of the central limit theorem (CLT) with random matrix normalization is established for random fields with values in a space \mathbb{R}^k ($k \geq 1$). Dependence structure of the field under consideration is described in terms of the covariance inequalities for the class of bounded Lipschitz "test functions" defined on finite disjoint collections of random vectors constituting the field. The main result provides an estimate of the convergence rate, over a family of convex bounded sets, in the CLT with random normalization.

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Key words and phrases: Random fields, dependence conditions, CLT, random matrix normalization, convergence rate.

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