

A simplified second-order Gaussian Poincaré inequality with application to random subgraph counting

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A simplified second-order Gaussian Poincaré inequality for normal approximation of functionals over infinitely many Rademacher random variables is derived. It is based on a new bound for the Kolmogorov distance between a general Rademacher functional and a Gaussian random variable, which is established by means of the discrete Malliavin-Stein method and is of independent interest. As an application, standardized subgraph counts in the Erdős-Rényi random graph are discussed.

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