

CLT-related large deviation bounds based on Stein's method

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Abstract

Large deviation estimates are derived for sums of random variables with certain dependence structures. Our results cover local dependence (including U -statistics and Nash equilibria), finite population statistics and random graphs. The argument is based on Stein's method, but with a novel modification of Stein's equation inspired by the Cramér transform.

Keywords: Large deviations; Central limit theorem; Random graphs; Local dependence; Finite population statistics

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