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Berry-Esseen bounds for the number of maxima in planar regions. (English) Zbl 1065.60020
[Electron. J. Probab.](#) 8, Paper No. 9, 26 p. (2003).

Summary: We derive the optimal convergence rate $O(n^{-1/4})$ in the central limit theorem for the number of maxima in random samples chosen uniformly at random from the right triangle of the shape with corners $(0, 0), (0, 1), (1, 0)$. A local limit theorem with rate is also derived. The result is then applied to the number of maxima in general planar regions (upper-bounded by some smooth decreasing curves) for which a near-optimal convergence rate to the normal distribution is established.

MSC:

[60F05](#) Central limit and other weak theorems

[60D05](#) Geometric probability and stochastic geometry

Cited in **3** Documents

Keywords:

[central limit theorem](#); [maxima in random samples](#); [near-optimal convergence rate](#)

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