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12. Probability and Statistics

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Random permanents of increasing degree

Let $\Xi_{m,n} = [\xi_{ij}]$ be a random $m \times n$ $(m \leq n)$ matrix of independent entries bounded with probability one and satisfying $\sup_{i,j} \sum_{k=1}^{m} |E\xi_{kj} - E\xi_{ki}|/m \to 0$ as $n, m \to \infty$. In this work we derive the limiting laws for $\mathrm{Per}\,\Xi_{m,n}$ as $m, n \to \infty$ and $m/n \to \lambda > 0$. Some examples of applications of our results in statistical inference involving multiparameter multinomial distribution are given.