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Concentration of Extension Counts in $G(n,p)$

For the random binomial graph $G(n,p)$ we consider a notion that generalizes the degree sequence. Fixing a rooted graph H, for each vertex v count the number of extensions, that is copies of H in which v plays the role of the root.

In 1989, Spencer [2] gave sufficient conditions for the event that, with high probability, these extension counts are asymptotically equal for all vertices. For the important case when H is strictly balanced, Spencer also raised the fundamental question whether these conditions are necessary. In [1] we answer this question, and discuss some intriguing problems that remain open.

This is joint work with Lutz Warnke.

References

[1] M. Šileikis, L. Warnke, *Counting extensions revisited*, arXiv:1911.03012.

[2] J. Spencer, *Counting extensions*, Journal of Combinatorial Theory A, 55, 1990, pp. 247-255.