

Inhomogeneous random graphs

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Abstract

In this seminar we will discuss about inhomogeneous random graphs and generalized random graphs. Inhomogeneous random graphs are a generalization of Erdős-Rényi random graphs, in which we assume that vertices have types and we assign a probability connection of two vertices depending on their type. A subfamily of inhomogeneous random graphs are generalized random graphs, in which we assign a weight to each vertex, and the connection probability is moderated by these weights. We will discuss some properties of these graphs, such as the scale-free property, the existence of a giant component and the small world property.

References

- [1] Van der Hofstad, R.: *Random Graphs and Complex Networks. Volume 1.* Cambridge Series in Statistical and Probabilistic Mathematics, Cambridge University Press, (2017).
- [2] Van der Hofstad, R.: *Random Graphs and Complex Networks. Volume 2.* Cambridge Series in Statistical and Probabilistic Mathematics, Cambridge University Press, (2024).
- [3] Bianchi, A.: *Lecture notes of Random Graphs and Networks.* (2022).