

Random graphs and its applications for networks

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Analytical Approach of Sparse Random Graphs Phase Transitions

Several combinatorial structures are subject to phase transitions as one of their parameters increases when their sizes are large but fixed.

Such structures include random CNF formulas or random graphs.

In this talk, we will review various phase transitions of random graph properties or k -CNF formulas, emphasizing the strengths (and limits?) of enumerative/analytic approaches. In particular, we will show how to shift the localization of a phase transition by restricting the degrees of the vertices of the graphs to an arbitrary set.