

COMBINATORICS
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The Turán Problem for Bipartite Graphs

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Abstract: Extremal problems in graph theory, generally speaking, study the interaction between the density of a graph and substructures occurring in it. A natural and central problem of this nature asks for how dense a graph can be when it is missing a particular subgraph. These problems are known as Turán problems. These problems have played a central role in the development of extremal graph theory.

While the celebrated Erdős–Stone–Simonovits theorem essentially solves the problem when the missing subgraph H is non-bipartite, much less is known when H is bipartite. While there have been steady movements on the problem in the past, there has been an increased amount of progress in recent years due to fresh ideas and angles to approach these problems. In this talk, we will survey some of the recent progresses and techniques/ideas involved in them and suggest further problems to explore.

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