Seminar on Combinatorial Computing
March 1, Wednesday, 6:20 p.m.
Room 3212, Graduate Center
365 Fifth Avenue, New York

Graph embedding problems Methods and Applications

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Abstract

A graph embedding result is the formulation of sufficient conditions for a graph G (usually using some notion of density) that ensure it contains a subgraph H with specified properties. some approaches to graph embedding problems are presented with applications.

The incremental approach starts with a graph which is trivially contained in G, and then by successive improvements obtains graphs which satisfy more and more of the required properties. This approach is useful for obtaining simple, efficient algorithms which approximate some known embedding results and conjectures.

The Regularity Lemma of Szemerédi states that every graph can be roughly approximated by one of a finite number of possibilities (this number depends on the accuracy of the required approximation), and is useful in a wide variety of embedding problems. Some applications are presented, concluding with a short presentation of a combinatorial result related to graph property testing, which is proven using a special variant of the Regularity Lemma.

Some of the results are joint work with N. Alon; the result related to graph property testing is joint work with N. Alon, M. Krivelevich and M. Szegedy.

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or visit our website: http://math.gc.cuny.edu/Seminars/Combinatorics.html