## Combinatorics Seminar

## Analytic representations of large discrete structures

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**Abstract:** The theory of combinatorial limits aims to provide analytic models representing large graphs and other discrete structures. Such analytic models have found applications in various areas of computer science and mathematics, for example, in relation to the study of large networks in computer science. We will provide a brief introduction to this rapidly developing area of combinatorics and we will then focus on several questions motivated by problems from extremal combinatorics and computer science. The two topics that we will particularly discuss include quasirandomness of discrete structures and a counterexample to a a conjecture of Lovasz, which was one of the two most cited conjectures in the area and which informally says that optimal solutions to extremal graph theory problems can be made asymptotically unique by introducing finitely many additional constraints.

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