

Wednesday, 9:00–10:00

Room 148

Polynomials in Discrete Mathematics, I: Geometric and Number Theoretic Applications

Noga Alon, Tel Aviv University

Elementary properties of polynomials can be very powerful in the study of various combinatorial problems. I will illustrate this fact by discussing several problems in Combinatorial Geometry and by describing a general technique that can be called "Combinatorial Nullstellensatz" together with some of its applications in Additive Number Theory. Some of its Graph Theoretic applications will be described in the second lecture.

1:30–2:30

Room 148

Polynomials in Discrete Mathematics, II: Graph Theoretic Applications

Noga Alon, Tel Aviv University

I will illustrate how polynomials can be used to attack problems in Graph Theory. These include extremal problems, graph coloring problems, and the study of the Shannon capacity of graphs, which is motivated by questions in Information Theory.